Supplement for **Group Activity Participation in Relation to Contextual Isolation of United States Nursing Home Residents Living with Alzheimer’s Disease and Related Dementias**

Page 1 Table of Contents

Pages 2-8 Supplemental Table 1. Rationale for Potentially Socially Isolating Characteristics Considered for the Expert Nurse Survey.

Pages 9-13 Supplemental Table 2. Summarized Results of Expert Nurse Survey (n=7).

Pages 14-20 Supplemental Table 3. Operational Definitions of Potentially Socially Isolating Characteristics Derived from the Minimum Data Set 3.0.

Page 21-22 Supplemental Table 4. Contextual Isolation on the Basis of Individual Characteristics among Long-Stay US Nursing Home Residents in 2016 with Alzheimer’s Disease and Staff-Observed Participation in Group Activity (20% Cut Point).

Pages 23-24 Supplemental Table 5. Cumulative Contextual Isolation among Long-Stay US Nursing Home Residents in 2016 with Alzheimer’s Disease and Related Dementias and Staff-Observed Participation in Group Activity, Stratified by Social Characteristic (20% Cut Point).

Page 25-26 Supplemental Table 6. Importance of Group Activity Participation in Relation to Contextual Isolation on the Basis of Individual Characteristics among Long-Stay Residents in 2016 with Alzheimer’s Disease and Related Dementias and Staff-Observed Participation in Group Activities (20% Cut Point).

Pages 27-29 Supplemental Table 7. Importance of Group Activity Participation by Cumulative Contextual Isolation among Long-Stay Residents in 2016 with Alzheimer’s Disease and Related Dementias Living in a Nursing Home and Staff-Observed Participation in Group Activities, Stratified by Social Characteristic (20% Cut Point).

Page 30-31 Supplemental Table 8. Contextual Isolation on the Basis of Individual Characteristics among Long-Stay US Nursing Home Residents in 2016 with Alzheimer’s Disease and Related Dementias and Reported Importance of Group Activity Participation: Alternate Cut Points of 10%, 15%, 20%.

Pages 32-34 Supplemental Table 9. Cumulative Contextual Isolation among Long-Stay US Nursing Home Residents in 2016 with Alzheimer’s Disease and Related Dementias and Reported Importance of Group Activity Participation, Stratified by Social Characteristic: Alternate 10% Cut Point.

**Supplemental Table 1. Rationale for Potentially Socially Isolating Characteristics Considered for the Expert Nurse Survey.**

