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Use of Variables from the National Social Life, Health, and Aging Project (NSHAP): January 2007 – January 2015

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PRESENTED BY:
NORC at the University of Chicago
55 East Monroe Street
30th Floor
Chicago, IL 60603
Ph. (312) 759-4000

AUTHORS:
Kelly M. Pudelek
Jennifer Hanis-Martin, Ph.D.
Michael Kozloski, Ph.D.
Melissa J. K. Howe, Ph.D.
Sara A. Henning, Ph.D.

AUTHOR INFORMATION

Kelly M. Pudelek
Survey Specialist I
NORC at the University of Chicago
1155 East 60th Street, 2nd Floor
Chicago IL 60637 USA
Phone: (773) 256-6189
Fax: (773) 256-6313
Pudelek-Kelly@norc.org

Jennifer Hanis-Martin, Ph.D.
Principal Research Analyst
NORC at the University of Chicago
8285 SW Brentwood
Portland, OR 97225 USA
Phone: 312-505-9725
Fax: (773) 256-6313
Hanis-Jen@norc.org

Michael Kozloski, Ph.D.
Research Scientist
NORC at the University of Chicago
1155 E. 60th Street, 2nd Floor
Chicago, IL 60637 USA
Phone: (773) 256-6190
Fax: (773) 256-6313
Kozloski-Michael@norc.org

Melissa J. K. Howe, Ph.D.
Research Scientist
NORC at the University of Chicago
1155 E. 60th Street, 2nd Floor
Chicago, IL 60637 USA
Phone: (773) 256-6164
Fax: (773) 256-6313
Howe-Melissa@norc.org

Sara A. Henning, Ph.D.
Senior Research Scientist
NORC at the University of Chicago
1155 E. 60th Street, 2nd Floor
Chicago, IL 60637 USA
Phone: (773) 256-6319
Fax: (773) 256-6313
Henning-Sara@norc.org

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Abstract

Objective: This study evaluates the use of variables from Waves 1 and 2 of the National Social Life, Health, and Aging Project (NSHAP). The evaluation was undertaken to inform the development of Wave 3 data collection instruments by looking at which NSHAP variables were used, and frequency of use.

Methods: This study was carried out by collecting and coding 104 articles and book chapters published between January 2007 and January 2015. Frequencies of variables from NSHAP Waves 1 and 2 were calculated and were ranked in order of use. Variables were separated into three categories: *Interview Questions*, *Assessments*, and *Biospecimen Assays*. Analysis also compared publications by authorship to look at differences between NSHAP-affiliated and unaffiliated authors.

Results: 279 variables from Waves 1 and 2 of NSHAP were analyzed. 179 (64 percent) NSHAP publicly available variables have been used one or more times in the publications reviewed and 98 (35 percent) variables have never been used in publications. The top variables were listed and *Self-Reported Physical Heath* was the most frequently used interview question variable; *Blood Pressure* was the most frequently used assessments variable; *C-Reactive Protein* was the most frequently used biospecimen assay variable. Few differences were found between affiliated and unaffiliated scholars in frequency of variable use.

Discussion: This study offers insight into how NSHAP variables have been used by the scientific community through January 2015. This accounting of variable use aided in the preparation of data collection instruments for Wave 3. While many unused variables were retained with the expectation that additional time points will encourage use in the future, several unused items were shortened from the interview protocol. Similar methods may be used to analyze NSHAP variable use in the future.

1. Introduction

The design of longitudinal data collection instruments must strike a balance between repeating measures across waves and improving questionnaire design. Concurrent demands for scientific innovation, on the one hand, and data synchronization, on the other, are in inevitable tension. Researchers strive to collect data that will speak to both current and future research questions, while complying with budgetary and time constraints. The goal of questionnaire design, ultimately, is to contribute to the scientific literature in a meaningful way by providing useful, reliable data. One method of assessing whether or not the data collection instruments are meeting the needs of the scientific community is to examine the use of the data in scientific publications. In this paper, we analyze written publications (bibliometric data) to evaluate the

use of variables from both Waves 1 and 2 of the NSHAP data in peer-reviewed publications. That is, we provide an accounting of which NSHAP variables appear most heavily used and unused. In combination with the above considerations, this evaluation helped to inform development of the third wave of data collection instruments for the National Social Life, Health, and Aging Project (NSHAP).

2. Background

NSHAP is a unique study of aging that integrates social and biological data to arrive at a better understanding of health and relationships among older Americans. In 2005 and 2006, NORC and Principal Investigators at the University of Chicago conducted the first wave of NSHAP, completing 3,005 interviews with a nationally representative sample of adults aged 57 to 85. In 2010 and 2011, nearly 3,400 interviews were completed for Wave 2, which included three types of respondents: Wave 1 Respondents, Wave 1 Non-Interviewed Respondents, and the spouses or cohabiting romantic partners of both. The Wave 1 NSHAP data were collected through in-home interviews by trained interviewers from July 2005 to March 2006. The data were publicly released through the National Archive of Computerized Data on Aging (NACDA), located within the Inter-university Consortium for Political and Social Research (ICPSR),[1] September 2007.[2] Wave 2 interviews were conducted from August 2010 to May 2011 and NACDA released the Wave 2 data in early 2013.[3]

For both Waves 1 and 2, interviewers collected data through face-to-face interviews in respondents' homes eliciting information on a wide range of social and health domains, including demographic characteristics, social networks and support, physical and mental health, functional measures (mobility, cognition, and sensory ability), and several other health measures (e.g., height, weight, blood pressure, C-Reactive protein, and cortisol).

A primary aim of NSHAP is to provide the research community with quality, user-friendly data to explore a variety of age-related research questions. The NSHAP team advertises the existence of this unique, public longitudinal dataset through a variety of venues and provides instruction about its use. Two early

[1] http://www.icpsr.umich.edu/icpsrweb/NACDA

[2] Waite, Linda J., Edward O. Laumann, Wendy Levinson, Stacy Tessler Lindau, and Colm A. O'Muircheartaigh. National Social Life, Health, and Aging Project (NSHAP): Wave 1. ICPSR20541-v6. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2014-04-30. http://doi.org/10.3886/ICPSR20541.v6

[3] Waite, Linda J., Kathleen Cagney, William Dale, Elbert Huang, Edward O. Laumann, Martha McClintock, Colm A. O'Muircheartaigh, L. Phillip Schumm, and Benjamin Cornwell. National Social Life, Health, and Aging Project (NSHAP): Wave 2 and Partner Data Collection. ICPSR34921-v1. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2014-04-29. http://doi.org/10.3886/ICPSR34921.v1

results workshops, supported by NIH (R13AG032224, R13AG044062), encouraged the use of NSHAP data, fostered interdisciplinary collaboration, and developed a network of scholars familiar with NSHAP and dedicated to interdisciplinary aging research. To provide users with a reference tool, special issues of *The Journals of Gerontology Series B: Social Sciences*, were published for Waves 1 and 2 (Hayward and Wallace 2014; Wallace 2009). In addition to these discrete efforts, numerous presentations and workshops have been held at national conferences (e.g., Population Association of America, American Sociological Association, Gerontological Society of America), where NSHAP investigators make data handouts available to attendees.

The multi-disciplinary, multi-modal, longitudinal design of projects like NSHAP poses unique challenges and opportunities for analysis and research (Hillygus and Snell 2015). On such large-scale data collection efforts, a primary tension with which investigators wrestle is the necessity to maintain continuity for longitudinal analyses while also innovating and improving survey instruments (e.g., Buck and McFall 2012; Hillygus and Snell 2015; Jackson 2011; Jaszczak et al. 2014; McGonagle, Schoeni, Sastry and Freedman 2012). Longitudinal study investigators such as the NSHAP team are charged with designing instruments to address both current and future research questions of interest to researchers (Wadsworth 2014). When instruments are too long, respondent burden and nonresponse may increase (e.g., Galesic and Bosnjak 2009; Jackson 2011). Consequently, it is important to balance the desire to collect more data with the constraints of maintaining response rate and decreasing burden. Cost is also a factor (Jackson 2011). The cost of administering an in-person survey is associated with the content and length of the data collection instrument (Stopher 2012), and thus each item in the survey must provide the "most bang for the buck." At times this may mean eliminating questions that are underused (Jackson 2011; Althaus and Tewksbury 2007). To help inform decisions about which variables to include in NSHAP Wave 3, we used bibliometric data to assess how often Wave 1 and Wave 2 variables appeared in published scholarship between January 2007 and January 2015.

Attempts to measure and evaluate scientific productivity are common and date back to the 1960s (Garfield 2006). Our use of bibliometric data to analyze variable use resembles approaches taken in other longitudinal surveys, including the Household, Income and Labour Dynamics in Australia (HILDA) Survey (Watson and Wooden 2012), and the Health and Retirement Study (HRS) (Jackson, Balduf, Yasaitis, and Skinner 2011). In the case of HRS, the authors found that a relatively small number of items from the HRS survey were used in a disproportionately large proportion of published research on health, income and employment (p. 2). We aimed to determine if and how NSHAP variables have likewise been unevenly represented in publications during the first eight years of this longitudinal study.

3. Methods

3.a. Data Collection

A team of researchers collected all English-language, peer-reviewed journal articles and book chapters in which NSHAP data are analyzed up until January 2015.[4] Publications were located using the University of Chicago Library, PubMed, and Google Scholar. An alert for "NSHAP" was set in Google Scholar to alert the research team continuously when a new article emerged containing the phrase. Each potentially eligible article was examined to assess whether or not it analyzed NSHAP data. The inclusion criterion for eligible publications was broad; publications only needed to analyze one or more variables from the NSHAP data set.

The 139 collected publications include 135 journal articles and four book chapters. Our analytical sample includes fewer publications (N=104) as we excluded articles written for NSHAP Special Issues of the 2009 and 2014 *Journal of Gerontology, Series B: Psychological Sciences and Social Sciences.*[5] Special Issue articles were written by NSHAP investigators to introduce the dataset and provide examples of how the scale components and biomeasures can be used in analysis. Thus, we felt they should be excluded from our inquiry into which NSHAP variables have been used most and least frequently. The total sample for analysis includes 104 publications, including 100 peer-reviewed publications and four book chapters. Authorship of publications includes a mix of scholars affiliated and unaffiliated with the NSHAP team. Authors affiliated and unaffiliated with the NSHAP team were identified to gauge and compare NSHAP variable usage by author-type.

Six members of the research team independently read and coded 104 publications to determine the variables analyzed in the literature. Each publication was coded by two coders. Discrepancies identified between coders were reconciled through discussions of each case.

Variables from Waves 1 and 2 were taken from their respective codebooks and listed in an Excel spreadsheet. See Table 1 for a summary of the content areas and data collection format of the data collection instruments for both Waves 1 and 2. Demographic variables including race, ethnicity, gender, education, and age were excluded from the spreadsheet. Each coder read the publication and entered "1"

[4] In contrast to the similar analysis conducted by Jackson and her colleagues (2011), NSHAP has fewer waves of data than HRS, and the relatively smaller scope enabled us to evaluate all known publications using NSHAP data, rather than a sampling (publications 2006-2009).

[5] The title of the journal changed from "Journal of Gerontology: Social Sciences" to "Journal of Gerontology, Series B: Psychological Sciences and Social Sciences" in 2011.

for each variable that was included in the analysis and "0" for each variable that was not present, creating a series of dummy variables. Only variables that were explicitly mentioned in the preliminary or final analysis, or tables and figures were included. Any variables that were simply mentioned to introduce or describe the data set were excluded. There were some variables that were automatically calculated based on the respondent's responses to previous questions, CAPI-computed (Computer-Assisted Personal Interviewing) variables. The research team disaggregated the components of CAPI-computed variables, and scale variables (e.g. Center for Epidemiological Studies Depression (CES-D) Scale consisted of 11 separate items) into their component variables during the coding process, consistent with how they appeared in the codebooks. Where appropriate for analyses, the components were combined into their aggregate forms. Variables that changed slightly or significantly between waves were labeled uniquely in the codebooks and those variables were recorded separately by wave. Composite variables were then combined (e.g. Difficulty with Activities of Daily Life includes variable components measuring functional health, such as walking one block, eating, and getting in or out of bed). In total, 279 variables were used in the analysis. Analyses were carried out using SPSS Version 19.0 (IBM Corp, 2010).

3.b. Data Analysis

The 100 peer-reviewed articles reviewed were published in a total of 57 peer-reviewed journals. The first step of the analysis separated existing variables into three categories (see Figure 1a): 1) *Interview Question* variables, 2) *Assessment* variables, and 3) *Biospecimen Assay* variables. Table 1 shows the subcategories within each. Variables comprising Interview Questions (N=221, 79 percent) include self-report variables, both in-home, face-to-face interview questions as well as leave-behind respondent-administered questions (LBQ). The Assessments category (N=15, 5 percent) includes data collected by taking measurements of different aspects of respondents' health, such as *Weight*, *Blood Pressure*, and *Pulse*, and by performing tests of respondents' cognitive, sensory and physical abilities. The Biospecimen Assays category (N=43, 15 percent) includes variables derived (or to be derived) from assaying biospecimens collected from respondents, such as *C-Reactive Protein* (from dried blood spots), *Yeast Vaginosis* (from vaginal swabs), and *Microalbumin* (from urine).

For ease of interpretation, related interview measures were grouped into single entities as long as they belonged to a scale or an inter-dependent series of questions and had never or very rarely been used exclusively of the other variables. For example, the 11 variables that comprise the CES-D Scale, the 5 Activities of Daily Life (ADL), and the three readings for systolic (and diastolic) blood pressure were grouped together as separate categories. The total number of times used were calculated and each variable

was flagged '0' for 'Never Used' or '1' for 'Used 1 or more times.' Results for total variable usage were charted for each of the three variable groups (Figure 1a).

Second, total times used were summed and split into two groups for each of the three variable types: 1) usage by NSHAP-affiliated authors and 2) usage by unaffiliated authors (see Figures 1b, 2 and 3). We categorized authors as "affiliated" if they were involved in regular study design meetings for Wave 1 or Wave 2 NSHAP data collection. Articles were separated by determining whether the first or last author was affiliated. The majority of affiliated authors are faculty or staff at the University of Chicago or NORC at the University of Chicago. We separated the articles by authorship to determine how the data were used by researchers beyond the NSHAP team. NSHAP investigators intend to produce datasets that are widely understood and used. Since NSHAP is a public dataset, we felt that examining use beyond the NSHAP team was important to being able to ensure its value as a public good. Results were plotted and statistical tests performed for each variable, comparing the groups via two Pearson's chi-squared tests. We used the chi-squared test to compare frequency of use between affiliated and unaffiliated authors. **T**he top 50 most-used interview variables as well as 15 ever-used Assessments, and 12 ever-used Biospecimen Assays are shown in Figure 3 as total number of times used (out of a maximum of 104).

Finally, all variables that have never been used in the 104 eligible publications were listed with their corresponding section and question number identifiers and split into two groups (see Table 2): 1) those that have been available since the release of the NSHAP Wave 1 data; and 2) those that have only been available since the release of the NSHAP Wave 2 data. The latter group comes with a caveat, however, because numerous biospecimen assays from NSHAP Wave 2 still require processing before being made publicly available. As is often the case with this type of data, the cleaning and release of variables derived from NSHAP biospecimen assays have lagged behind that of questionnaire and assessment data; this is due to the additional time required for biospecimen sample preparation, and release.

4. Results

4.a. Overall Variable Use

In total, 279 Wave 1 and Wave 2 NSHAP variables were identified , and 104 publications were reviewed, including 100 peer-reviewed articles and four book chapters. Appendix 1 provides a complete list of the 104 publications selected for analysis as well as the 35 special issue articles excluded from the analyses.

Nearly two-thirds (63 percent) of all 279 Wave 1 and Wave 2 NSHAP variables have been used one or more times in the publications analyzed (see Figure 1a). This includes 154 (70 percent) of the 221

interview question variables, all 15 (100 percent) of the 15 assessment variables, and 12 (28 percent) of the 43 biospecimen assay variables. See Appendix 2 for a complete list of NSHAP variables listed in order of frequency of use in publications.

4.b. Variables Used Most Frequently

The assessments and biospecimen assay variables that were used in publications were plotted next to each other (Figure 2). Assessments variables were used in 29 publications, and biospecimen assay variables were used in 14 publications. Within the assessments category, the variables *Weight* and *Height* top the list of variables that have been used most often in published work, followed by *Blood Pressure* and *Pulse*. The variable *Tactile Perception* has been used least often. Within the biospecimen assays category, the variable *C-Reactive Protein (CRP)* has been used most often, followed by *Glycosylated Hemoglobin* (often referred to as HbAlc).[6] *CRP* is used to measure inflammation and *HbAlc* is often used to assess whether individuals have diabetes. Appearing least often in published scholarship are *Progesterone*, *Epstein-Barr Virus Antibody Titers*, and *Orasure HIV Test*.[7]

Figure 1b shows the proportions of variables used in each domain, and the top 50 most-used interview variables are shown in Figure 3. Out of all non-demographic NSHAP interview variables, *Self-Rated Physical Health* has been used most often, showing up in approximately half of the 104 publications. It is followed closely by *Relationship Status of Unmarried Respondents* and *Depression.*[8] Beginning with *Diabetes* and *Hypertension*, 12 indicator variables from NSHAP's *Morbidity* section are among the 50 most frequently-used NSHAP variables (Figure 3), largely due to their inclusion in the Modified Charlson Comorbidity Index and the NSHAP Comorbidity Index. In general, health-related variables consist of roughly half the top 50 list; and social support variables also frequent the top 50 list. Although these are results expected from a study whose central focus is the relationship between the social contexts of individuals and their health, this list also highlights the range of ways researchers have used NSHAP to measure health and social support, from comorbidities to health-behaviors, and from openness with spouse to number of friends.