|  |  |
| --- | --- |
| Brief Description | Rationale |
| **Shared Demographic characteristics** |
| Gender - Men | Women residents form the majority in most nursing homes (Fashaw et al., 2019).Most direct care nursing home staff are women (National Center for Health Statistics, 2009, Table 1).Men who live in nursing homes are more likely to report loneliness (Drageset et al., 2011). |
| Gender – Women | The Veterans Affairs provides financial support for nursing home care to eligible veterans (U.S. Department of Veteran Affairs, 2019).A small minority (~3%) of long-stay residents in Veterans Affairs nursing homes are women (Mills et al., 2019).Women in nursing homes with dementia often exhibit anxiety and sadness (Resnick et al., 2020). |
| Transgender | Discrimination against transgender people in healthcare delivery is common (Winter et al., 2016). |
| Lesbian, Bisexual, or Gay | Loneliness is a common experience among older LGBTI populations (Hughes, 2016).Gay men are frequently concerned about being alone later in life (Hughes, 2009).Elder LGBT people often came of age before the Gay Rights movement, and thus have learned to cope by remaining invisible and reserved (Butler, 2008). |
| Young Age | Nursing home residents aged ≥ 65 years form the majority in most nursing homes (Fashaw et al., 2019).In assisted living and community settings, older age is associated with a reduced sense of loneliness (Park et al., 2020; Theeke, 2010).Residents being of similar ages predicts friendship in nursing homes (Retsinas & Garrity, 1985). |
| Advanced Age | Residents being of similar ages predicts friendship in nursing homes (Retsinas & Garrity, 1985). |
| Veteran Status | Families of veterans cared for in VA facilities reported greater satisfaction with care than veterans cared for in non-VA nursing homes (Lu et al., 2010).Socially isolated veterans have a higher hospitalization rate (Greysen et al., 2013). |
| Service Branch (Army, Navy, Air Force, Coast Guard, Marines) | Men in each service branch construct hegemonic masculinities designed to foster connection within the branch, and to subordinate members of other branches (Hinojosa, 2010). |
| Hispanic of any race(s) | In most nursing homes, Hispanics form a small minority (Fashaw et al., 2019).Whites in racially diverse neighborhoods, express lower levels of discriminatory attitudes towards Hispanics than in White majority neighborhoods (Cain et al., 2000; Oliver & Wong, 2003). |
| Non-Hispanic White alone | Many Whites experience anxiety about forming close interracial relationships (Godsil & Richardson, 2017).Whites in multiracial settings may fear anti-White discrimination (Craig & Richeson, 2018). |
| Non-Hispanic Black alone | In most nursing homes, Blacks form a small minority (Fashaw et al., 2019).African Americans report more experiences of discrimination in predominantly White contexts (Tropp, 2007).White adults feel less close to Blacks when they have limited exposure (Tropp, 2007).Blacks living in predominantly White neighborhoods often express fears of discrimination (Cain et al., 2000).White anti-Black prejudice tends to increase as the proportion of Blacks in the local population increases, but plateaus or decreases beyond a Black proportion of 20% (Taylor, 1998). |
| Non-Hispanic American Indian or Alaska Native alone | Residents who are not Hispanic, Black, or White form a small minority of nursing home residents (Jones et al., 2009).Many American Indian elders leave families and familiar communities to receive nursing home services in nursing homes unfamiliar with their way of life (Mick, 1983; Manson & Callaway, 1988). |
| Non-Hispanic Asian alone | Residents who are not Hispanic, Black, or White form a small minority of nursing home residents (Jones et al., 2009).Older Asian immigrants in America frequently report depression related to social support (Kuo et al., 2008).In racially diverse neighborhoods, Whites express lower levels of discriminatory attitudes towards Asians (Cain et al., 2000; Oliver & Wong, 2003). |
| Non-Hispanic Native Hawaiian or other Pacific Islander | Residents who are not Hispanic, Black, or White form a small minority of nursing home residents (Jones et al., 2009). |
| Non-Hispanic Multiracial | Residents who are not Hispanic, Black, or White form a small minority of nursing home residents (Jones et al., 2009).Biracial adults often report feeling socially isolated (Reed, 2008). |
| Language translation services needed | Canadian seniors born outside Canada who do not speak English or French are more likely to report isolation (de Jon Gierveld et al., 2015).Older Asian immigrants in America frequently report depression related to English proficiency and acculturation (Kuo et al., 2008). |
| Heavy-bodied (BMI classified as “obese”) | Discrimination on the basis of weight for height is prevalent in America (Andreyeva et al., 2008).Adults express preferences for greater social distance from obese persons than non-obese persons (Vartanian et al., 2015). |
| **Shared Habits** |
| Current tobacco use | Older adults who smoke are often socially isolated (Choi & DiNitto, 2015).Conflict between smoking residents and staff is common in smoke-free nursing homes (Adler et al., 2008). |