[6] *CRP* and *Glycosylated Hemoglobin* both were assayed from dried blood spots

[7] The *Epstein-Barr Virus Antibody Titers* also came from dried blood spots, and the *Progesterone* and *Orasure HIV Tests* from saliva collection.

[8] As assessed via the CES-D Scale.

4.c. Authorship of Frequently-Used NSHAP Variables in 104 Eligible Publications

Analyses were conducted to distinguish between publications authored by affiliated and unaffiliated authors. We categorized authors as affiliated if they were involved in regular study design meetings for Wave 1 or Wave 2 NSHAP data collection, the majority of which are University of Chicago faculty or NORC at the University of Chicago staff. We expected to find that affiliated authors have been responsible for producing a higher proportion of publications using NSHAP data, given their role in NSHAP study design. Indeed, affiliated NSHAP authors (represented by the light gray bar color in Figures 1b, 2 and 3) have produced more than half of publications using NSHAP variables across all three variable categories. Frequencies in Figure 2 show that the only variable that has been used significantly more often by unaffiliated scholars than affiliated scholars (α=0.05) is the one measuring C-reactive protein. Surprisingly, *olfactory function*, *cotinine* (Figure 2) and h*ypertension* (Figure 3) are the *only* variables that were used significantly more often by affiliated authors. Other variable use differences between affiliated and unaffiliated authors were not statistically significant.

4.d. Variables Measured in Wave 1 or Wave 2 Only

In Figure 2**,** and in Tables 1 and 2, variables which are only available in either wave of NSHAP are distinguished from variables which have been measured in both waves . As a longitudinal study, differences across waves are not the norm, but these unique variables are worth discussing. Several Wave 1-exclusive measures are among the most-used of any NSHAP variable, and four (actigraphy, MoCA, sleep, and hip circumference) Wave 2-exclusive assessment variables have been used, though none of those are among the top 50. The SPMSQ is the fourth most-used assessment variable (Figure 2), cotinine is the fifth most-used biospecimen assay (Figure 2) and the diagnosis of chronic kidney disease and peptic ulcers are among the 50 most-used NSHAP interview question variables (see Figure 3). An important caveat to this result is that some variables changed significantly across waves. For example, the SPMSQ, used during Wave 1, is a similar version of the MoCA measure that was used during Wave 2, indicating that the measures studied remain topics of interest even though the variable changed across waves.

4.e. Characteristics of Never Used Variables

All never-used variables in the 104 eligible publications are listed by Domain in Table 2, which also shows: Subdomain, the actual Measure, and whether or not each measure is available in Wave 1 and/or Wave 2. Of the 279 total Wave 1 and Wave 2 NSHAP variables, 98 (35 percent) have never been

analyzed in the 104 publications reviewed. Referring back to Figure 1a, 67 (30 percent) of 221 interview question variables were not used, and 31 (72 percent) out 43 biospecimen assay variables were unused.[9]

Approximately two-thirds of the 104 never-used variables are either biospecimen assays or from the Leave-Behind Questionnaire (LBQ) portion of the interview questions. There were 15 unused physical health variables, 11 unused measures about sex and partnership, a few unused employment and finance items, medication items, and finally, a handful of measures from a section devoted to field interviewer observations were not used. All of the variables from the Basic Background Information, Social Context, SAQ, Mental Health, Religion, and Physical Contact sections have been used one or more times.

4.e.1. Never-Used Interview Question Variables

Of the 37 never-used variables from the Leave-Behind Questionnaire (LBQ) portion of the interview questions[10]: eight were on childhood background, 7 were about attitudes and life experiences, seven were health-related, five were general background questions, three were neighborhood characteristics, three were fertility questions, three were about social relationships and activities, and one was about bereavement.

A number (7) of the never-used Physical Health variables were related to surgeries and procedures while the others were about sensory function (2), health care utilization (2), STDs (2), functional health (1), care receiving (1), and medical decision making (1) (see Table 2).

Among the smaller categories in Table 2, 3 of the 115 never-used Sex & Partnership variables are are about pre-pubertal sexual experience, and two are about sexual interest and motivation. Half (2) of the never-used Field Interviewer Comments variables are on the characteristics and location of the interview, while the other two are on logistics and other information. Two of the never-used Employment & Finances variables are on household assets, while the other one is about partner's employment. Finally, the three never-used variables from the Medications section in the middle of the Biomarker Break are use of sleep medication, sharing of needles and stopping medication due to sexual side effects.

[9] All 15 assessment variables have been used.

[10] Response rates for the LBQ items were lower than for the rest of the personal interview items.

4.e.2. Unavailable/Unused Biospecimen Assay Variables

Of the 43 Biospecimen Assay Variables, the available items (N=12, 28 perent) have been used, leaving N=31 (72 percent) that have never been used. Biospecimen Assays that were unavailable/never been used are the *18 Cytokines*, 3 proteins (*Adiponectin*, *Apolipoprotein B* and *NGAL*), three urinary assays (*Creatinine*, *Oxytocin* and *Vasopressin*), two vaginal swab assays (*HPV* and *Vaginal Cytology*), three additional microtainer assays (*Cholesterol*, *Fibrinogen*, and *HDL*), salivary *Cortisol* and genotype via the Oragene DNA collection.

5. Discussion & Limitations

As with all social science research, careful attention to NSHAP data collection design is paramount. Like other longitudinal studies, NSHAP Wave 3 study design aimed to balance innovation with continuity. With this in mind, we endeavored to produce an accounting of the most and least used NSHAP variables to date. Determining the substantive domains of publications and the relative impact of the peer-reviewed sources provides insight into how NSHAP variables have been used by scientific researchers, and which NSHAP domains have been used most often through January 2015. Interview questions and assessments data take significantly less preparation time than biospecimen assays, therefore, results from analysis of the use of NSHAP biospecimen assays items require separate interpretation since they are subject to a longer timeline to usable data.

To gain additional insight into NSHAP variable use, we explored three related questions: 1) With respect to frequency of variable use, does the work of NSHAP-affiliated scholars differ significantly from that of unaffiliated scholars?; 2) How many NSHAP variables have never been used and why might this be the case?; and 3) Does it make a difference in our variable use results if we assign different weights according to the influence of the journals in which they appear? These questions motivated us to undertake additional analytical steps that depart from Jackson and colleagues' (2011) aforementioned approach. To summarize, these follow-up analyses revealed that: 1) while affiliated scholars represent a higher propotion of authors publishing using NSHAP data than unaffiliated scholars, there are few significant differences in how they have used the data; 2) a surprisingly high number of Wave 1 and Wave 2 NSHAP variables have rarely or never been used; and 3) weighting the variables using journal impact factor (JIF) scores had very little impact on results. Here we briefly consider each in turn.

5.a. Few Differences between NSHAP-Affiliated and Unaffiliated Publications

We anticipated finding that affiliated authors have been responsible for producing a higher proportion of publications using NSHAP variables, given their role in NSHAP study design and implementation. By virtue of their direct involvement in NSHAP study design, these affiliated scholars are invested in and well informed about the study and the variables months before the public release of the data. In particular, olfactory function, which was used significantly more often by affiliated authors, was actually designed by the investigator team to measure both odor detection and identification, representing the first time such detection could be measured in a field setting (Kern 2014). What is perhaps more surprising, then, is that there is not a large difference between the work of NSHAP-affiliated scholars and those that are unaffiliated. The difference in frequency of variable use between the two groups was only statistically significant in the case of four variables. A larger difference might be viewed as concerning, and interpreted as a gap between the research interests of the researchers designing the study and the larger field. So we may view the consistency in frequency of use as one indication that NSHAP investigators' research interests are consistent and in-step with those of unaffiliated colleagues in the fields of social life, health and aging.

5.b. Possible Reasons some NSHAP Variables Have Not Yet Appeared in Publications

A surprisingly high number (98) of Wave 1 and Wave 2 NSHAP variables have rarely or never been used. There are several possible explanations for why this number of NSHAP variables have not yet appeared in publications. First, the method relied on coders manually coding articles to list each variable used. While we relied on two coders for each article, human error still may have resulted in missed variables. Precautions were made to combat this limitation through the use of two independent coders of each article with subsequent reconciliation and discussion but some error may still exist. Another thing to consider is that publications often do not explicitly name the variables used in analyses, nor do journals routinely publish analyses resulting on null findings. Consequently, NSHAP variables used in analyses that did not result in publishable material were likely overlooked.

It may be that not enough time has passed. As a longitudinal study, the NSHAP is still at an early stage. Only five years have passed since the second wave of data was collected, and the Wave 2 data (minus some of the biospecimen assays) have been publicly available for less than three years. It is reasonable to assume that over time, as the NSHAP becomes more widely known, its variables will be featured in more publications.

In addition, variable use in published works is only one of several indicators of a variable's worth to the research community. As noted by Jackson and her colleagues in their analysis of HRS publications, this type of analysis cannot perfectly capture worth, nor does it attempt to devalue variables. The main objective of the study was to evaluate the use and non-use of NSHAP variables in peer-reviewed publications and books. As some variables have been accessible to the public for a shorter period of time than others, their use is not a perfect indicator of researcher interest. The biological assay variables offer objective measures of health, and provide opportunities for innovative longitudinal analyses. Since they have only been publicly available for a short time, we expect the use of this unique NSHAP data to appear in the literature more in the future.

5.c. Variable Use versus Variable Influence

Next, to see if the *influence* of the journals in which each variable has appeared would make a difference in frequency counts, we departed from Jackson and colleagues' approach. One method for measuring variable influence among researchers is to consider the quality and reputation of journals and books in which the variables get featured. Some journals and presses are cited more often, more widely read, and more highly regarded than others. To take this into account, we reanalyzed our bibliometric data using journal impact factor (JIF) scores which are based on: 1) the number of articles the journal publishes, and 2) how many times those articles are cited in other works (Garfield 2006:90).

To take into account the relative influence of different peer-reviewed sources, variable counts were weighted by JIF which were retrieved from Web of Science (Journal Citation Reports, 2015) for 52 of the journals and, when available, by the appropriate year of publication.[11] For the journals without official impact scores,[12] unofficial impact factors were retrieved and calculated via Scopus (SCImago, 2015). JIF scores ranged from 0.346 (*Annual Review of Gerontology & Geriatrics*) to 54.420 (*New England Journal of Medicine*), and thus were each assigned a percentile rank, as outlined by Wagner (2009), and scaled to a range of 0.50 to 1.50.[13]

Overall, weighting variables with JIF scores had very little impact on results. While the frequency rankings did change with weighting, the changes were minor and do not significantly affect our overall

[11] When the year of publication was unavailable, the impact factor from the closest available year was used.

[12] *Annual Review of Gerontology & Geriatrics, Journal of Gerontological Social Work, Society & Mental Health, Survey Practice and The Gerontologist*

[13] These scaled factors were used to weight the occurrences of variable use according to the impact of the journal(s) in which they were used. The four book chapters were each assigned an impact factor of 1.000.

results from the unweighted frequencies. For example, depression rose from third most-used variable to second most-used variable. A couple of more notable changes were height and weight which rose to ninth and tenth place in our weighted results from fifty-third place in the unweighted results, and pulse rose from 150th place (unweighted) to forty-eighth place (weighted), reflecting the higher JIF scores for the journals where those variables have been analyzed. Full results of our weighted analysis may be found in Appendix 3.

6. Significance & Implications

This study was conceived primarily to help the NSHAP investigator team make decisions about Wave 3 data collection, and we hope that it also provides an example of self-evaluation to others engaged in similar longitudinal data collection efforts. Our approach is useful for providing insight into how data have been used by researchers.

To some extent, we can assume frequency of variable use provides an indication of their usefulness to the scientific community. With only this decision-making criterion in mind, we might conclude that high-use variables should be repeated, and that never used variables be excluded. However, this criterion alone is insufficient for making decisions about which variables to repeat in a longitudinal study. Other factors must be taken into consideration, such as the fact that measures should not only be considered in isolation. One must capture the relationships between items when running and interpreting analyses. We did not assess how variables were used in the papers (i.e., independent or control variables) but that may also speak to why certain variables have been more popular.

The results of this evaluation of variable use served as one of several sources of data informing the NSHAP team on instrument changes from Wave 2 to Wave 3. Seldom- or never-used variables may be kept, due to the longitudinal design of the NSHAP study. As with all longitudinal studies, variables repeated over time provide opportunities for trend analysis and seldom or never used variables today may become the most popular variables years from now. Repeated variables become more valuable over time due to their longitudinal nature, so including them now will increase their use later, especially as mortality rates become evident over time in the NSHAP sample. Linking mortality rates to different measures, such as olfaction (Pinto 2014), could lead to an increased interest in variables seldom used today. Several unused variables were kept in Wave 3 based on the expectation that their longitudinal value will manifest with additional time points.

On the other hand, cutting or editing frequently-used measures may be justified regardless of their citation counts. However, in the case of NSHAP, no used variables were dropped. And those that were discontinued were highly specific variables that were combined into more general questions in Wave 3, preserving the original intent.

As research interests change, new questions may take precedence. And as new generations continue to enter the NSHAP sample (such as Babyboomers in Wave 3), new, tailored questions may be added in future waves to address the social changes and concerns that future generations will face. Decisions to add, retain, revise, and drop items from longitudinal instruments require an attempt to balance different considerations, including the desire to collect data against respondent burden and budget constraints.

These considerations highlight the tension between preserving longitudinal data and adding new measures to increase innovation and tailor to new cohorts in the sample. As such, the work undertaken here informed NSHAP Wave 3, and has the potential to inform other longitudinal survey efforts in evaluating and understanding how their work is used and disseminated in the academic community. Our hope is that this work will also serve to inform other social life, health and aging scholars in academic and survey research by shedding light on what items their colleagues use in their current research in order to design studies.

NSHAP is intended to be a public dataset, a public good, for researchers interested in studying older adults. Therefore, it is important to take account of what unaffiliated researchers are finding in NSHAP that is useful in their research, and to be sure to preserve those variables. Efforts are ongoing to spread awareness of the variables currently available for use in NSHAP datasets, and their tremendous potential for informing work on health and aging in America. The recent 2014 release of the special issue of The *Journals of Gerontology Series B: Social Sciences* contains over twenty investigator-written articles that provide details on how to scale and use interview, performance, and biological assay variables. This special issue not only advertises the dataset but offers suggestions and support for researchers new to the NSHAP data. NSHAP data handouts are also regularly provided at national conferences such as the American Sociological Association and the Population Association of America. These dissemination efforts attempt to provide the necessary information to unaffiliated researchers who may benefit from using NSHAP data for their research projects.

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Correspondence

Correspondence should be addressed to Kelly Pudelek, NORC at the University of Chicago, 1155 E. 60th Street, 2nd Floor, Chicago, IL 60637. E-mail: pudelek-kelly@norc.org

References

Althaus, S. L. and D. Tewksbury. (2007). "Toward a New Generation of Media Use Measures for the ANES." Report to the Board of Overseers, American National Election Studies. http://www.jour.unr.edu/pcr/1801_2008_winter/media_measures_report.pdf. Accessed December 3, 2015.

Arendt, J. (2010). "Are Article Influence Scores Comparable across Scientific Fields?" *Issues in Science and Technology Librarianship*(60), 4.

Buck, N., and S. McFall. (2012). "*Understanding Society:* design overview." *Longitudinal and Life Course Studies* 3(1): 5-17.

Galesic, M. and M. Bosnjak. (2009.) "Effects of Questionnaire Length on Participation and Indicators of Response Quality in a Web Survey." *Public Opinion Quarterly* 73: 349-360.

Garfield, E. (2006). "The History and Meaning of the Journal Impact Factor." *JAMA*, 295(1): 90-93.

Hayward, M. D., and R. B. Wallace (Guest Eds.). (2014). "The National Social Life, Health, and Aging Project, Wave 2 [Special Issue]." *The Journals of Gerontology, Series B: Psychological Sciences & Social Sciences*, 69B(suppl 2).

Hillygus, D. S. and S. A. Snell. (2015.) "Longitudinal Surveys: Issues and Opportunities." IN *The Oxford Handbook of Polling and Polling Methods*, Ed. Alvarez, M., and L. Atkinson. Oxford University Press. http://sites.duke.edu/ssnell/files/2015/07/hillygus_snell_8-8-15.pdf. Accessed December 3, 2015.

IBM Corp. (2010). IBM SPSS Statistics for Windows, Version 19.0. Armonk, NY: IBM Corp.

Jackson, N. (2011). "Questionnaire Design Issues in Longitudinal and Repeated Cross-Sectional Surveys." Conference Report, Duke Intitiative on Survey Methodology, Duke University.

Jackson, T., M. Balduf, L. Yasaitis, and J. Skinner. (2011). "Which Questions in the Health and Retirement Study are Used by Researchers? Evidence from Academic Journals, 2006-2009." *Forum for Health Economics & Policy*, 14(3): Article 12.

Jaszczak, A., O'Doherty, K., Colicchia, M., Satorius, J., McPhillips, J., Czaplewski, M., Imhof, L., & Smith, S. (2014). "Continuity and Innovation in the Data Collection Protocols of the Second Wave of the National Social Life, Health, and Aging Project." *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences, 69(8)*, S4–S14.

Journal Citation Reports®. (2015). Thomson Reuters.

Kern, D. W., K.E. Wroblewski, L.P. Schumm, J.M. Pinto, and M.K. McClintock. (2014). "Field Survey Measures of Olfaction The Olfactory Function Field Exam (OFFE)." *Field Methods*, 26(4), 421-434.

McGonagle, K. A., R. F. Schoeni, N. Sastry, and V. Freedman. (2012). "The Panel Study of Income Dynamics: overview, recent innovations, and potential for life course research." *Longitudinal and Life Course Studies* 3(2): 268-284.

Milesi, C., K. L. Brown, L. Hawkley, E. Dropkin, and B. L. Schneider. (2014). "Charting the Impact of Federal Spending for Education Research: A Bibliometric Approach." *Educational Researcher,* 43(7): 361-370.