| Nonuse of tobacco | Nonsmokers frequently complain about passive smoke in nursing homes where smoking is allowed (Kochersberger & Clipp, 1996). |
| Religious Practice Important | Nursing home residents who engage in public religious activities experience lower rates of depression (Commerford & Reznikoff, 1995).On-site religious activities encourage social interaction for residents for whom religious practice is important – thus the absence of such activities may be detrimental for these residents (McFadden & Jacobson, 2003).Muslim elders have few prospects to identify a nursing home setting that respects their religious needs (Alfarah et al., 2012). |
| Religious Practice Not Important | Adults without strong religious beliefs are more likely to report loneliness (Lauder et al., 2006). |
| Agitated Behaviors | Verbal disruptive behaviors are associated with more social isolation (Draper et al., 2000). |
| Fondness for Animals / Pets | An experiment to randomly assign animal interaction to nursing home residents reduced loneliness and slowed reductions in quality of life (Sollami et al., 2017).Animal-human interactions can lead to greater human-human contact, in turn reducing loneliness (Banks and Banks, 2002). |
| Musical Tastes (Contemporary, Gospel, Country, Classical, Silence) | Engagement in choir reduced social isolation in nursing home residents with Alzheimer’s disease (Harris et al., 2104). |
| Keeping Up with Current Events |  |
| Shared Political Orientation | Americans are increasingly engaged in smaller social networks that are politically homogenous (Lee et al., 2020). |
| **Shared Clinical Conditions** |
| Severe mental illness  | Most nursing home residents do not have severe mental illness (Fashaw et al., 2019).Loneliness is frequently reported by people with severe mental illnesses, including in congregate settings (Brown, 1996).Desire for social distance from persons living with schizophrenia is higher among adults with no prior familiarity with persons with the condition (Angermeyer et al., 2004).Persons being treated for schizophrenia also express desire for social distance from others living with schizophrenia (Van Dorn et al., 2005). |
| Intellectual disability (developmental delay, Down syndrome, autism) | Adults living with intellectual disabilities report high levels of loneliness (Gilmore & Cuskelly, 2014).Neighbors of persons with intellectual disabilities are sometimes reluctant to develop typically neighborly relations with persons with intellectual disabilities (van Alphen et al., 2010).  |
| Sensory deprivation (Hearing, Vision, Speech) | Impairments in hearing, communication, and vision are associated with lower social engagement in nursing home residents (Resnick et al., 1997). |
| Disfiguring Conditions (Amputation, Paralysis, Burns) | Amputees may feel socially isolated due to their altered appearance and function (Liu et al., 2010).Some burn survivors experience significant stigmatization (Bayuo et al., 2016)Disfigurement is a source of stigma for cancer survivors (Reynolds, 2020). |
| Visible Stigmatizing Conditions (Parkinson’s, Huntington’s, Tourette’s, Aphasia) | A high proportion of people living with Parkinson’s report feeling socially isolated (37%) (Brod et al., 1998).Diminished social networks often follow a diagnosis of aphasia (Vickers, 2009); People living with aphasia often report social exclusion (Parr, 2011). |
| Alzheimer’s disease or related dementia | Elders with dementia are more likely to report social loneliness (Holmén et al., 2000). |
| Neurological Deficits (Stroke) | Nearly half of veterans surviving a stroke experienced social isolation (Haun et al., 2008) |
| Active HIV diagnosis | Most nursing home residents living with HIV are admitted to a nursing home with fewer than 5% HIV+ residents (Meyers et al., 2019).A high proportion of residents living with HIV report depression (Olivieri-Mui et al., 2019)A recent Kaiser Family Foundation survey found that 37% of Americans would not feel comfortable sharing living space with someone who is living with HIV (Kirzinger et al., 2019).Socially isolated veterans with HIV infection have a higher hospitalization rate (Greysen et al., 2013). |
| In Cancer Treatment | Loneliness is associated with higher mortality among nursing home residents with cancer (Drageset et al., 2012).Identity threat is a common consequence of cancer diagnosis (Knapp et al., 2014). |
| End-of-Life Care | With an average length-of-stay of at least two years in a nursing home, most residents with ADRD do not have a limited life expectancy (Zissimopoulos et al., 2014).Many residents near the end of life experience existential loneliness (Ettema et al., 2010). |
| Edentulous (Missing most teeth, or requires pureéd food) |  |
| Isolating treatment modalities: (Tracheostomy, Ventilator, Infectious Disease Isolation) | *Included as a negative control. We believed* a priori *that these treatment modalities, by their isolating nature, would prevent experiences of solidarity between similarly situated residents.* |