Pinto, Jayant M., Kristen E. Wroblewski, David W. Kern, L. Philip Schumm, and Martha K. McClintock. "Olfactory Dysfunction Predicts 5-Year Mortality in Older Adults." (2014): e107541.

SCImago. (2007). SJR — SCImago Journal & Country Rank. Retrieved June 06, 2015, from http://www.scimagojr.com.

Stopher, P. (2012). Collecting Managing, and Assessing Data Using Sample Surveys. Cambridge, UK: Cambridge University Press.

Wadsworth, M. (2014). "Focussing and funding a birth cohort study over 20 years: the British 1946 national birth cohort study from 16 to 36 years." *Longitudinal and Life Course Studies* 5(1):79-92.

Wagner, A.B. (2009). "Percentile-Based Journal Impact Factors: A Neglected Collection Development Metric." *Issues in Science and Technology Librarianship*, 57.

Wallace, R. B. (Guest Ed.). (2009). "The National Social Life, Health, and Aging Project [Special Issue]." *The Journals of Gerontology Series B: Psychological and Social Sciences,* 64B(suppl. 1).

Watson, N., and M. Wooden. (2012). "The HILDA Survey: a case study in the design and development of a successful household panel study." *Longitudinal and Life Course Studies* 3(3):369-381.

Figures, Tables, & Appendices

Figure 1a. Proportion of Variables Used in the 104 Eligible Publications

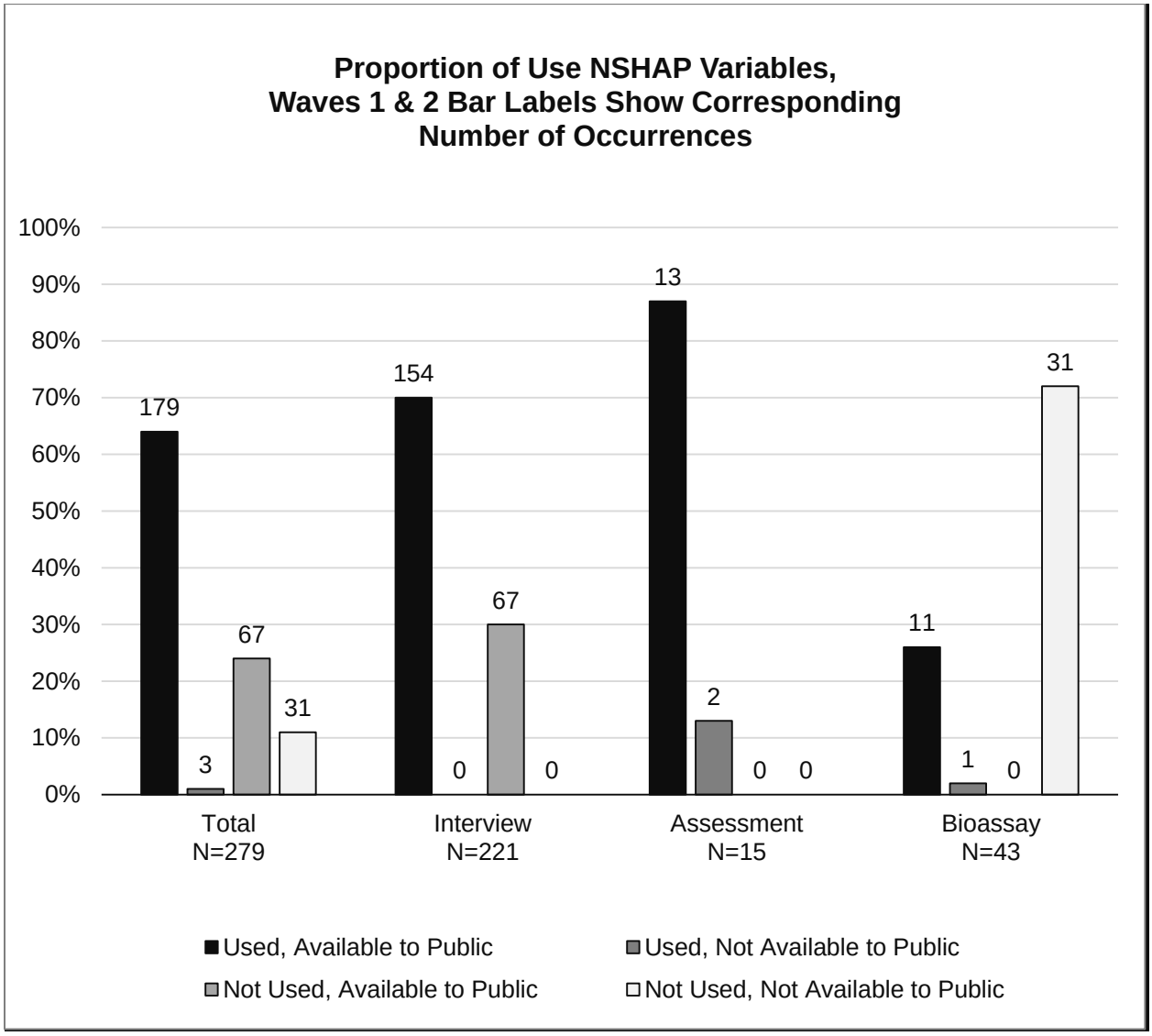
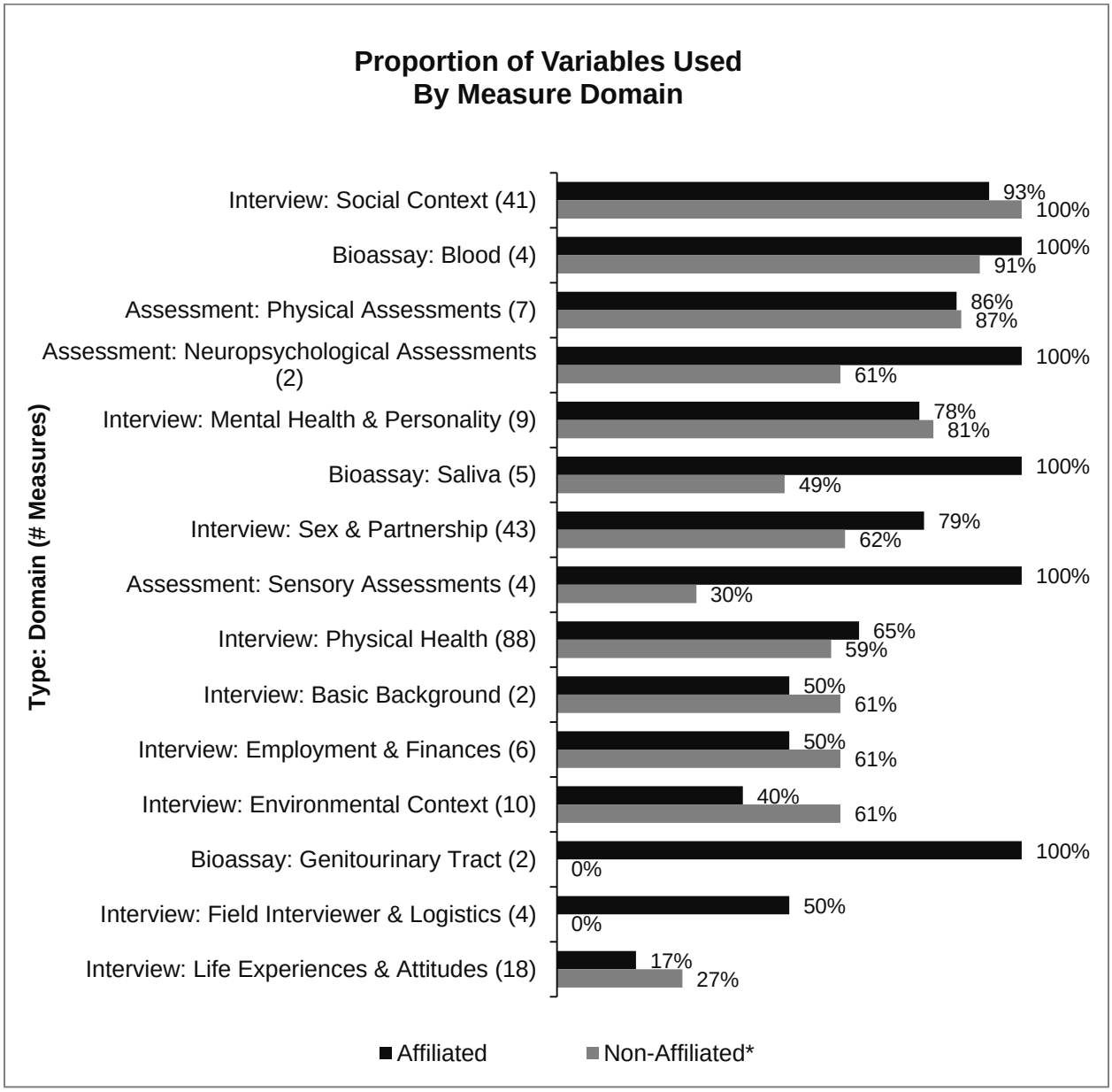
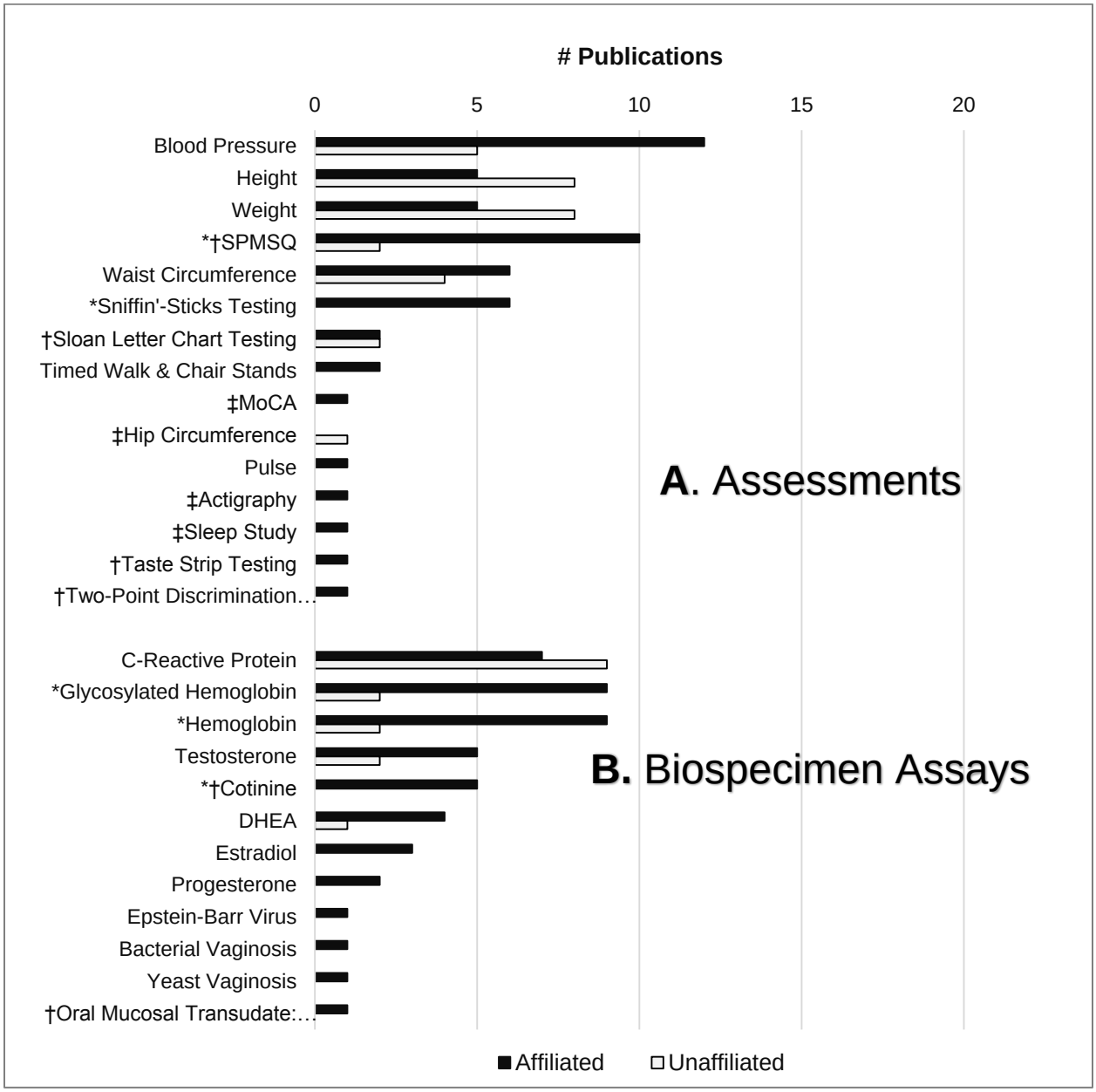


Figure 1b. Proportion of Variables Used in Each Measurement Domain



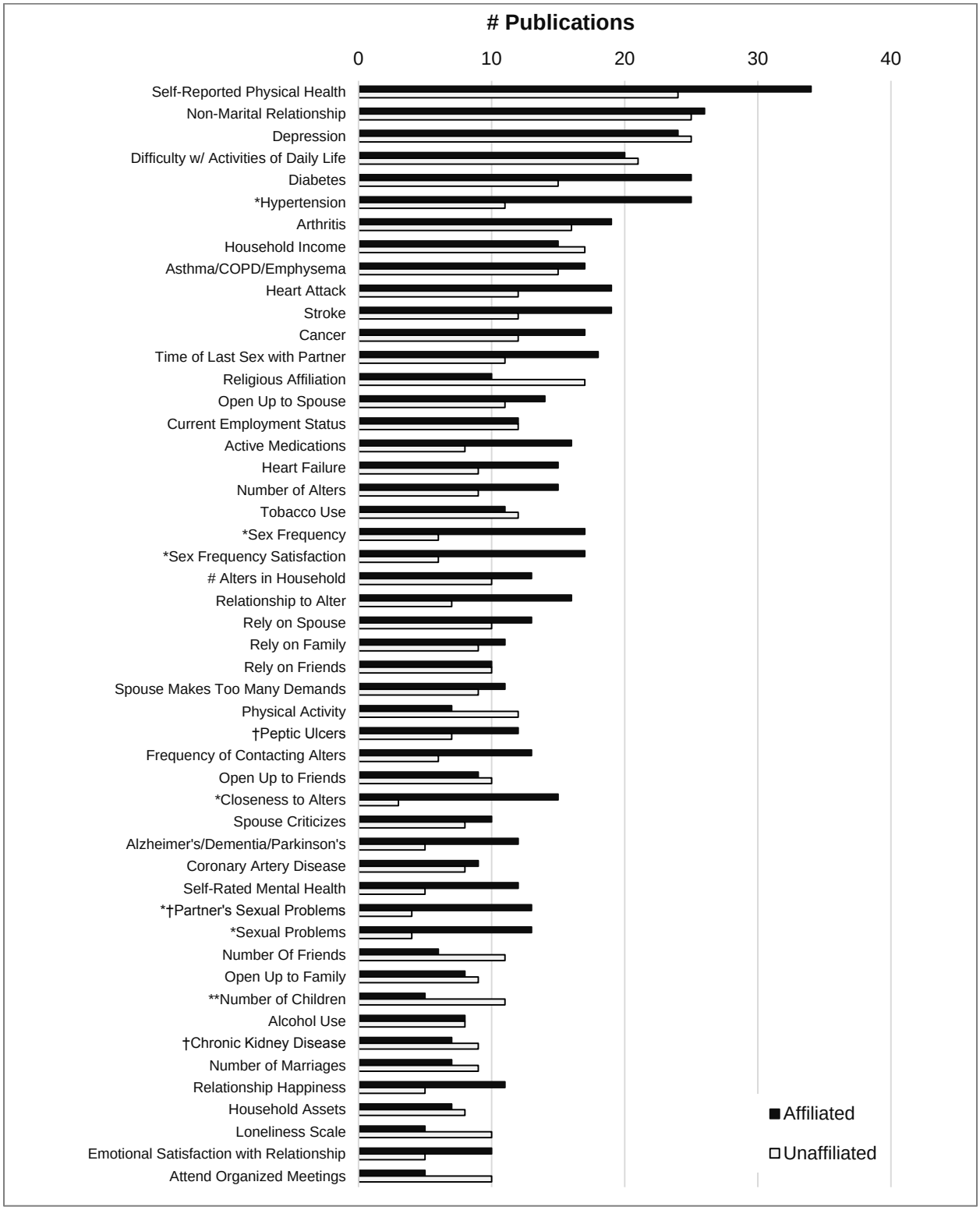
NOTE: Non-Affiliated percentages adjusted by a factor of 1.213 to account for fewer publications compared to Affiliated, and only variables that are available to public (see figure 1) are included

Figure 2. Frequency of Variable Use for (**A**) Assessments and (**B**) Biospecimen Assays



NOTE: Never-used Assessments and Biospecimen Assays not shown
* Variable used significantly more often by NSHAP-affiliated authors than unaffiliated authors (α=0.05)
** Variable used significantly more often by unaffiliated authors than NSHAP-affiliated authors (α=0.05)
† Measured in Wave 1 only
‡ Measured in Wave 2 only

Figure 3. The 50 Most Frequently-Used Interview Variables in the 104 Eligible Publications



* Variable used significantly more often by NSHAP-affiliated authors than unaffiliated authors (α=0.05)
** Variable used significantly more often by unaffiliated authors than NSHAP-affiliated authors (α=0.05)
† Measured in Wave 1 only
‡ Measured in Wave 2 only

Table 1. Summary of Data Collection over Two Waves

Interview	**Basic Background**			**Sex & Partnership**			Interview
	Age	●	●	Marital, Cohab, Sexual History	●	✪	
	Education	●	●	Physical Contact	●	✪	
	Gender	●	●	Pre-Pubertal Experiences	○	●	
	Internet Use	●	●	Sexual Interest & Motivation	●	✪	
	Race/Ethnicity	●	●	**Social Context**			
	Religion	●	●	Caregiving	●	✪	
	Employment & Finances			Children & Grandchildren	●	●	
	Employment	●	●	Elder Abuse	●	○	
	Household Income & Assets	●	✪	Network Change	○	●	
	Partner's Employment	●	○	Social Network Roster	●	●	
	Environmental Context			Social Relationships/Activities	●	✪	
	Residential Characteristics	●	✪	Social Support	●	●	
	Neighborhood Characteristics	●	✪	**Physical Assessments**			Assessments
	Description of Respondent	●	●	Anthropometrics	●	✪	
	Neighborhood Social Context	●	✪	Cardiovascular Function	●	●	
	Field Interviewer & Logistics			Physical Activity	●	✪	
	Field Interviewer Performance	●	●	Sleep Patterns	○	●	
	Survey Logistics	●	✪	**Neuropsychological Assessments**			
	Life Experiences & Attitudes			Abstraction	○	●	
	Attitudes	●	✪	Attention	●	✪	
	Childhood Background	○	●	Executive Function	○	●	
	Life Events	●	✪	Language	○	●	
	Mental Health & Personality			Memory	●	✪	
	Bereavement	●	✪	Naming	○	●	
	Depression	●	●	Orientation	●	✪	
	Happiness & Life Satisfaction	●	✪	Visuoconstruction	○	●	
	Personality	○	●	**Sensory Assessments**			
	Thoughts & Feelings	●	●	Distant Visual Acuity	●	○	
	Physical Health			Gustatory Perception	●	○	
	Access to Healthcare	●	✪	Olfactory Sensitivity/Memory	●	✪	
	Fertility and Menopause	●	✪	Tactile Discrimination	●	○	
	Disability & Functional Health	●	✪	**Blood**			Biospecimen Assays
	Health-Related Behaviors	●	✪	Blood Spots	●	✪	
	Incontinence	●	●	Unclotted Whole Blood	○	●	
	Medications	●	✪	**Saliva**			
	Morbidity	●	✪	Passive Drool	●	✪	
	Pain, Falls & Fractures	●	✪	Salivettes	○	●	
	Self-Reported Health	●	✪	Buccal Swab	●	○	
	Sensory Function	●	✪	**Genitourinary Tract**			
	STDs & HIV/AIDS	●	○	Urine	○	●	
	Surgeries and Procedures	●	✪	Vaginal Swabs	●	✪	

○Not included in data collection
●Included in data collection
✪Enhanced, comparable versions included in data collection

Table 2. Interview Questions Never Used

Domain	Subdomain	Measure	Wave 1	Wave 2
Basic Background	Internet	*Internet Use Frequency*	☐	☐
Employment & Finances	Household Income & Assets	*Moved in ten years*	☐	☐
		Rent/Own Home	☐	☐
	Partner's Employment	*Partner's Employment*	☐	☐
Environmental Context	Residential Characteristics	*Interview Location*	☐	☐
		Others Present During Interview	☐	☐
	Neighborhood Social Context	*Perceived Danger*	☐	☐
		Social Cohesion	☐	☐
		Social Ties	☐	☐
Field Interviewer & Logistics	Field Interviewer Performance	*Difficulty of Case*	☐	☐
		Total Interviews Completed	☐	☐
Life Experiences & Attitudes	Attitudes	*Political Affiliation*	☐	☐
	Childhood Background	*Childhood Health*	☐	☐
		Family Well-Off	☐	☐
		Happy Family Life	☐	☐
		Lived with Both Parents	☐	☐
		Parental Education	☐	☐
		Place of Birth	☐	☐
		Victim of Violence	☐	☐
		Witnessed Violence	☐	☐
	Life Events	*Ever Incarcerated*	☐	☐
		Harassment	☐	☐
		Military Status	☐	☐
		Recent Victim of Crime	☐	☐
Mental Health & Personality	Bereavement	*Anyone Close Died in Past 5 Years*	☐	☐
		Feelings	☐	☐
Physical Health	Access to Healthcare	*Last Visit to Doctor*	☐	☐
		Place for Routine Care	☐	☐
	Fertility & Menopause	*Age at First Birth*	☐	☐
		Number of Children	☐	☐
		Number of Intended Children	☐	☐
	Disability & Functional Health	*Anyone Help with ADL?*	☐	☐
		Assisted Walking Equipment	☐	☐
		Caregiver Relationship	☐	☐
		Medical Decision Maker	☐	☐
	Health-Related Behaviors	*Napping*	☐	☐
	Medications	*Shared Needles in Past Year*	☐	☐
		Stopped Meds Due to Sexual Side Effects	☐	☐
		Use of Sleep Medication	☐	☐
	Morbidity	*Skin Disease*	☐	☐
	Pain, Falls & Fractures	*Broken Bones*	☐	☐
		Pain Past Month	☐	☐
		Told to Limit Exercise/Sex	☐	☐
	Sensory Function	*Self-Rated Smell*	☐	☐
		Self-Rated Touch	☐	☐
	STDs & HIV/AIDS	*Chances of HIV*	☐	☐
		STDs & Flare-Ups in Past Year	☐	☐
		Vaginal Infections	☐	☐
		Why Tested/Not Tested for HIV	☐	☐
	Surgeries & Procedures	*Angioplasty*	☐	☐
		Circumcision	☐	☐
		Colonoscopy	☐	☐
		Mastectomy	☐	☐
		Prostatectomy, ADT	☐	☐
		Tubal Ligation	☐	☐
		Vasectomy	☐	☐

Domain	Subdomain	Measure	Wave 1	Wave 2
Sex & Partnership	Physical Contact	*Appeal Of Physical Contact*	☐	☐
	Pre-Pubertal Sexual Experiences	*Age at Puberty*	☐	☐
		Age at Sexual Debut	☐	☐
		Ever Molested	☐	☐
	Sexual Interest & Motivation	*Condom Usage*	☐	☐
		Effort Made To Look Attractive	☐	☐
		Expected Duration of Relationship	☐	☐
		Find Strangers Attractive	☐	☐
		Frequency Agree To Sex	☐	☐
		Frequency Obligatory Sex	☐	☐
		How Often Going Well W Partner	☐	☐
		Partner's Sexual Pain	☐	☐
		Partner's Sexual Problems Bothersome	☐	☐
		Satisfaction w/ Foreplay Frequency	☐	☐
		Sex Life Lacking Quality	☐	☐
Social Context	Social Relationships & Activities	*Family/Friends Gets on Nerves*	☐	☐
		Feel Threatened by Partner/Family/Friends	☐	☐

Appendix 1. List of Publications Used in Analysis

*unaffiliated authored publications, defined by first or last author's lack of affiliation with NSHAP, the University of Chicago, or NORC at the University of Chicago

Articles

Adams, S. (2012). "Marital Quality and Older Men's and Women's Comfort Discussing Sexual Issues with a Doctor." *Journal of Sex & Marital Therapy* 40(2): 123-138.

Birditt, K. S., N. Newton, and S. Hope. (2012). "Implications of Marital/Partner Relationship Quality and Perceived Stress for Blood Pressure among Older Adults." *J Gerontol B Psychol Sci Soc Sci* 69(2): 188-198.

Boesveldt, S., S.T. Lindau, M.K. McClintock, T. Hummel, and J.N. Lundström. (2011). "Gustatory and Olfactory Dysfunction in Older Adults: A National Probability Study." *Rhinology* 49(3): 324-330.

*Bookwala, J. (2011). "Marital Quality as a Moderator of the Effects of Poor Vision on Quality of Life among Older Adults." *J Gerontol B Psychol Sci Soc Sci* 66(5): 605-616.

*Bookwala, J. and B. Lawson (2011). "Poor Vision, Functioning, and Depressive Symptoms: A Test of the Activity Restriction Model." *The Gerontologist* 51(6): 798-808.

*Brown, M. T., and B.R. Grossman. (2014). "Same-Sex Sexual Relationships in the National Social Life, Health and Aging Project: Making a Case for Data Collection." *Journal of Gerontological Social Work, 57*(2-4), 108-129.

*Brown, S. L. and S. Kawamura (2010). "Relationship Quality among Cohabitors and Marrieds in Older Adulthood." *Soc Sci Res* 39(5): 777-786.

*Brown, S. L. and S. K. Shinohara (2013). "Dating Relationships in Older Adulthood: A National Portrait." *Journal of Marriage and Family* 75(5): 1194-1202.

Cagney, K. A. and E. Y. Cornwell (2010). "Neighborhoods and Health in Later Life: The Intersection of Biology and Community." *Annual Review of Gerontology and Geriatrics* 30(1): 323-348.

Cagney, K. A., Browning, Christopher R. Browning, Iveniuk, James, and Ned English (2014). "The Onset of Depression during the Great Recession: Foreclosure and Older Adult Mental Health." *American Journal of Public Health* 104(3): 498-505.

Chen, J. H., L. Waite, L.M. Kurina, R.A. Thisted, M. McClintock, and D.S. Lauderdale. (2014). "Insomnia Symptoms and Actigraph-Estimated Sleep Characteristics in a Nationally Representative Sample of Older Adults." *Journals of Gerontology, Series A: Biological Sciences and Medical Sciences*.

*Choi, N. G. and D. M. Dinitto (2011). "Heavy/Binge Drinking and Depressive Symptoms in Older Adults: Gender Differences." *Int J Geriatr Psychiatry* 26(8): 860-868.

*Choi, N. G. and J.-H. Ha (2011). "Relationship between Spouse/Partner Support and Depressive Symptoms in Older Adults: Gender Difference." *Aging Ment Health* 15(3): 307-317.

Colicchia, M., M. Czaplewski, and A. Jaszczak, (2012). "Refusal Conversion Incentives and Participation in a Longitudinal Study of Older Adults." *Survey Practice* 5(3): 1-6.

Cornwell, B., E.O. Laumann, and L.P. Schumm. (2008). "The Social Connectedness of Older Adults: A National Profile." *American Sociological Review* 73(2): 185-203.

Cornwell, B. (2009). "Good Health and the Bridging of Structural Holes." *Social Networks* 31(1): 92-103.

Cornwell, B. (2009). "Network Bridging Potential in Later Life: Life-Course Experiences and Social Network Position." *Journal of Aging and Health* 21(1): 129-154.

Cornwell, B. (2011). "Independence through Social Networks: Bridging Potential among Older Women and Men." *J Gerontol B Psychol Sci Soc Sci* 66(6): 782-794.

Cornwell, B. and E. O. Laumann (2011). "Network Position and Sexual Dysfunction: Implications of Partner Betweenness for Men." *American Journal of Sociology* 117(1): 172-208.

Cornwell, B. (2012). "Spousal Network Overlap as a Basis for Spousal Support." *Journal of Marriage and Family* 74(2): 229-238.

Cornwell, B. and E. O. Laumann (2013). "The Health Benefits of Network Growth: New Evidence from a National Survey of Older Adults." *Soc Sci Med*.

Cornwell, B. (2014). "Social Disadvantage and Network Turnover." *J Gerontol B Psychol Sci Soc Sci*.

Cornwell, E. Y. and L. J. Waite (2009). "Social Disconnectedness, Perceived Isolation, and Health among Older Adults." *J Health Soc Be* 50(1): 31-48.

Cornwell, E. Y. and L. J. Waite (2012). "Social Network Resources and Management of Hypertension." *J Health Soc Be* 53(2): 215-231.

Cornwell, E. Y. (2014). "Social Resources and Disordered Living Conditions: Evidence from a National Sample of Community-Residing Older Adults." *Research on Aging* 36(4): 399-430.

Das, A. (2013). "How Does Race Get "Under the Skin"?: Inflammation, Weathering, and Metabolic Problems in Late Life." *Soc Sci Med* 77: 75-83.

Das, A. (2013). "Spousal Loss and Health in Late Life Moving Beyond Emotional Trauma." *Journal of Aging and Health* 25(2): 221-242.

Das, A. and S. Nairn (2013). "Race Differentials in Partnering Patterns among Older US Men: Influence of Androgens or Religious Participation?" *Arch Sex Behav* 42(7): 1119-1130.

Das, A. and S. Nairn (2014). "Conservative Christianity, Partnership, Hormones, and Sex in Late Life." *Arch Sex Behav*: 1-13.

* Erekson, E. A., D.K. Martin, K. Zhu, M. M. Ciarleglio, D.A. Patel,M.K. Guess, and E.S. Ratner, (2012). "Sexual Function in Older Women after Oophorectomy." *Obstetrics and Gynecology* 120(4): 833-842.

Galinsky, A. (2011). "Sexual Touching and Difficulties with Sexual Arousal and Orgasm among U.S. Older Adults." *Arch Sex Behav* 41(4): 875-890.

Galinsky, A. M. and L. J. Waite (2014). "Sexual Activity and Psychological Health as Mediators of the Relationship between Physical Health and Marital Quality." *Journals of Gerontology Series B-Psychological Sciences and Social Sciences* 69(3): 482-492.

*Ganong, K. and E. Larson (2011). "Intimacy and Belonging the Association between Sexual Activity and Depression among Older Adults." *Society and Mental Health* 1(3): 153-172.

*Greenfield, E. A. and D. Russell (2011). "Identifying Living Arrangements That Heighten Risk for Loneliness in Later Life: Evidence from the U.S. National Social Life, Health, and Aging Project." *Journal of Applied Gerontology* 30(4): 524-534.

*Harawa, N. T., M. Leng, J. Kim, and W.E. Cunningham, (2011). "Racial/Ethnic and Gender Differences among Older Adults in Nonmonogamous Partnerships, Time Spent Single, and Human Immunodeficiency Virus Testing." *Sexually Transmitted Diseases* 38(12): 1110-1117.

*Herd, P., A. Karraker, and E. Friedman, (2012). "The Social Patterns of a Biological Risk Factor for Disease: Race, Gender, Socioeconomic Position, and C-reactive Protein." *J Gerontol B Psychol Sci Soc Sci* 67(4): 503-513.

*Hill, T. D., S.M. Rote, C. G. Ellison, and A.M. Burdette, (2014). "Religious Attendance and Biological Functioning: A Multiple Specification Approach." *Journal of Aging and Health* 26: 766-786.

*Hinze, S. W., J. Lin, and T. E. Andersson, T. E, (2012). "Can We Capture the Intersections? Older Black Women, Education, and Health." *Women's Health Issues* 22(1): e91-e98.

*Hirayama, R. and A. J. Walker (2011). "Who Helps Older Adults with Sexual Problems? Confidants Versus Physicians." *J Gerontol B Psychol Sci Soc Sci* 66B(1): 109-118.

Iveniuk, J., L. J. Waite, E. Laumann, M.K. McClintock, and A. D. Tiedt, (2014). "Marital Conflict in Older Couples: Positivity, Personality, and Health." *Journal of Marriage and Family* 76(1): 130-144.

*Jang, Y., N.S. Park, N. S., Kang, S. Y., & Chiriboga, D. A., (2013). "Racial/Ethnic Differences in the Association between Symptoms of Depression and Self-Rated Mental Health among Older Adults." *Community Mental Health Journal* 50(3): 325-330.

Jaszczak, A., Lundeen, K., & Smith, S., (2009). "Using Nonmedically Trained Interviewers to Collect Biomeasures in a National In-Home Survey." *Field Methods* 21(1): 26-48.

*Johnson, T. V. and V. A. Master (2010). "Non-Malignant Drivers of Elevated C-Reactive Protein Levels Differ in Patients with and without a History of Cancer." *Mol Diagn Ther* 14(5): 295-303.

Karraker, A., DeLamater, J., & Schwartz, C. R., (2011). "Sexual Frequency Decline from Midlife to Later Life." *J Gerontol B Psychol Sci Soc Sci* 66B(4): 502-512.

Karraker, A. and J. DeLamater (2013). "Past-Year Sexual Inactivity among Older Married Persons and Their Partners." *Journal of Marriage and Family* 75(1): 142-163.

Karraker, A. (2014). ""Feeling Poor": Perceived Economic Position and Environmental Mastery among Older Americans." *J Aging Health*: 1-21.

*Kim, S. and K. F. Ferraro (2013). "Do Productive Activities Reduce Inflammation in Later Life? Multiple Roles, Frequency of Activities, and C-Reactive Protein." *The Gerontologist*: gnt090.

Kotwal, A. A., et al. (2012). "Remaining Life Expectancy Measurement and PSA Screening of Older Men." *J Geriatr Oncol* 3(3): 196-204.

Kotwal, A. A., et al. (2012). "The Influence of Stress, Depression, and Anxiety on PSA Screening Rates in a Nationally Representative Sample." *Med Care* 50(12): 1037-1044.

Laiteerapong, N., et al. (2012). "Classification of Older Adults who have Diabetes by Comorbid Conditions, United States, 2005-2006." *Prev Chronic Dis* 9: E100.

Laumann, E. O., et al. (2008). "Elder Mistreatment in the United States: Prevalence Estimates from a Nationally Representative Study." *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences* 63(4): s248-s254.

Laumann, E. O. and L. J. Waite (2008). "Sexual Dysfunction among Older Adults: Prevalence and Risk Factors from a Nationally Representative U.S. Probability Sample of Men and Women 57-85 Years of Age." *Journal of Sexual Medicine* 5(10): 2300-2311.

Lindau, S. T., et al. (2008). "Prevalence of High-Risk Human Papillomavirus among Older Women." *Obstetrics and Gynecology* 112(5): 979-989.

Lindau, S. T. and N. Gavrilova (2010). "Sex, Health, and Years of Sexually Active Life Gained Due to Good Health: Evidence from Two U.S. Population Based Cross Sectional Surveys of Ageing." *BMJ* 340(c810): 1-11.

Lindau, S. T., et al. (2010). "Sexuality among Middle-Aged and Older Adults with Diagnosed and Undiagnosed Diabetes: A National, Population-Based Study." *Diabetes Care* 33(10): 2202-2210.