**Citations for Supplemental Table 1**

Geri Adler, Michael Greeman, Sue Rickers, Michael Kuskowski. Smoking in nursing homes: Conflicts and challenges. *Social Work in Health Care* 1997;25(4):67-81.

Ziad Alfarah, Fadi H. Ramadan, Emily Cury, Gary H. Brandeis. Muslim nursing homes in the United States: Barriers and prospects. J Am Med Dir Assoc, 2012;13(2):176-179.

Tatiana Andreyeva, Rebecca M. Puhl, Kelly D. Brownell. Changes in perceived weight discrimination among Americans, 1995-1996 through 2004-2006. *Obesity* 2008:16(5):1129-1134.

Matthias C. Angermeyer, Herbert Matschinger, Patrick W. Corrigan. Familiarity with mental illness and social distance from people with schizophrenia and major depression: testing a model using data from a representative population survey. *Schizophrenia Research* 2004;69(2-3):175-182.

Marian R. Banks, William A. Banks. The effects of animal-assisted therapy on loneliness in an elderly population in long-term care facilities. *Journal of Gerontology* 2002;57A(7):M428-M432.

Jonathan Bayuo, Pius Agbenorku, Richcane Amankwa. Study on acute burn injury survivors and the associated issues. *Journal of Acute Disease* 2016;5(3):206-209.

Meryl Brod, Gerald A. Mendelsohn, Brent Roberts. Patients’ experiences of Parkinson’s disease. *Journal of Gerontology* 1998;53B(4):P213-P222.

Catana Brown. A comparison of living situation and loneliness for people with mental illness. *Psychiatric Rehabilitation Journal* 1996;20(2):59-62.

Sandra S. Butler. Gay, lesbian, bisexual, and transgender (GLBT) elders. *Journal of Human Behavior in the Social Environment* 2008;9(4):25-44.

Bruce Cain, Jack Citrin, Cara Wong. *Ethnic Context, Race Relations, and California Politics*. Public Policy Institute of California: San Francisco, CA. (2000).

Namkee G. Choi, Diana M. DiNitto. Role of new diagnosis, social isolation, and depression in older adults’ smoking cessation. *The Gerontologist* 2015;55(5):793-801.

M. C. Commerford, Marvin Reznikoff. Relationship of religion and perceived social support to self-esteem and depression in nursing home residents. *The Journal of Psychology* 1995;130(1):35-50.

Maureen A. Craig, Jennifer A. Richeson. Majority no more? The influence of neighborhood racial diversity and salient national population changes on Whites’ perceptions of racial discrimination. *Russell Sage Foundation Journal of the Social Sciences* 2018;4(5):141-157.

Jenny De Jong Gierveld, Susan Van der Pas, Norah Keating. Loneliness of older immigrant groups in Canada: Effects of ethnic-cultural background. *Journal of Cross-Cultural Gerontology* 2015;30(3):251-268.

Jorunn Drageset, Marit Kirkevold, Birgitte Espehaug. Loneliness and social support among nursing home residents without cognitive impairment: A questionnaire survey. *International Journal of Nursing Studies* 2011;48(5):611-619.

Jorunn Drageset, Geir E. Eide, Marit Kirkevold, Anette H. Ranhoff. Emotional loneliness is associated with mortality among mentally intact nursing home residents with and without cacner: A five-year follow-up study. *Journal of Clinical Nursing* 2012;22(1-2):106-114.

Brian Draper, John Snowdon, Susanne Meares, Jane Turner, Peter Gonski, Bryan McMinn, Helen McIntosh, Linda Latham, Deborah Draper, Georgina Luscombe. Case-controlled study of nursing home residents referred for treatment of vocally disruptive behavior. *International Psychogeriatrics* 2000;12(3):333-344.

Eric J. Ettema, Louise D. Derksen, Evert van Leeuwen. Existential loneliness and end-of-life care: A systematic review. *Theoretical Medicine and Bioethics* 2010;31(2):141-169.

Shekinah A. Fashaw, Kali S. Thomas, Ellen McCreedy, Vincent Mor. Thirty-year trends in nursing home composition and quality since the passage of the Omnibus Reconciliation Act. *Journal of the American Medical Directors Association* 2020;21(2020):233-239.

Linda Gilmore, Monica Cuskelly. Vulnerability to loneliness in people with intellectual disability: An explanatory model. *Journal of Policy and Practice in Intellectual Disabilities* 2014;11(3):192-199.

Rachel D. Godsil, L. Song Richardson. Racial anxiety. *Iowa Law Review* 2017;102(5):2235-2263.