*Litwin, H. (2011). "The Association between Social Network Relationships and Depressive Symptoms among Older Americans: What Matters Most?" *International Psychogeriatrics* 23(6): 930-940.

*Litwin, H. and S. Shiovitz-Ezra (2011). "Social Network Type and Subjective Well-Being in a National Sample of Older Americans." *Gerontologist* 51(3): 379-388.

*Litwin, H. and S. Shiovitz-Ezra (2011). "The Association of Background and Network Type Among Older Americans Is “Who You Are” Related to “Who You Are With”?" *Research on Aging* 33(6): 735-759.

*Litwin, H. (2012). "Physical Activity, Social Network Type, and Depressive Symptoms in Late Life: An Analysis of Data from the National Social Life, Health and Aging Project." *Aging Ment Health* 16(5): 608-616.

Liu, H. and L. Waite (2014). "Bad Marriage, Broken Heart? Age and Gender Differences in the Link between Marital Quality and Cardiovascular Risks among Older Adults." *J Health Soc Be* 55(4): 403-423.

Luo, Y. and L. J. Waite (2011). "Mistreatment and Psychological Well-Being among Older Adults: Exploring the Role of Psychosocial Resources and Deficits." *J Gerontol B Psychol Sci Soc Sci* 66B(2): 217-229.

*McDade, T. W., et al. (2011). "Predictors of C-Reactive Protein in the National Social Life, Health, and Aging Project." *J Gerontol B Psychol Sci Soc Sci* 66B(1): 129-136.

*McFarland, M. J., et al. (2011). "The Role of Religion in Shaping Sexual Frequency and Satisfaction: Evidence from Married and Unmarried Older Adults." *Journal of Sex Research* 48(2-3): 297-308.

*McFarland, M. J., Hayward, M. D., & Brown, D. (2013). I've Got You Under My Skin: Marital Biography and Biological Risk. *Journal of Marriage and Family*, *75*(2), 363-380.

*Miyawaki, C. (2014). "Associations of Social Isolation and Health across Different Racial and Ethnic Groups of Older Americans." *Ageing and Society*: 1-28.

Nowakowski, A. (2014). "Chronic Inflammation and Quality of Life in Older Adults: A Cross-Sectional Study Using Biomarkers to Predict Emotional and Relational Outcomes." *Health and Quality of Life Outcomes* 1(141).

Pham-Kanter, G. (2009). "Social Comparisons and Health: Can Having Richer Friends and Neighbors Make You Sick?" *Social Science and Medicine* 69(3): 335-344.

Pinkhasov, R. M., et al. (2009). "Profiling the Man with Hypogonadism." *Journal of Men's Health* 6(3): 275.

Pinto, J. M., et al. (2013). "Racial Disparities in Olfactory Loss among Older Adults in the United States." *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences* 69A(3): 323-329.

Pinto JM, Wroblewski KE, Kern DW, Schumm LP, McClintock MK (2014) "Olfactory Dysfunction Predicts 5-Year Mortality in Older Adults." *PLoS ONE* 9(10): e107541.

*Pollet, T. V., et al. (2011). "Testosterone Levels and their Associations with Lifetime Number of Opposite Sex Partners and Remarriage in a Large Sample of American Elderly Men and Women." *Hormones and Behavior* 60(1): 72-77.

*Pollet, T. V., et al. (2013). "Testosterone Levels are Negatively Associated with Childlessness in Males, but Positively Related to Offspring Count in Fathers." *PLoS One* 8(6): e60018.

Qato, D. M., et al. (2008). "Use of Prescription and Over-The-Counter Medications and Dietary Supplements among Older Adults in the United States." *The Journal of the American Medical Association* 300(24): 2867-2878.

Qato, D. M., et al. (2010). "Racial and Ethnic Disparities in Cardiovascular Medication Use among Older Adults in the United States." *Pharmacoepidemiology and Drug Safety* 19(8): 834-842.

*Rote, S., et al. (2013). "Religious Attendance and Loneliness in Later Life." *The Gerontologist* 53(1): 39-50.

*Sachs-Ericsson, N., et al. (2014). "The Influence of Prior Rape on the Psychological and Physical Health Functioning of Older Adults." *Aging Ment Health* 18(6): 717-730.

*Sbarra, D. A. (2009). "Marriage Protects Men from Clinically Meaningful Elevations in C-Reactive Protein: Results from the National Social Life, Health, and Aging Project (NSHAP)." *Psychosomatic Medicine* 71(8): 828-835.

*Schafer, M. H. (2011). "Ambiguity, Religion, and Relational Context: Competing Influences on Moral Attitudes?" *Sociological Perspectives* 54(1): 59-82.

*Schafer, M. H. and K. F. Ferraro (2011). "Distal and Variably Proximal Causes: Education, Obesity, and Health." *Soc Sci Med* 73(9): 1340-1348.

*Schafer, M. H., et al. (2011). "Low Socioeconomic Status and Body Mass Index as Risk Factors for Inflammation in Older Adults: Conjoint Influence on C-Reactive Protein?" *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences* 66(6): 667-673.

*Schafer, M. H. (2013). "Discussion Networks, Physician Visits, and Non-Conventional Medicine: Probing the Relational Correlates of Health Care Utilization." *Soc Sci Med* 87: 176-184.

*Schafer, M. H. (2014). "Schema via Structure? Personal Network Density and the Moral Evaluation of Infidelity." *Sociological Forum* 29(1): 120-136.

*Schafer, M. H. and J. Koltai (2014). "Does Embeddedness Protect? Personal Network Density and Vulnerability to Mistreatment among Older American Adults." *J Gerontol B Psychol Sci Soc Sci*.

*Schafer, M. H. and L. Upenieks (2015). "Environmental Disorder and Functional Decline among Older Adults: A Layered Context Approach." *Soc Sci Med* 124: 152-161.

Schumm, L. P., et al. (2007). "A Study of Sexuality and Health among Older Adults in the United States." *New England Journal of Medicine* 357(8): 762-774.

Shiovitz-Ezra, S. and S. A. Leitsch (2010). "The Role of Social Relationships in Predicting Loneliness: The National Social Life, Health, and Aging Project." *Social Work Research* 34(3): 157-167.

*Shiovitz-Ezra, S. and H. Litwin (2012). "Social Network Type and Health-Related Behaviors: Evidence from an American National Survey." *Soc Sci Med* 75(5): 901-904.

Spatz, E. S., et al. (2013). "Sexual Activity and Function among Middle-Aged and Older Men and Women with Hypertension." *J Hypertens* 31(6): 1096-1105.

*Stroope, S., et al. (2014). "Marital Characteristics and the Sexual Relationships of U.S. Older Adults: An Analysis of National Social Life, Health, and Aging Project Data." *Arch Sex Behav*.

*Varughese, J., et al. (2013). "Sexual Function in Older Cancer Survivors." *Gynecologic Oncology* 130(1): e147.

Waite, L. and A. Das (2010). "Families, Social Life, and Well-Being at Older Ages." *Demography* 47(Suppl.): S87-S109.

*Warner, D. F. and S. A. Adams (2012). "Widening the Social Context of Disablement among Married Older Adults: Considering the Role of Nonmarital Relationships for Loneliness." *Soc Sci Res* 41(6): 1529-1545.

*Warner, D. F. and J. Kelley-Moore (2012). "The Social Context of Disablement among Older Adults Does Marital Quality Matter for Loneliness?" *J Health Soc Be* 53(1): 50-66.

*Wexler, D. J., et al. (2012). "Diabetes Differentially Affects Depression and Self-Rated Health by Age in the U.S." *Diabetes Care* 35(7): 1575-1577.

*Yip, S. O., et al. (2013). "The Association between Urinary and Fecal Incontinence and Social Isolation in Older Women." *American Journal of Obstetrics and Gynecology* 208(2): 146.e141-146.e147.

*Youm, Y., et al. (2014). "Social Network Properties and Self-Rated Health in Later Life: Comparisons from the Korean Social Life, Health, and Aging Project and the National Social Life, Health, and Aging Project." *BMC Geriatrics* 14(102).

Wong, J. S., & Waite, L. J. (2015). "Marriage, Social Networks, and Health at Older Ages." *Journal of Population Ageing*, 8(1-2), 7-25.

Kern, D. W., Wroblewski, K. E., Schumm, L. P., Pinto, J. M., & McClintock, M. K. (2014). "Field Survey Measures of Olfaction The Olfactory Function Field Exam (OFFE)." *Field Methods*, 26(4), 421-434.

Kotwal, A. A., Schumm, L.P., Kern, D.W., McClintock, M. K., Waite, L.J., Shega, J. W., Huisingh-Scheetz, M. J., and Dale, W. (2014). "Evaluation of a Brief Survey Instrument for Assessing Subtle Differences in Cognitive Function among Older Adults."

Kern, D, Schumm, LP, Wroblewski, K, Pinto, J, Hummel, T, & McClintock, M. (In press). Olfactory Thresholds of the U.S. Population of Home-Dwelling Older Adults: Development and Validation of a Short, Reliable Measure. *PLOS ONE*.

Book Chapters

Das, A., et al. (2012). Sexual Expression over the Life Course: Results from Three Landmark Surveys. *Sex for Life: From Virginity to Viagra, How Sexuality Changes Throughout Our Lives*. L. M. Carpenter and J. DeLamater. New York, NYU Press.

Kim, J. and L. J. Waite (2013). Family Structure and Financial Well-being: Evidence from the Great Recession. *Lifecycle Events and Their Consequences* K. A. Couch, M. C. Daly and J. M. Zissimopoulos. Stanford, California Stanford University Press.

Lindau, S. T., et al. (2009). Sexuality, Sexual Function, and the Aging Woman. *Hazzard's Geriatric Medicine and Gerontology*. J. G. Ouslander, J. B. Halter, S. Asthana et al. New York, NY, McGraw-Hill.

Waite, L. J., et al. (2014). Social Connectedness at Older Ages and Implications for Health and Well-Being. *Interpersonal Relationships and Health: Social and Clinical Psychological Mechanisms*. C. R. Agnew and S. S. C. New York, Oxford University Press: 202-231.

Special Issue Articles: Excluded from Final Analysis

Cornwell, B., et al. (2009). "Social Networks in the NSHAP Study: Rationale, Measurement, and Preliminary Findings." *J Gerontol B Psychol Sci Soc Sci* 64B(suppl. 1): i47-i55.

Cornwell, E. Y. and L. J. Waite (2009). "Measuring Social Isolation among Older Adults Using Multiple Indicators from the NSHAP Study." *J Gerontol B Psychol Sci Soc Sci* 64B(suppl. 1): i38-i46.

Drum, M. L., et al. (2009). "Assessment of Smoking Behaviors and Alcohol Use in the National Social Life, Health, and Aging Project." *J Gerontol B Psychol Sci Soc Sci* 64B(suppl. 1): i119-i130.

Galinsky, A. M., et al. (2014). "Sexuality and Physical Contact in National Social Life, Health, and Aging Project Wave 2." *J Gerontol B Psychol Sci Soc Sci* 69(S2): S83-S98.

Gavrilova, N. and S. T. Lindau (2009). "Salivary Sex Hormone Measurement in a National, Population-Based Study of Older Adults." *J Gerontol B Psychol Sci Soc Sci* 64B(suppl. 1): i94-i105.

Gregg, F., et al. (2014). "Glycosylated Hemoglobin Testing in the National Social Life, Health, and Aging Project." *J Gerontol B Psychol Sci Soc Sci* 69(Suppl. 2): S198-S204.

Hawkley, L. C., Kocherginsky, M., Wong, J., Kim, J., & Cagney, K. (2014). "Missing Data in Wave 2 of NSHAP: Prevalence, Predictors, and Recommended Treatment." *J Gerontol B Psychol Sci Soc Sci*.

Hoffmann, J. N., et al. (2014). "Prevalence of Bacterial Vaginosis and Candida among Postmenopausal Women in the United States." *J Gerontol B Psychol Sci Soc Sci* 69(S2): S205-S214.

Huisingh-Scheetz M, K. M., Schumm P, Engelman M, McClintock M, Dale W, Magett E, Rush P, Waite L. (2014). "Geriatric Syndromes and Functional Status in the National Social Life, Health, and Aging Project (NSHAP): Rationale, Measurement, and Preliminary Findings." *The Journals of Gerontology Series B: Psychological and Social Sciences* 69(S2): S177-S190.

Iveniuk, J., et al. (2014). "Personality Measures in the National Social Life, Health, and Aging Project." *J Gerontol B Psychol Sci Soc Sci* 69(S2): S117-S124.

Jaszczak, A., et al. (2014). "Continuity and Innovation in the Data Collection Protocols of the Second Wave of the National Social Life, Health, and Aging Project." *J Gerontol B Psychol Sci Soc Sci* 69(S2): S4-S14.

Kim, J. and L. J. Waite (2014). "Relationship Quality and Shared Activity in Marital and Cohabiting Dyads in the National Social Life, Health, and Aging Project, Wave 2." *J Gerontol B Psychol Sci Soc Sci* 69(S2): S64-S74.

Kern, D. W., et al. (2014). "Olfactory Function in Wave 2 of the National Social Life, Health, and Aging Project." *J Gerontol B Psychol Sci Soc Sci* 69(S2): S134-S143.

Kozloski, M. J., et al. (2014). "The Utility and Dynamics of Salivary Sex Hormone Measurements in the National Social Life, Health and Aging Project, Wave 2." *J Gerontol B Psychol Sci Soc Sci* 69(S2): The Journals of Gerontology Series B: Psychological Sciences and Social Sciences.

Lauderdale, D. S., et al. (2014). "Assessment of Sleep in the National Social Life, Health, and Aging Project." *J Gerontol B Psychol Sci Soc Sci* 69(S2): S125-S133.

Lindau, S. T., et al. (2009). "Vaginal Self-Swab Specimen Collection in a Home-Based Survey of Older Women: Methods and Applications." *J Gerontol B Psychol Sci Soc Sci* 64B(suppl. 1): i106-i118.

O'Muircheartaigh, C., et al. (2009). "Statistical Design and Estimation for the National Social Life, Health, and Aging Project." *J Gerontol B Psychol Sci Soc Sci* 64B(suppl. 1): i12-i19.

O'Muircheartaigh, C., et al. (2014). "Sample Design, Sample Augmentation, and Estimation for Wave 2 of the NSHAP." *J Gerontol B Psychol Sci Soc Sci* 69(S2): S15-S26.

Payne, C., et al. (2014). "Using and Interpreting Mental Health Measures in the National Social Life, Health, and Aging Project." *J Gerontol B Psychol Sci Soc Sci* 69(S2): S99-S116.

Pinto, J. M., et al. (2014). "Sensory Function: Insights from Wave 2 of the National Social Life, Health, and Aging Project." *J Gerontol B Psychol Sci Soc Sci* 69(S2): S144-S153.

Qato, D. M., et al. (2009). "Medication Data Collection and Coding in a Home-Based Survey of Older Adults." *J Gerontol B Psychol Sci Soc Sci* 64B(suppl. 1): i86-i93.

Reyes, T. L., et al. (2014). "Social Peptides: Measuring Urinary Oxytocin and Vasopressin in a Home Field Study of Older Adults at Risk for Dehydration." *J Gerontol B Psychol Sci Soc Sci* 69(S2): S229-S237.

Schumm, L. P., et al. (2009). "Assessment of Sensory Function in the National Social Life, Health, and Aging

Shega, J. W., et al. (2014). "Measuring Cognition: The Chicago Cognitive Function Measure in the National Social Life, Health and Aging Project, Wave 2." *J Gerontol B Psychol Sci Soc Sci* 69(S2): S166-S176.

Shega, J. W., et al. (2014). "Pain Measurement in the National Social Life, Health, and Aging Project: Presence, Intensity, and Location." *J Gerontol B Psychol Sci Soc Sci* 69(S2): S191-S197.

Shiovitz-Ezra, S., et al. (2009). "Quality of Life and Psychological Health Indicators in the National Social Life, Health, and Aging Project." J *Gerontol B Psychol Sci Soc Sci* 64B(suppl. 1): i30-i37.

Smith, S., et al. (2009). "Instrument Development, Study Design Implementation, and Survey Conduct for the National Social Life, Health, and Aging Project." *J Gerontol B Psychol Sci Soc Sci* 64B(suppl. 1): i20-i29.

Suzman, R. (2009). "The National Social Life, Health, and Aging Project: An introduction." *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences* 64B(i5): i11.

Vasilopoulos, T., et al. (2014). "Comorbidity and Chronic Conditions in the National Social Life, Health and Aging Project (NSHAP), Wave 2." *J Gerontol B Psychol Sci Soc Sci* 69(S2): S154-S165.

Waite, L. J., et al. (2009). "Sexuality: Measures of Partnerships, Practices, Attitudes, and Problems in the National Social Life, Health, and Aging Study." *J Gerontol B Psychol Sci Soc Sci* 64B(suppl. 1): i56-i66.

Williams, S. R. and T. W. McDade (2009). "The Use of Dried Blood Spot Sampling in the National Social Life, Health, and Aging Project." *J Gerontol B Psychol Sci Soc Sci* 64B(suppl. 1): i131-i136.

Williams, S. R., et al. (2009). "Measures of Chronic Conditions and Diseases Associated With Aging in the National Social Life, Health, and Aging Project." *J Gerontol B Psychol Sci Soc Sci* 64B(suppl. 1): i67-i75.

Cornwell, E. Y. and K. A. Cagney (2014). "Assessment of Neighborhood Context in a Nationally Representative Study." *J Gerontol B Psychol Sci Soc Sci* 69(S2): S51-S63.

O'Doherty, K., Jaszczak, A., Hoffmann, J. N., You, H. M., Kern, D. W., Pagel, K., ... & McClintock, M. K. (2014). Survey Field Methods for Expanded Biospecimen and Biomeasure Collection in NSHAP Wave 2. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *69*(Suppl. 2), S27-S37.

Cornwell, B., Schumm, L. P., Laumann, E. O., Kim, J., & Kim, Y. J. (2014). Assessment of Social Network Change in a National Longitudinal Survey. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *69*(Suppl. 2), S75-S82.

Appendix 2. Complete NSHAP Variable List (Unweighted) Ranked by Frequency of Use in Peer-Reviewed Publications (N=279 Measures)

Rank	Variable Type	Domain	Subdomain	Wave Measured		Measure	Frequency of Use	
				1	2		Affiliated	Non-Affiliated
1	Interview	Physical Health	Self-Reported Health	●	●	*Self-Reported Physical Health*	34	24
2	Interview	Social Context	Social Network Roster	●	●	*Non-Marital Relationship*	26	25
3	Interview	Mental Health & Personality	Depression	●	●	*Depression*	24	25
4	Interview	Physical Health	Disability & Functional Health	●	●	*Difficulty w/ Activities of Daily Life*	20	21
5	Interview	Physical Health	Morbidity	●	●	*Diabetes*	25	15
6	Interview	Physical Health	Morbidity	●	●	*Hypertension*	25	11
7	Interview	Physical Health	Morbidity	●	●	*Arthritis*	19	16
8	Interview	Employment & Finances	Household Income & Assets	●	●	*Household Income*	15	17
8	Interview	Physical Health	Morbidity	●	●	*Asthma/COPD/Emphysema*	17	15
10	Interview	Physical Health	Morbidity	●	●	*Heart Attack*	19	12
10	Interview	Physical Health	Morbidity	●	●	*Stroke*	19	12
12	Interview	Physical Health	Morbidity	●	●	*Cancer*	17	12
12	Interview	Sex & Partnership	Marital, Cohab & Sexual History	●	●	*Time of Last Sex with Partner*	18	11
14	Interview	Basic Background	Religion	●	●	*Religious Affiliation*	10	17
15	Interview	Social Context	Social Support	●	●	*Open Up to Spouse*	14	11
16	Interview	Employment & Finances	Employment	●	●	*Current Employment Status*	12	12
16	Interview	Physical Health	Medications	●	●	*Active Medications*	16	8
16	Interview	Physical Health	Morbidity	●	●	*Heart Failure*	15	9
16	Interview	Social Context	Social Network Roster	●	●	*Number of Alters*	15	9
20	Interview	Physical Health	Health-Related Behaviors	●	●	*Tobacco Use*	11	12
20	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Sex Frequency*	17	6
20	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Sex Frequency Satisfaction*	17	6
20	Interview	Social Context	Social Network Roster	●	●	*# Alters in Household*	13	10
20	Interview	Social Context	Social Network Roster	●	●	*Relationship to Alter*	16	7
20	Interview	Social Context	Social Support	●	●	*Rely on Spouse*	13	10
26	Interview	Social Context	Social Support	●	●	*Rely on Family*	11	9
26	Interview	Social Context	Social Support	●	●	*Rely on Friends*	10	10
26	Interview	Social Context	Social Support	●	●	*Spouse Makes Too Many Demands*	11	9
29	Interview	Physical Health	Health-Related Behaviors	●	●	*Physical Activity*	7	12
29	Interview	Physical Health	Morbidity	●	○	*Peptic Ulcers*	12	7
29	Interview	Social Context	Social Network Roster	●	●	*Frequency of Contacting Alters*	13	6
29	Interview	Social Context	Social Support	●	●	*Open Up to Friends*	9	10
33	Interview	Social Context	Social Network Roster	●	●	*Closeness to Alters*	15	3
33	Interview	Social Context	Social Support	●	●	*Spouse Criticizes*	10	8

Rank	Variable Type	Domain	Subdomain	Wave Measured		Measure	Frequency of Use	
				1	2		Affiliated	Non-Affiliated
35	Assessment	Physical Assessments	Cardiovascular Function	●	●	*Blood Pressure*	12	5
35	Interview	Physical Health	Morbidity	●	●	*Alzheimer's/Dementia/Parkinson's*	12	5
35	Interview	Physical Health	Morbidity	●	●	*Coronary Artery Disease*	9	8
35	Interview	Physical Health	Self-Reported Health	●	●	*Self-Rated Mental Health*	12	5
35	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Partner's Sexual Problems*	13	4
35	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Sexual Problems*	13	4
35	Interview	Social Context	Social Support	●	●	*Number Of Friends*	6	11
35	Interview	Social Context	Social Support	●	●	*Open Up to Family*	8	9
43	Bioassay	Blood	Dried Blood Spots	●	●	*C-Reactive Protein*	7	9
43	Interview	Physical Health	Fertility & Menopause	●	●	*Number of Children*	5	11
43	Interview	Physical Health	Health-Related Behaviors	●	●	*Alcohol Use*	8	8
43	Interview	Physical Health	Morbidity	●	○	*Chronic Kidney Disease*	7	9
43	Interview	Sex & Partnership	Marital, Cohab & Sexual History	●	●	*Number of Marriages*	7	9
43	Interview	Social Context	Social Support	●	●	*Relationship Happiness*	11	5
49	Interview	Employment & Finances	Household Income & Assets	●	●	*Household Assets*	7	8
49	Interview	Mental Health & Personality	Thoughts & Feelings	●	●	*Loneliness Scale*	5	10
49	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Emotional Satisfaction with Relationship*	10	5
49	Interview	Social Context	Social Relationships & Activities	●	●	*Attend Organized Meetings*	5	10
53	Assessment	Physical Assessments	Anthropometrics	●	●	*Height*	5	8
53	Assessment	Physical Assessments	Anthropometrics	●	●	*Weight*	5	8
53	Interview	Social Context	Social Network Roster	●	●	*Network Density*	10	3
53	Interview	Social Context	Social Support	●	●	*Spend Free Time W/ Spouse*	8	5
57	Assessment	Neuropsychological Assessments	Cognitive Function	●	○	*SPMSQ*	10	2
57	Interview	Mental Health & Personality	Thoughts & Feelings	●	●	*HADS-A Anxiety Scale*	7	5
57	Interview	Physical Health	Morbidity	●	●	*Skin Cancer*	8	4
57	Interview	Social Context	Social Support	●	●	*Number Of Family Members Feel Close To*	4	8
61	Bioassay	Blood	Dried Blood Spots	●	●	*Glycosylated Hemoglobin*	9	2
61	Bioassay	Blood	Dried Blood Spots	●	●	*Hemoglobin*	9	2
61	Interview	Sex & Partnership	Marital, Cohab & Sexual History	●	●	*Lifetime Number Of Sexual Partners*	5	6
61	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Frequency Of Masturbation*	9	2
65	Assessment	Physical Assessments	Anthropometrics	●	●	*Waist Circumference*	6	4
65	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Physical Pleasure in Relationship*	6	4
65	Interview	Social Context	Social Network Roster	●	●	*Talk to Alter about Health Problems*	9	1
68	Interview	Mental Health & Personality	Thoughts & Feelings	●	●	*Perceived Stress Scale*	7	2
68	Interview	Physical Health	Sensory Function	●	●	*Self-Rated Eyesight*	5	4
68	Interview	Social Context	Social Relationships & Activities	●	●	*Frequency Of Volunteering*	5	4

Rank	Variable Type	Domain	Subdomain	Wave Measured		Measure	Frequency of Use	
				1	2		Affiliated	Non-Affiliated
68	Interview	Social Context	Social Relationships & Activities	●	○	*Socializing With Neighbors*	4	5
72	Interview	Mental Health & Personality	Happiness & Life Satisfaction	●	●	*Self-Rated Happiness*	4	4
72	Interview	Physical Health	Access to Healthcare	●	●	*Insurance Status*	6	2
72	Interview	Physical Health	Morbidity	●	○	*Thyroid Disease Diagnosed*	4	4
72	Interview	Social Context	Social Support	●	●	*Family Criticizes*	4	4
72	Interview	Social Context	Social Support	●	●	*Friends Criticize*	4	4
77	Bioassay	Saliva	Passive Drool	●	●	*Testosterone*	5	2
77	Interview	Physical Health	Morbidity	●	○	*Cirrhosis Diagnosed*	3	4
77	Interview	Physical Health	Morbidity	●	○	*Enlarged Prostate Diagnosed*	5	2
77	Interview	Sex & Partnership	Marital, Cohab & Sexual History	●	●	*Number Of Sex Partners In Past 5 Years*	3	4
77	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Partner's Physical Health*	4	3
77	Interview	Social Context	Social Relationships & Activities	●	●	*Frequency Of Socializing*	4	3
77	Interview	Social Context	Social Support	●	●	*Family Makes Too Many Demands*	3	4
77	Interview	Social Context	Social Support	●	●	*Friends Make Too Many Demands*	3	4
85	Assessment	Sensory Assessments	Olfactory Sensitivity & Memory	●	●	*Sniffin'-Sticks Testing*	6	0
85	Interview	Life Experiences & Attitudes	Attitudes	●	○	*Attitudes: Sex*	2	4
85	Interview	Mental Health & Personality	Happiness & Life Satisfaction	●	○	*Self-Rated Self-Esteem*	5	1
85	Interview	Physical Health	Incontinence	●	●	*Urinary Incontinence*	4	2
85	Interview	Physical Health	STDs & HIV/AIDS	●	○	*Ever Had STD*	3	3
90	Bioassay	Saliva	Passive Drool	●	○	*Cotinine*	5	0
90	Bioassay	Saliva	Passive Drool	●	●	*DHEA*	4	1
90	Interview	Physical Health	Health-Related Behaviors	●	○	*Cage Alcohol Questions*	3	2
90	Interview	Physical Health	Morbidity	○	●	*Heart Disease Diagnosed*	5	0
90	Interview	Physical Health	Sensory Function	●	●	*Hearing Loss*	3	2
90	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Frequency Sexual Ideation*	4	1
90	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Importance Of Sex*	3	2
90	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Reasons For Not Having Sex*	4	1
90	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Sexual Problems Bothersome*	4	1
90	Interview	Social Context	Social Network Roster	●	●	*Alter Gender*	3	2
90	Interview	Social Context	Social Relationships & Activities	○	●	*Partner Get On Nerves*	5	0
101	Assessment	Sensory Assessments	Distant Visual Acuity	●	○	*Sloan Letter Chart Testing*	2	2
101	Interview	Environmental Context	Description of Respondent	●	●	*Observed Characteristics of Respondent*	2	2
101	Interview	Environmental Context	Neighborhood Characteristics	●	●	*Observed Characteristics of Building*	3	1
101	Interview	Life Experiences & Attitudes	Attitudes	●	○	*Attitudes: Infidelity*	0	4
101	Interview	Physical Health	Access to Healthcare	●	●	*Place To Go When Sick*	3	1
101	Interview	Physical Health	Health-Related Behaviors	●	●	*Hours Sleep*	3	1
101	Interview	Physical Health	Health-Related Behaviors	●	○	*Other Tobacco Used*	1	3
101	Interview	Physical Health	Incontinence	●	●	*Stool Incontinence*	3	1
101	Interview	Physical Health	Incontinence	●	●	*Urinary Problems*	4	0

Rank	Variable Type	Domain	Subdomain	Wave Measured		Measure	Frequency of Use	
				1	2		Affiliated	Non-Affiliated
101	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Arousal*	3	1
101	Interview	Social Context	Elder Abuse	●	○	*Anyone who Hits R*	3	1
101	Interview	Social Context	Elder Abuse	●	○	*Anyone who Insults R*	3	1
101	Interview	Social Context	Elder Abuse	●	○	*Anyone who Takes R's Money*	3	1
114	Bioassay	Saliva	Passive Drool	●	●	*Estradiol*	3	0
114	Interview	Environmental Context	Residential Characteristics	●	●	*Observed Characteristics of Interview Room*	1	2
114	Interview	Field Interviewer & Logistics	Survey Logistics	●	●	*Survey Structure*	3	0
114	Interview	Life Experiences & Attitudes	Attitudes	●	●	*Religious Beliefs*	0	3
114	Interview	Physical Health	Medications	●	○	*Alternative Medicines*	1	2
114	Interview	Physical Health	Morbidity	●	●	*Discuss Sex With Doctor*	3	0
114	Interview	Physical Health	Morbidity	○	●	*Hip Fracture Diagnosed*	3	0
114	Interview	Physical Health	Morbidity	○	●	*Osteoporosis Diagnosed*	3	0
114	Interview	Physical Health	Self-Reported Health	○	●	*Illness Today*	2	1
114	Interview	Physical Health	Surgeries & Procedures	●	●	*Oophorectomy*	2	1
114	Interview	Sex & Partnership	Marital, Cohab & Sexual History	●	●	*Gender Of Partner*	3	0
114	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Partner's Infidelity*	2	1
114	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Partner's Mental Health*	3	0
114	Interview	Social Context	Children & Grandchildren	●	●	*Number Of Grandchildren*	2	1
114	Interview	Social Context	Children & Grandchildren	●	●	*Number Of Grandchildren*	2	1
114	Interview	Social Context	Network Change	●	●	*Alter Age*	2	1
130	Assessment	Physical Assessments	Physical Activity & Sleep Patterns	●	●	*Timed Walk & Chair Stands*	2	0
130	Bioassay	Saliva	Passive Drool	●	●	*Progesterone*	2	0
130	Interview	Environmental Context	Neighborhood Characteristics	●	●	*Observed Characteristics of Neighborhood*	1	1
130	Interview	Life Experiences & Attitudes	Life Events	●	○	*Forced To Have Sex*	1	1
130	Interview	Mental Health & Personality	Personality	○	●	*Personality Questions*	2	0
130	Interview	Physical Health	Health-Related Behaviors	●	●	*Feel Rested In Morning*	1	1
130	Interview	Physical Health	Medications	●	○	*Hormone Therapy: Female*	1	1
130	Interview	Physical Health	Pain, Falls & Fractures	●	●	*Fallen In Past 12 Mos.*	1	1
130	Interview	Physical Health	Pain, Falls & Fractures	●	○	*Head Injury*	2	0
130	Interview	Physical Health	Pain, Falls & Fractures	●	●	*Nose Surgery*	2	0
130	Interview	Physical Health	Pain, Falls & Fractures	●	○	*Pain While Walking*	0	2
130	Interview	Physical Health	STDs & HIV/AIDS	●	○	*Tested for HIV*	1	1
130	Interview	Physical Health	Surgeries & Procedures	●	●	*Hysterectomy*	1	1
130	Interview	Sex & Partnership	Marital, Cohab & Sexual History	●	●	*Number Of Cohabitating Partners*	1	1
130	Interview	Sex & Partnership	Marital, Cohab & Sexual History	●	●	*Timing of First Sex*	1	1
130	Interview	Sex & Partnership	Physical Contact	●	●	*Physical Contact*	2	0
130	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Foreplay Frequency*	1	1
130	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Frequency Sleeping In Same Bed*	1	1
130	Interview	Social Context	Elder Abuse	●	○	*Anyone Too Controlling*	1	1

Rank	Variable Type	Domain	Subdomain	Wave Measured		Measure	Frequency of Use	
				1	2		Affiliated	Non-Affiliated
130	Interview	Social Context	Network Change	○	●	*Alter Alive/No Longer in Touch*	2	0
150	Assessment	Neuropsychological Assessments	Cognitive Function	○	●	*MoCA*	1	0
150	Assessment	Physical Assessments	Anthropometrics	○	●	*Hip Circumference*	0	1
150	Assessment	Physical Assessments	Cardiovascular Function	●	●	*Pulse*	1	0
150	Assessment	Physical Assessments	Physical Activity	○	◆	*Actigraphy*	1	0
150	Assessment	Physical Assessments	Sleep Patterns	○	◆	*Sleep Study*	1	0
150	Assessment	Sensory Assessments	Gustatory Perception	●	○	*Taste Strip Testing*	1	0
150	Assessment	Sensory Assessments	Tactile Discrimination	●	○	*Two-Point Discrimination Testing*	1	0
150	Bioassay	Blood	Dried Blood Spots	●	●	*Epstein-Barr Virus*	1	0
150	Bioassay	Genitourinary Tract	Vaginal Swab	●	●	*Bacterial Vaginosis*	1	0
150	Bioassay	Genitourinary Tract	Vaginal Swab	●	●	*Yeast Vaginosis*	1	0
150	Bioassay	Saliva	Buccal Swab	◆	○	*Oral Mucosal Transudate: OraSure®*	1	0
150	Interview	Environmental Context	Neighborhood Social Context	●	●	*Time Lived In Neighborhood*	0	1
150	Interview	Field Interviewer & Logistics	Survey Logistics	○	●	*Wave 2 Disposition*	1	0
150	Interview	Life Experiences & Attitudes	Life Events	●	○	*Paid For Sex*	1	0
150	Interview	Physical Health	Fertility & Menopause	●	●	*Age At Last Period*	1	0
150	Interview	Physical Health	Fertility & Menopause	●	●	*Gravidity*	1	0
150	Interview	Physical Health	Medications	●	○	*Medicine: Improve Sex*	1	0
150	Interview	Physical Health	Pain, Falls & Fractures	○	●	*Pain Past Month*	1	0
150	Interview	Physical Health	Sensory Function	●	○	*Self-Rated Taste*	1	0
150	Interview	Physical Health	Surgeries & Procedures	●	●	*Pap Smear/Dysplasia of Cervix*	1	0
150	Interview	Physical Health	Surgeries & Procedures	●	●	*Pelvic Exam*	1	0
150	Interview	Physical Health	Surgeries & Procedures	●	●	*PSA/DRE/Prostate Cancer*	1	0
150	Interview	Sex & Partnership	Marital, Cohab & Sexual History	●	●	*Expect to Have Sex Again*	1	0
150	Interview	Sex & Partnership	Physical Contact	●	○	*Appeal Of Physical Contact*	1	0
150	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Effort Made To Look Attractive*	1	0
150	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Find Strangers Attractive*	1	0
150	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Frequency Agree To Sex*	1	0
150	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*How Often Going Well W Partner*	1	0
150	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Pain During Sex*	1	0
150	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Partner's Education*	1	0
150	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Sex Life Lacking Quality*	1	0
150	Interview	Social Context	Caregiving	●	●	*Caregiving*	0	1
182	Bioassay	Blood	Dried Blood Spots	○	◆	*Cholesterol*	0	0