S. Ryan Greysen, Leora I. Horwitz, Kenneth E. Covinsky, Kirsha Gordon, Michael E. Ohl, Amy C. Justice. Does social isolation predict hospitalization and mortality among HIV+ and uninfected older Veterans? *Journal of the American Gerontological Society* 2013;61(9):1456-1463.

Phyllis B. Harris, Cynthia A. Caporella. An intergenerational choir formed to lessen Alzheimer’s disease stigma in college students and decrease the social isolation of people with Alzheimer’s disease and their family members: A pilot study. *American Journal of Alzheimer’s Disease & Other Dementias* 2014;29(3):270-281.

Jolie Haun, Maude Rittman, Melanie Sberna. The continuum of connectedness and social isolation post stroke recovery. *Journal of Aging Studies* 2008;22(2008):54-64.

Ramon Hinojosa. Doing hegemony: Military, men, and constructing a hegemonic masculinity. *The Journal of Men’s Studies* 2010;18(2):179-194.

Mark Hughes. Lesbian and gay people’s concerns about ageing and accessing services. *Australian Social Work* 2009;62(2):186-201.

Mark Hughes. Loneliness and social support among lesbian, gay, bisexual, transgender and intersex people aged 50 and over. *Ageing & Society* 36(9):1961-1981.

Adrienne L. Jones, Lisa L. Dwyer, Anita R. Bercovitz, Genevieve W. Strahan. The National Nursing Home Survey: 2004 overview. National Center for Health Statistics. *Vital Health Statistics* 2009;13(167):1-155.

Sarah Knapp, Allison Marziliano, Anne Moyer. Identity threat and stigma in cancer patients. *Health Psychology Open* 2014;1(1):1-10.

Gary Kochersberger, Elizabeth C. Clipp. Resident smoking in long-term care facilities: Policies and ethics. *Public Health Reports* 1996;111(1):66-70.

Ben C. H. Kuo, Vanessa Chong, Justine Joseph. Depression and its psychosocial correlates among older Asian immigrants in North America: A critical review of two decades’ research. *Journal of Aging and Health* 2008;20(6):615-652.

William Lauder, Kerry Mummery, Siobhan Sharkey. Social capital, age and religiosity in people who are lonely. *Journal of Clinical Nursing* 2006;15(3):334-340.

Byungkyu Lee, Peter Bearman. Political isolation in America. *Network Science* 2020;8(3):333-355.

Fen Liu, Rhonda M. Williams, Hsueh-Erh Liu, Nai-Hui Chien. The lived experience of persons with lower extremity amputation. *Journal of Clinical Nursing* 2010;19(15-16):2152-2161.

Hien Lu, Emily Trancik, Amos Bailey, Christine Ritchie, Kenneth Rosenfeld, Scott Shreve, Christian Furman, Dawn Smith, Catherine Wolff, David Casarett. Families’ perceptions of end-of-life care in Veterans Affairs versus non-Veterans Affairs facilities. *Journal of Palliative Medicine* 2010;13(8):991-996.

Susan H. McFadden, Jamie D. Jacobson. Residents’ attitudes about on-site religious activities: A comparison of continuing care retirement communities in two states. *Journal of Religious Gerontology* 2003;15(3):61-77.

Spero M. Manson, Donald G. Callaway. Health and aging among American Indians: Issues and challenges for the biobehavioral sciences. *American Indian and Alaska Native Mental Health Research* 1988;1:160-210.

C. Mick. A profile of American Indian nursing homes. Tucson: University of Arizona. *Long-Term Care Gerontology Center*. (1983).

Whitey L. Mills, Jun Ying, Mark E. Kunik. Identifying potential long-stay residents in veterans health administration nursing homes. *Geriatric Nursing* 2019;40(1):51-55.

National Center for Health Statistics. *National Nursing Home Survey: Demographics and career decisions: Estimates*. (2009). Available at: [https://www.cdc.gov/nchs/nnhs/nursing\_assistant\_tables\_estimates.htm Downloaded 01 April 2020](https://www.cdc.gov/nchs/nnhs/nursing_assistant_tables_estimates.htm%20Downloaded%2001%20April%202020).

J. Eric Oliver, Janelle Wong. Intergroup prejudice in multiethnic settings. *American Journal of Political Science* 2003;47(4):567-582.

Innah Park, Philip T. Veliz, Berit Ingersoll-Dayton, Laura M. Struble, Nancy A. Gallagher, Bonnie M. Hagerty, Janet L. Larson. Assisted living residents’ sense of belonging and psychosocial outcomes. *Western Journal of Nursing Research* 2020;42(10):805-813.

Susie Parr. Living with severe aphasia: Tracking social exclusion. *Aphasiology* 2007;21(1):98-123.

John Reed. The lived experiences of racism and discrimination among biracial adults. Dissertation. Capella University. (2008).

Barbara Resnick, Elizabeth Galik, Ann Kolanowski, Kimberly VanHaitsma, Marie Boltz, Shijun Zhu, Jeanette Ellis, Liza Behrens, Karen Eshraghi. Gender differences in presentation and management of behavioral and psychological symptoms associated with dementia among nursing home residents with moderate to severe dementia. *Journal of Women & Aging*, Published ahead of print: 2020 March 6,1-18.

Halaine E. Resnick, Brant E. Fries, Lois M. Verbrugge. Windows to their world: The effect of sensory impairments on social engagement and activity time in nursing home residents. *Journal of Gerontology* 1997;52B(3):S135-S144.

Joan Retsinas, Patricia Garrity. (1985). Nursing home friendships. *The Gerontologist* 1985;25(4):376-381.

Lisa M. Reynolds. Lauren Harris. Stigma in the face of cancer disfigurement: A systematic review and research agenda. *European Journal of Cancer Care* 2020; Published online before print.

Alfonso Sollami, Giovanna Artioli, Chiara Taffurelli. Pet therapy: An effective strategy to care for the elderly? An experimental study in a nursing home. *Acta Bio-medica: Atenei Parmensis* 2017;88(S1):25-31.

Marylee C. Taylor. How White attitudes vary with the racial composition of local populations: Numbers count. *American Sociological Review* 1998;63(4):512-535.

Laurie A. Theeke. Sociodemographic and health-related risks for loneliness and outcome differences by loneliness status in a sample of U.S. older adults. *Research in Gerontological Nursing* 2010;3(2):113-125.

Linda R. Tropp. Perceived discrimination and interracial contact: Predicting interracial closeness among Black and White Americans. *Social Psychology Quarterly* 2007;70(1):70-81.

United States Department of Veteran Affairs. *VA Nursing Homes, Assisted Living, and Home Health Care*. (2019). Available at: <https://www.va.gov/health-care/about-va-health-benefits/long-term-care/> Downloaded 1 Apr 2020.

Laura M. van Alphen, Anton J. M. Dijker, Bart H. W. van den Borne, Leopold M. G. Curfs. People with intellectual disability as neighbors: towards understanding the mundane aspects of social integration. *Journal of Community & Applied Social Psychology* 2010;20(5):347-362.

Richard A. Van Dorn, Jeffrey W. Swanson, Eric B. Elbogen, Marvin S. Swartz. A comparison of stigmatizing attitudes toward persons with schizophrenia in four stakeholder groups: Perceived likelihood of violence and desire for social distance. *Psychiatry* 2005;68(2):152-163.

Lenny R. Vartanian, Tara Trewartha, Eric J. Vanman. Disgust predicts prejudice and discrimination toward individuals with obesity. *Journal of Applied Social Psychology* 2016;46(6):369-375.

Candace P. Vickers. Social networks after the onset of aphasia: The impact of aphasia group attendance. *Aphasiology* 2010;24(6-8):902-913.

Sam Winter, Milton Diamond, Jamison Green, Dan Karasic, Terry Reed, Stephen Whittle, Kevan Wylie. Transgender people: Health at the margins of society. *The Lancet* 2016;388(10042):23-29.

Julie Zissimopoulos, Eileen Crimmins, Patricia St Clair. The value of delaying Alzheimer's disease onset. *Forum for Health Economics & Policy* 2014;18(1):25-39.