Rank	Variable Type	Domain	Subdomain	Wave Measured		Measure	Frequency of Use	
				1	2		Affiliated	Non-Affiliated
182	Bioassay	Blood	Dried Blood Spots	○	•	*HDL*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*Adiponectin*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*Apolipoprotein B*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*Fibrinogen*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*GM-CSF*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*IFN-γ*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*IL-10*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*IL-12*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*IL-13*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*IL-1rα*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*IL-1β*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*IL-2*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*IL-3*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*IL-4*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*IL-5*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*IL-6*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*MCP-1*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*sIL-2ra*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*TFG-α*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*TNF-α*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*TNF-β*	0	0
182	Bioassay	Blood	Unclotted Whole Blood	○	•	*VEGF*	0	0
182	Bioassay	Genitourinary Tract	Urine	○	•	*Creatinine*	0	0
182	Bioassay	Genitourinary Tract	Urine	○	•	*NGAL*	0	0
182	Bioassay	Genitourinary Tract	Urine	○	•	*Oxytocin*	0	0

Rank	Variable Type	Domain	Subdomain	Wave Measured		Measure	Frequency of Use	
				1	2		Affiliated	Non-Affiliated
182	Bioassay	Genitourinary Tract	Urine	○	◆	*Vasopressin*	0	0
182	Bioassay	Genitourinary Tract	Vaginal Swab	◆	○	*HPV*	0	0
182	Bioassay	Genitourinary Tract	Vaginal Swab	◆	◆	*Vaginal Cytology*	0	0
182	Bioassay	Saliva	Passive Drool	○	◆	*Genotype*	0	0
182	Bioassay	Saliva	Salivettes	○	◆	*Cortisol*	0	0
182	Interview	Basic Background	Internet	○	●	*Internet Use Frequency*	0	0
182	Interview	Employment & Finances	Household Income & Assets	○	●	*Moved in ten years*	0	0
182	Interview	Employment & Finances	Household Income & Assets	○	●	*Rent/Own Home*	0	0
182	Interview	Employment & Finances	Partner's Employment	○	●	*Partner's Employment*	0	0
182	Interview	Environmental Context	Neighborhood Social Context	○	●	*Perceived Danger*	0	0
182	Interview	Environmental Context	Neighborhood Social Context	○	●	*Social Cohesion*	0	0
182	Interview	Environmental Context	Neighborhood Social Context	○	●	*Social Ties*	0	0
182	Interview	Environmental Context	Residential Characteristics	○	●	*Interview Location*	0	0
182	Interview	Environmental Context	Residential Characteristics	○	●	*Others Present During Interview*	0	0
182	Interview	Field Interviewer & Logistics	Field Interviewer Performance	○	●	*Difficulty of Case*	0	0
182	Interview	Field Interviewer & Logistics	Field Interviewer Performance	○	●	*Total Interviews Completed*	0	0
182	Interview	Life Experiences & Attitudes	Attitudes	○	●	*Political Affiliation*	0	0
182	Interview	Life Experiences & Attitudes	Childhood Background	○	●	*Childhood Health*	0	0
182	Interview	Life Experiences & Attitudes	Childhood Background	○	●	*Family Well-Off*	0	0
182	Interview	Life Experiences & Attitudes	Childhood Background	○	●	*Happy Family Life*	0	0
182	Interview	Life Experiences & Attitudes	Childhood Background	○	●	*Lived with Both Parents*	0	0
182	Interview	Life Experiences & Attitudes	Childhood Background	○	●	*Parental Education*	0	0
182	Interview	Life Experiences & Attitudes	Childhood Background	○	●	*Place of Birth*	0	0
182	Interview	Life Experiences & Attitudes	Childhood Background	○	●	*Victim of Violence*	0	0
182	Interview	Life Experiences & Attitudes	Childhood Background	○	●	*Witnessed Violence*	0	0
182	Interview	Life Experiences & Attitudes	Life Events	●	●	*Ever Incarcerated*	0	0
182	Interview	Life Experiences & Attitudes	Life Events	●	●	*Harassment*	0	0
182	Interview	Life Experiences & Attitudes	Life Events	●	●	*Military Status*	0	0
182	Interview	Life Experiences & Attitudes	Life Events	●	●	*Recent Victim of Crime*	0	0
182	Interview	Mental Health & Personality	Bereavement	●	●	*Anyone Close Died in Past 5 Years*	0	0
182	Interview	Mental Health & Personality	Bereavement	●	●	*Feelings*	0	0
182	Interview	Physical Health	Access to Healthcare	●	●	*Last Visit to Doctor*	0	0
182	Interview	Physical Health	Access to Healthcare	●	●	*Place for Routine Care*	0	0
182	Interview	Physical Health	Access to Healthcare	●	●	*Visits To Doctor*	0	0
182	Interview	Physical Health	Disability & Functional Health	●	●	*Anyone Help with ADL?*	0	0
182	Interview	Physical Health	Disability & Functional Health	●	●	*Assisted Walking Equipment*	0	0
182	Interview	Physical Health	Disability & Functional Health	●	●	*Caregiver Relationship*	0	0
182	Interview	Physical Health	Disability & Functional Health	●	●	*Medical Decision Maker*	0	0

Rank	Variable Type	Domain	Subdomain	Wave Measured		Measure	Frequency of Use	
				1	2		Affiliated	Non-Affiliated
182	Interview	Physical Health	Fertility & Menopause	●	●	*Age at First Birth*	0	0
182	Interview	Physical Health	Fertility & Menopause	●	●	*Number of Intended Children*	0	0
182	Interview	Physical Health	Health-Related Behaviors	○	●	*Napping*	0	0
182	Interview	Physical Health	Medications	○	●	*Shared Needles in Past Year*	0	0
182	Interview	Physical Health	Medications	○	●	*Stopped Meds Due to Sexual Side Effects*	0	0
182	Interview	Physical Health	Medications	○	●	*Use of Sleep Medication*	0	0
182	Interview	Physical Health	Morbidity	○	●	*Skin Disease*	0	0
182	Interview	Physical Health	Pain, Falls & Fractures	○	●	*Broken Bones*	0	0
182	Interview	Physical Health	Pain, Falls & Fractures	○	●	*Told to Limit Exercise/Sex*	0	0
182	Interview	Physical Health	Self-Reported Health	●	○	*Health Status Relative To Peers*	0	0
182	Interview	Physical Health	Sensory Function	○	●	*Self-Rated Smell*	0	0
182	Interview	Physical Health	Sensory Function	○	●	*Self-Rated Touch*	0	0
182	Interview	Physical Health	STDs & HIV/AIDS	●	●	*Chances of HIV*	0	0
182	Interview	Physical Health	STDs & HIV/AIDS	●	●	*STDs & Flare-Ups in Past Year*	0	0
182	Interview	Physical Health	STDs & HIV/AIDS	●	●	*Vaginal Infections*	0	0
182	Interview	Physical Health	STDs & HIV/AIDS	●	●	*Why Tested/Not Tested for HIV*	0	0
182	Interview	Physical Health	Surgeries & Procedures	○	●	*Angioplasty*	0	0
182	Interview	Physical Health	Surgeries & Procedures	○	●	*Circumcision*	0	0
182	Interview	Physical Health	Surgeries & Procedures	○	●	*Colonoscopy*	0	0
182	Interview	Physical Health	Surgeries & Procedures	○	●	*Mastectomy*	0	0
182	Interview	Physical Health	Surgeries & Procedures	○	●	*Prostatectomy, ADT*	0	0
182	Interview	Physical Health	Surgeries & Procedures	●	●	*Tubal Ligation*	0	0
182	Interview	Physical Health	Surgeries & Procedures	○	●	*Vasectomy*	0	0
182	Interview	Sex & Partnership	Pre-Pubertal Sexual Experiences	●	○	*Age at Puberty*	0	0
182	Interview	Sex & Partnership	Pre-Pubertal Sexual Experiences	●	○	*Age at Sexual Debut*	0	0
182	Interview	Sex & Partnership	Pre-Pubertal Sexual Experiences	●	○	*Ever Molested*	0	0
182	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Condom Usage*	0	0
182	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Expected Duration of Relationship*	0	0
182	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Frequency Obligatory Sex*	0	0
182	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Partner's Sexual Pain*	0	0
182	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Partner's Sexual Problems Bothersome*	0	0
182	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Satisfaction w/ Foreplay Frequency*	0	0
182	Interview	Social Context	Social Relationships & Activities	●	○	*Family/Friends Gets on Nerves*	0	0
182	Interview	Social Context	Social Relationships & Activities	●	○	*Feel Threatened by Partner/Family/Friends*	0	0

□ Not included in data collection

● Included in data collection

◆ Included in data collection but not present in public data release

Appendix 3. Complete NSHAP Variable List (Weighted by JIF Score) Ranked by Frequency of Use in Peer-Reviewed Publications (N=279 Measures)

Rank	Variable Type	Domain	Subdomain	Wave Measured		Measure	Frequency of Use	
				1	2		Affiliated	Non-Affiliated
1	Interview	Physical Health	Self-Reported Health	●	●	*Self-Reported Physical Health*	30	22
2	Interview	Mental Health & Personality	Depression	●	●	*Depression*	26	23
3	Interview	Social Context	Social Network Roster	●	●	*Non-Marital Relationship*	26	21
4	Interview	Physical Health	Disability & Functional Health	●	●	*Difficulty w/ Activities of Daily Life*	20	17
5	Interview	Physical Health	Morbidity	●	●	*Diabetes*	23	14
6	Interview	Physical Health	Morbidity	●	●	*Arthritis*	20	15
7	Interview	Physical Health	Morbidity	●	●	*Asthma/COPD/Emphysema*	18	14
8	Interview	Employment & Finances	Household Income & Assets	●	●	*Household Income*	15	15
9	Assessment	Physical Assessments	Anthropometrics	●	●	*Height*	16	14
10	Assessment	Physical Assessments	Anthropometrics	●	●	*Weight*	16	14
11	Interview	Physical Health	Morbidity	●	●	*Heart Attack*	18	12
12	Interview	Physical Health	Morbidity	●	●	*Cancer*	17	12
13	Interview	Sex & Partnership	Marital, Cohab & Sexual History	●	●	*Time of Last Sex with Partner*	18	11
14	Interview	Physical Health	Morbidity	●	●	*Stroke*	18	11
15	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Sex Frequency*	19	10
16	Interview	Physical Health	Morbidity	●	●	*Hypertension*	20	9
17	Interview	Basic Background	Religion	●	●	*Religious Affiliation*	12	14
18	Interview	Physical Health	Health-Related Behaviors	●	●	*Tobacco Use*	13	11
19	Interview	Physical Health	Morbidity	●	●	*Heart Failure*	14	9
20	Interview	Physical Health	Medications	●	●	*Active Medications*	15	8
21	Interview	Social Context	Social Support	●	●	*Open Up to Spouse*	12	10
22	Interview	Physical Health	Health-Related Behaviors	●	●	*Physical Activity*	10	11
23	Interview	Employment & Finances	Employment	●	●	*Current Employment Status*	11	10
24	Interview	Social Context	Social Support	●	●	*Rely on Spouse*	11	9
25	Interview	Social Context	Social Network Roster	●	●	*# Alters in Household*	11	8
26	Interview	Physical Health	Morbidity	●	●	*Coronary Artery Disease*	11	8
27	Interview	Social Context	Social Support	●	●	*Open Up to Friends*	9	9
28	Interview	Social Context	Social Network Roster	●	●	*Number of Alters*	11	7
29	Bioassay	Blood	Dried Blood Spots	●	●	*C-Reactive Protein*	8	9
30	Interview	Social Context	Social Support	●	●	*Rely on Friends*	9	8
31	Interview	Social Context	Social Support	●	●	*Rely on Family*	9	8
32	Interview	Physical Health	Morbidity	●	○	*Chronic Kidney Disease*	9	8
33	Interview	Employment & Finances	Household Income & Assets	●	●	*Household Assets*	9	8
34	Interview	Physical Health	Morbidity	●	○	*Peptic Ulcers*	11	6
35	Interview	Mental Health & Personality	Thoughts & Feelings	●	●	*Loneliness Scale*	7	9

Rank	Variable Type	Domain	Subdomain	Wave Measured		Measure	Frequency of Use	
				1	2		Affiliated	Non-Affiliated
36	Interview	Social Context	Social Support	●	●	*Number Of Friends*	7	9
37	Interview	Physical Health	Morbidity	●	●	*Skin Cancer*	7	9
38	Interview	Social Context	Social Support	●	●	*Open Up to Family*	8	8
39	Interview	Social Context	Social Support	●	●	*Spouse Makes Too Many Demands*	9	7
40	Interview	Physical Health	Health-Related Behaviors	●	●	*Alcohol Use*	9	7
41	Interview	Social Context	Social Network Roster	●	●	*Relationship to Alter*	11	5
42	Interview	Sex & Partnership	Marital, Cohab & Sexual History	●	●	*Number of Marriages*	7	8
43	Interview	Social Context	Social Relationships & Activities	●	●	*Attend Organized Meetings*	7	8
44	Interview	Mental Health & Personality	Thoughts & Feelings	●	●	*HADS-A Anxiety Scale*	7	8
45	Interview	Social Context	Social Support	●	●	*Spouse Criticizes*	8	7
46	Interview	Social Context	Social Network Roster	●	●	*Frequency of Contacting Alters*	9	5
47	Assessment	Physical Assessments	Cardiovascular Function	●	●	*Blood Pressure*	9	5
48	Assessment	Physical Assessments	Cardiovascular Function	●	●	*Pulse*	9	5
49	Interview	Social Context	Social Support	●	●	*Relationship Happiness*	9	5
50	Interview	Physical Health	Morbidity	●	●	*Alzheimer's/Dementia/Parkinson's*	10	4
51	Interview	Sex & Partnership	Marital, Cohab & Sexual History	●	●	*Lifetime Number Of Sexual Partners*	6	7
52	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Sexual Problems*	9	4
53	Interview	Physical Health	Self-Reported Health	●	●	*Self-Rated Mental Health*	9	4
54	Interview	Social Context	Social Network Roster	●	●	*Network Density*	6	6
55	Interview	Social Context	Children & Grandchildren	●	●	*Number Of Children*	7	5
56	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Emotional Satisfaction with Relationship*	8	4
57	Interview	Physical Health	Morbidity	●	○	*Thyroid Disease Diagnosed*	5	6
58	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Frequency Of Masturbation*	7	4
59	Interview	Social Context	Social Network Roster	●	●	*Closeness to Alters*	9	2
60	Assessment	Neuropsychological Assessments	Cognitive Function	●	○	*SPMSQ*	6	4
61	Interview	Social Context	Social Network Roster	●	●	*Talk to Alter about Health Problems*	5	4
62	Interview	Physical Health	Sensory Function	●	●	*Self-Rated Eyesight*	5	4
63	Interview	Social Context	Social Support	●	●	*Spend Free Time W/ Spouse*	6	3
64	Bioassay	Blood	Dried Blood Spots	●	●	*Glycosylated Hemoglobin*	4	4
65	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Partner's Sexual Problems*	5	3
66	Assessment	Physical Assessments	Anthropometrics	●	●	*Waist Circumference*	5	3
67	Interview	Mental Health & Personality	Thoughts & Feelings	●	●	*Perceived Stress Scale*	6	2
68	Interview	Physical Health	Access to Healthcare	●	●	*Insurance Status*	6	2
69	Interview	Social Context	Social Relationships & Activities	●	○	*Socializing With Neighbors*	3	4
70	Interview	Life Experiences & Attitudes	Attitudes	●	○	*Attitudes: Sex*	3	4
71	Interview	Physical Health	Morbidity	●	○	*Cirrhosis Diagnosed*	4	3
72	Interview	Mental Health & Personality	Happiness & Life Satisfaction	●	●	*Self-Rated Happiness*	4	3
73	Interview	Social Context	Social Relationships & Activities	●	●	*Frequency Of Volunteering*	5	2
74	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Physical Pleasure in Relationship*	6	1

Rank	Variable Type	Domain	Subdomain	Wave Measured		Measure	Frequency of Use	
				1	2		Affiliated	Non-Affiliated
75	Interview	Physical Health	Health-Related Behaviors	●	○	*Other Tobacco Used*	2	4
76	Interview	Sex & Partnership	Marital, Cohab & Sexual History	●	●	*Number Of Sex Partners In Past 5 Years*	3	3
77	Interview	Social Context	Social Relationships & Activities	●	●	*Frequency Of Socializing*	3	3
78	Interview	Social Context	Social Support	●	●	*Family Criticizes*	3	3
79	Interview	Social Context	Social Support	●	●	*Friends Criticize*	3	3
80	Interview	Physical Health	STDs & HIV/AIDS	●	○	*Ever Had STD*	3	3
81	Interview	Social Context	Social Support	●	●	*Family Makes Too Many Demands*	3	3
82	Interview	Social Context	Social Support	●	●	*Friends Make Too Many Demands*	3	3
83	Interview	Social Context	Social Support	●	●	*Number Of Family Members Feel Close To*	5	1
84	Interview	Life Experiences & Attitudes	Attitudes	●	○	*Attitudes: Infidelity*	2	3
85	Interview	Physical Health	Self-Reported Health	●	○	*Health Status Relative To Peers*	2	3
86	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Partner's Physical Health*	3	2
87	Interview	Physical Health	Incontinence	●	●	*Urinary Incontinence*	3	2
88	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Importance Of Sex*	3	2
89	Bioassay	Saliva	Passive Drool	●	●	*Testosterone*	4	1
90	Interview	Social Context	Social Network Roster	●	●	*Alter Gender*	2	2
91	Assessment	Sensory Assessments	Distant Visual Acuity	●	○	*Sloan Letter Chart Testing*	2	2
92	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Arousal*	3	1
93	Interview	Physical Health	Morbidity	●	○	*Enlarged Prostate Diagnosed*	3	1
94	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Reasons For Not Having Sex*	3	1
95	Interview	Physical Health	Access to Healthcare	●	●	*Visits To Doctor*	3	1
96	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Frequency Sexual Ideation*	3	1
97	Interview	Physical Health	Health-Related Behaviors	●	○	*Cage Alcohol Questions*	3	1
98	Interview	Environmental Context	Residential Characteristics	●	●	*Observed Characteristics of Interview Room*	1	2
99	Interview	Life Experiences & Attitudes	Attitudes	●	●	*Religious Beliefs*	1	2
100	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Sexual Problems Bothersome*	2	1
101	Interview	Physical Health	Access to Healthcare	●	●	*Place To Go When Sick*	2	1
102	Interview	Physical Health	Health-Related Behaviors	●	●	*Hours Sleep*	2	1
103	Interview	Physical Health	Incontinence	●	●	*Stool Incontinence*	2	1
104	Interview	Environmental Context	Description of Respondent	●	●	*Observed Characteristics of Respondent*	2	1
105	Interview	Physical Health	Sensory Function	●	●	*Hearing Loss*	2	1
106	Interview	Social Context	Elder Abuse	●	○	*Anyone who Hits R*	2	1
107	Interview	Social Context	Elder Abuse	●	○	*Anyone who Insults R*	2	1
108	Interview	Social Context	Elder Abuse	●	○	*Anyone who Takes R's Money*	2	1
109	Interview	Environmental Context	Neighborhood Characteristics	●	●	*Observed Characteristics of Building*	2	1
110	Interview	Physical Health	Surgeries & Procedures	●	●	*Oophorectomy*	2	1
111	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Partner's Infidelity*	2	1
112	Interview	Physical Health	Medications	●	○	*Hormone Therapy: Female*	2	1

Rank	Variable Type	Domain	Subdomain	Wave Measured		Measure	Frequency of Use	
				1	2		Affiliated	Non-Affiliated
113	Interview	Physical Health	Surgeries & Procedures	●	●	*Hysterectomy*	2	1
114	Assessment	Sensory Assessments	Olfactory Sensitivity & Memory	●	●	*Sniffin'-Sticks Testing*	3	0
115	Interview	Physical Health	Morbidity	○	●	*Heart Disease Diagnosed*	3	0
116	Interview	Mental Health & Personality	Happiness & Life Satisfaction	●	○	*Self-Rated Self-Esteem*	3	0
117	Interview	Physical Health	Health-Related Behaviors	●	●	*Feel Rested In Morning*	1	1
118	Interview	Sex & Partnership	Marital, Cohab & Sexual History	●	●	*Number Of Cohabitating Partners*	1	1
119	Interview	Social Context	Children & Grandchildren	●	●	*Number Of Grandchildren*	1	1
120	Interview	Physical Health	Medications	●	○	*Alternative Medicines*	1	1
121	Interview	Social Context	Elder Abuse	●	○	*Anyone Too Controlling*	1	1
122	Interview	Environmental Context	Neighborhood Characteristics	●	●	*Observed Characteristics of Neighborhood*	1	1
123	Interview	Physical Health	Pain, Falls & Fractures	●	●	*Fallen In Past 12 Mos.*	1	1
124	Interview	Physical Health	STDs & HIV/AIDS	●	○	*Tested for HIV*	1	1
125	Assessment	Physical Assessments	Anthropometrics	○	●	*Hip Circumference*	1	1
126	Interview	Physical Health	Pain, Falls & Fractures	●	○	*Pain While Walking*	1	1
127	Interview	Social Context	Caregiving	●	●	*Caregiving*	1	1
128	Interview	Sex & Partnership	Marital, Cohab & Sexual History	●	●	*Timing of First Sex*	1	1
129	Interview	Environmental Context	Neighborhood Social Context	●	●	*Time Lived In Neighborhood*	1	1
130	Interview	Social Context	Social Relationships & Activities	○	●	*Partner Get On Nerves*	2	0
131	Bioassay	Saliva	Passive Drool	●	○	*Cotinine*	2	0
132	Interview	Physical Health	Incontinence	●	●	*Urinary Problems*	2	0
133	Bioassay	Saliva	Passive Drool	●	●	*DHEA*	2	0
134	Interview	Physical Health	Morbidity	●	●	*Discuss Sex With Doctor*	2	0
135	Interview	Physical Health	Morbidity	○	●	*Hip Fracture Diagnosed*	2	0
136	Interview	Physical Health	Morbidity	○	●	*Osteoporosis Diagnosed*	2	0
137	Interview	Sex & Partnership	Marital, Cohab & Sexual History	●	●	*Gender Of Partner*	2	0
138	Interview	Field Interviewer & Logistics	Survey Logistics	●	●	*Survey Structure*	2	0
139	Bioassay	Genitourinary Tract	Vaginal Swab	●	●	*Bacterial Vaginosis*	1	0
140	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Partner's Mental Health*	1	0
141	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Sex Frequency Satisfaction*	1	0
142	Bioassay	Saliva	Passive Drool	●	●	*Estradiol*	1	0
143	Interview	Physical Health	Self-Reported Health	○	●	*Illness Today*	1	0
144	Interview	Physical Health	Surgeries & Procedures	●	●	*Pap Smear/Dysplasia of Cervix*	1	0
145	Assessment	Physical Assessments	Physical Activity	○	●	**Actigraphy*	1	0
146	Assessment	Neuropsychological Assessments	Cognitive Function	○	●	*MoCA*	1	0
147	Bioassay	Genitourinary Tract	Vaginal Swab	●	●	*Yeast Vaginosis*	1	0
148	Bioassay	Blood	Dried Blood Spots	●	●	*Hemoglobin*	1	0
149	Interview	Physical Health	Surgeries & Procedures	●	●	*PSA/DRE/Prostate Cancer*	1	0
150	Interview	Social Context	Network Change	●	●	*Alter Age*	1	0
151	Interview	Physical Health	Pain, Falls & Fractures	●	○	*Head Injury*	1	0

Rank	Variable Type	Domain	Subdomain	Wave Measured		Measure	Frequency of Use	
				1	2		Affiliated	Non-Affiliated
152	Interview	Physical Health	Pain, Falls & Fractures	●	●	*Nose Surgery*	1	0
153	Assessment	Sensory Assessments	Gustatory Perception	●	○	*Taste Strip Testing*	1	0
154	Assessment	Physical Assessments	Sleep Patterns	○	●	**Sleep Study*	1	0
155	Interview	Physical Health	Fertility & Menopause	●	●	*Age At Last Period*	1	0
156	Interview	Physical Health	Fertility & Menopause	●	●	*Gravidity*	1	0
157	Interview	Physical Health	Surgeries & Procedures	●	●	*Pelvic Exam*	1	0
158	Bioassay	Saliva	Passive Drool	●	●	*Progesterone*	1	0
159	Interview	Sex & Partnership	Physical Contact	●	●	*Physical Contact*	1	0
160	Interview	Physical Health	Sensory Function	●	○	*Self-Rated Taste*	1	0
161	Interview	Field Interviewer & Logistics	Survey Logistics	○	●	*Wave 2 Disposition*	1	0
162	Interview	Social Context	Network Change	○	●	*Alter Alive/No Longer in Touch*	1	0
163	Interview	Life Experiences & Attitudes	Life Events	●	○	*Forced To Have Sex*	1	0
164	Interview	Mental Health & Personality	Personality	○	●	*Personality Questions*	1	0
165	Bioassay	Blood	Dried Blood Spots	●	●	*Epstein-Barr Virus*	1	0
166	Assessment	Physical Assessments	Physical Activity & Sleep Patterns	●	●	*Timed Walk & Chair Stands*	1	0
167	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Foreplay Frequency*	1	0
168	Interview	Sex & Partnership	Sexual Interest & Motivation	●	●	*Frequency Sleeping In Same Bed*	1	0
169	Interview	Physical Health	Medications	●	○	*Medicine: Improve Sex*	1	0
170	Interview	Life Experiences & Attitudes	Life Events	●	○	*Paid For Sex*	1	0
171	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Partner's Education*	1	0
172	Interview	Sex & Partnership	Marital, Cohab & Sexual History	●	●	*Expect to Have Sex Again*	1	0
173	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Pain During Sex*	1	0
174	Bioassay	Saliva	Buccal Swab	◆	○	*Oral Mucosal Transudate: OraSure®*	1	0
175	Assessment	Sensory Assessments	Tactile Discrimination	●	○	*Two-Point Discrimination Testing*	1	0
176	Bioassay	Blood	Dried Blood Spots	○	◆	*Cholesterol*	0	0
176	Bioassay	Blood	Dried Blood Spots	○	◆	*HDL*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	◆	*Adiponectin*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	◆	*Apolipoprotein B*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	◆	*Fibrinogen*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	◆	*GM-CSF*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	◆	*IFN-γ*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	◆	*IL-10*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	◆	*IL-12*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	◆	*IL-13*	0	0

Rank	Variable Type	Domain	Subdomain	Wave Measured		Measure	Frequency of Use	
				1	2		Affiliated	Non-Affiliated
176	Bioassay	Blood	Unclotted Whole Blood	○	•	*IL-1rα*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	•	*IL-1β*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	•	*IL-2*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	•	*IL-3*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	•	*IL-4*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	•	*IL-5*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	•	*IL-6*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	•	*MCP-1*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	•	*sIL-2ra*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	•	*TFG-α*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	•	*TNF-α*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	•	*TNF-β*	0	0
176	Bioassay	Blood	Unclotted Whole Blood	○	•	*VEGF*	0	0
176	Bioassay	Genitourinary Tract	Urine	○	•	*Creatinine*	0	0
176	Bioassay	Genitourinary Tract	Urine	○	•	*NGAL*	0	0
176	Bioassay	Genitourinary Tract	Urine	○	•	*Oxytocin*	0	0
176	Bioassay	Genitourinary Tract	Urine	○	•	*Vasopressin*	0	0
176	Bioassay	Genitourinary Tract	Vaginal Swab	•	○	*HPV*	0	0
176	Bioassay	Genitourinary Tract	Vaginal Swab	•	•	*Vaginal Cytology*	0	0
176	Bioassay	Saliva	Passive Drool	○	•	*Genotype*	0	0
176	Bioassay	Saliva	Salivettes	○	•	*Cortisol*	0	0
176	Interview	Basic Background	Internet	○	●	*Internet Use Frequency*	0	0
176	Interview	Employment & Finances	Household Income & Assets	○	●	*Moved in ten years*	0	0
176	Interview	Employment & Finances	Household Income & Assets	○	●	*Rent/Own Home*	0	0
176	Interview	Employment & Finances	Partner's Employment	○	●	*Partner's Employment*	0	0
176	Interview	Environmental Context	Neighborhood Social Context	○	●	*Perceived Danger*	0	0
176	Interview	Environmental Context	Neighborhood Social Context	○	●	*Social Cohesion*	0	0

Rank	Variable Type	Domain	Subdomain	Wave Measured		Measure	Frequency of Use	
				1	2		Affiliated	Non-Affiliated
176	Interview	Environmental Context	Neighborhood Social Context	○	●	*Social Ties*	0	0
176	Interview	Environmental Context	Residential Characteristics	○	●	*Interview Location*	0	0
176	Interview	Environmental Context	Residential Characteristics	○	●	*Others Present During Interview*	0	0
176	Interview	Field Interviewer & Logistics	Field Interviewer Performance	○	●	*Difficulty of Case*	0	0
176	Interview	Field Interviewer & Logistics	Field Interviewer Performance	○	●	*Total Interviews Completed*	0	0
176	Interview	Life Experiences & Attitudes	Attitudes	○	●	*Political Affiliation*	0	0
176	Interview	Life Experiences & Attitudes	Childhood Background	○	●	*Childhood Health*	0	0
176	Interview	Life Experiences & Attitudes	Childhood Background	○	●	*Family Well-Off*	0	0
176	Interview	Life Experiences & Attitudes	Childhood Background	○	●	*Happy Family Life*	0	0
176	Interview	Life Experiences & Attitudes	Childhood Background	○	●	*Lived with Both Parents*	0	0
176	Interview	Life Experiences & Attitudes	Childhood Background	○	●	*Parental Education*	0	0
176	Interview	Life Experiences & Attitudes	Childhood Background	○	●	*Place of Birth*	0	0
176	Interview	Life Experiences & Attitudes	Childhood Background	○	●	*Victim of Violence*	0	0
176	Interview	Life Experiences & Attitudes	Childhood Background	○	●	*Witnessed Violence*	0	0
176	Interview	Life Experiences & Attitudes	Life Events	●	●	*Ever Incarcerated*	0	0
176	Interview	Life Experiences & Attitudes	Life Events	●	●	*Harassment*	0	0
176	Interview	Life Experiences & Attitudes	Life Events	●	●	*Military Status*	0	0
176	Interview	Life Experiences & Attitudes	Life Events	●	●	*Recent Victim of Crime*	0	0
176	Interview	Mental Health & Personality	Bereavement	●	●	*Anyone Close Died in Past 5 Years*	0	0
176	Interview	Mental Health & Personality	Bereavement	●	●	*Feelings*	0	0
176	Interview	Physical Health	Access to Healthcare	●	●	*Last Visit to Doctor*	0	0
176	Interview	Physical Health	Access to Healthcare	●	●	*Place for Routine Care*	0	0
176	Interview	Physical Health	Disability & Functional Health	●	●	*Anyone Help with ADL?*	0	0
176	Interview	Physical Health	Disability & Functional Health	●	●	*Assisted Walking Equipment*	0	0
176	Interview	Physical Health	Disability & Functional Health	●	●	*Caregiver Relationship*	0	0
176	Interview	Physical Health	Disability & Functional Health	●	●	*Medical Decision Maker*	0	0
176	Interview	Physical Health	Fertility & Menopause	●	●	*Age at First Birth*	0	0
176	Interview	Physical Health	Fertility & Menopause	●	●	*Number of Children*	0	0
176	Interview	Physical Health	Fertility & Menopause	●	●	*Number of Intended Children*	0	0
176	Interview	Physical Health	Health-Related Behaviors	○	●	*Napping*	0	0
176	Interview	Physical Health	Medications	○	●	*Shared Needles in Past Year*	0	0
176	Interview	Physical Health	Medications	○	●	*Stopped Meds Due to Sexual Side Effects*	0	0
176	Interview	Physical Health	Medications	○	●	*Use of Sleep Medication*	0	0
176	Interview	Physical Health	Morbidity	○	●	*Skin Disease*	0	0
176	Interview	Physical Health	Pain, Falls & Fractures	○	●	*Broken Bones*	0	0
176	Interview	Physical Health	Pain, Falls & Fractures	○	●	*Pain Past Month*	0	0
176	Interview	Physical Health	Pain, Falls & Fractures	○	●	*Told to Limit Exercise/Sex*	0	0
176	Interview	Physical Health	Sensory Function	○	●	*Self-Rated Smell*	0	0
176	Interview	Physical Health	Sensory Function	○	●	*Self-Rated Touch*	0	0
176	Interview	Physical Health	STDs & HIV/AIDS	●	●	*Chances of HIV*	0	0

Rank	Variable Type	Domain	Subdomain	Wave Measured		Measure	Frequency of Use	
				1	2		Affiliated	Non-Affiliated
176	Interview	Physical Health	STDs & HIV/AIDS	●	●	*STDs & Flare-Ups in Past Year*	0	0
176	Interview	Physical Health	STDs & HIV/AIDS	●	●	*Vaginal Infections*	0	0
176	Interview	Physical Health	STDs & HIV/AIDS	●	●	*Why Tested/Not Tested for HIV*	0	0
176	Interview	Physical Health	Surgeries & Procedures	○	●	*Angioplasty*	0	0
176	Interview	Physical Health	Surgeries & Procedures	○	●	*Circumcision*	0	0
176	Interview	Physical Health	Surgeries & Procedures	○	●	*Colonoscopy*	0	0
176	Interview	Physical Health	Surgeries & Procedures	○	●	*Mastectomy*	0	0
176	Interview	Physical Health	Surgeries & Procedures	○	●	*Prostatectomy, ADT*	0	0
176	Interview	Physical Health	Surgeries & Procedures	●	●	*Tubal Ligation*	0	0
176	Interview	Physical Health	Surgeries & Procedures	○	●	*Vasectomy*	0	0
176	Interview	Sex & Partnership	Physical Contact	●	○	*Appeal Of Physical Contact*	0	0
176	Interview	Sex & Partnership	Pre-Pubertal Sexual Experiences	●	○	*Age at Puberty*	0	0
176	Interview	Sex & Partnership	Pre-Pubertal Sexual Experiences	●	○	*Age at Sexual Debut*	0	0
176	Interview	Sex & Partnership	Pre-Pubertal Sexual Experiences	●	○	*Ever Molested*	0	0
176	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Condom Usage*	0	0
176	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Effort Made To Look Attractive*	0	0
176	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Expected Duration of Relationship*	0	0
176	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Find Strangers Attractive*	0	0
176	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Frequency Agree To Sex*	0	0
176	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Frequency Obligatory Sex*	0	0
176	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*How Often Going Well W Partner*	0	0
176	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Partner's Sexual Pain*	0	0
176	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Partner's Sexual Problems Bothersome*	0	0
176	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Satisfaction w/ Foreplay Frequency*	0	0
176	Interview	Sex & Partnership	Sexual Interest & Motivation	●	○	*Sex Life Lacking Quality*	0	0
176	Interview	Social Context	Social Relationships & Activities	●	○	*Family/Friends Gets on Nerves*	0	0
176	Interview	Social Context	Social Relationships & Activities	●	○	*Feel Threatened by Partner/Family/Friends*	0	0

□ Not included in data collection
● Included in data collection
◆ Included in data collection but not present in public data release