**Supplemental Table 2: Summarized Results of Nurse Expert Surveys (n=7)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Potential Source of Shared Experiences / Solidarity with other Residentsa | Potential Basis for Social Exclusion / Ostracism by Other Residentsa | This Characteristic Contributes to a Sense of Identity within the Nursing Homea | I would guess that being in the minority matters for most residents with this characteristic when they are less than X% of the resident population | Confidence in my opinionsb | Meets Nurse Expert Survey Requirements for Inclusionc | Operational Measure Available in Minimum Data Set 3.0 |
| SHARED DEMOGRAPHIC CHARACTERISTICS |
| Male | 2.8 | 1.8 | 3.0 | 10% | 3.0 | Y | Y |
| Female | 3.0 | 1.6 | 3.1 | 18% | 3.3 | Y | Y |
| Transgender | 2.4 | 3.0 | 2.3 | 14% | 2.1 | Y | Yd |
| Lesbian, Bisexual or Gay | 3.2 | 2.4 | 2.7 | 18% | 2.4 | Y | N |
| Widowed | 3.7 | 1.9 | 2.7 | 13% | 3.5 | Y | Y |
| Divorced or Separated | 2.7 | 1.5 | 2.0 | 10% | 2.3 | Y | Y |
| Currently Married | 3.0 | 1.3 | 2.9 | 10% | 3.1 | Y | Y |
| Having Children | 3.2 | 1.7 | 3.1 | 19% | 3.4 | Y | N |
| Young Age (<65 years) | 3.2 | 2.1 | 2.7 | 13% | 3.3 | Y | Y |
| Advanced Age (95+years)e | 2.8 | 1.7 | 2.9 | 13% | 3.3 | Y | Y |
| Veteran Status | 3.3 | 1.3 | 3.0 | 13% | 3.1 | Y | N |
| Service Branch (Army, Navy, Air Force, Coast Guard, Marines) | 3.2 | 1.6 | 3.2 | 12% | 3.0 | Y | N |
| Hispanic of any race(s) | 2.9 | 1.9 | 3.2 | 16% | 2.8 | Y | Y |
| Black / African American | 2.9 | 2.0 | 3.3 | 20% | 2.7 | Y | Y |
| White | 3.1 | 1.7 | 2.7 | 17% | 3.3 | Y | Y |
| Asian | 2.7 | 1.9 | 3.3 | 17% | 2.6 | Y | Y |
| Native Hawaiian or other Pacific Islander | 2.6 | 2.0 | 2.6 | 13% | 2.4 | Y | Y |
| American Indian or Alaska Native | 3.2 | 2.0 | 2.3 | 10% | 2.4 | Y | Y |
| Multiracial | 2.7 | 1.7 | 2.6 | 18% | 2.7 | Y | Y |
| Staff needs a translator to communicate | 3.3 | 2.9 | 2.8 | 19% | 2.9 | Y | Y |
| Heavy-bodied (Body mass index >30kg/m2) | 2.5 | 2.3 | 2.3 | 18% | 3.0 | Y | Y |
| SHARED HABITS / BEHAVORS / PREFERENCES |
| Current tobacco use | 3.1 | 2.3 | 2.3 | 12% | 3.7 | Y | Y |
| Tobacco non-user | 2.9 | 1.3 | 2.0 | 19% | 3.0 | Y | Y |
| Participant in religious practices | 3.4 | 1.9 | 2.7 | 17% | 3.1 | Y | Y |
| Declines to participate in religious practices | 2.4 | 1.8 | 2.0 | 18% | 2.8 | Y | Y |
| Agitated behaviors | 1.6 | 3.6 | 2.0 | 20% | 3.3 | N | - |
| Fondness for Animals / Pets | 3.4 | 1.3 | 2.3 | 12% | 3.0 | Y | Y |
| Musical Tastes (Contemporary, Gospel, Country, Classical, Silence) | 3.5 | 1.5 | 3.0 | 14% | 3.3 | Y | Y |
| Keeping Up with Current Events | 3.2 | 1.2 | 3.0 | 11% | 3.2 | Y | Y |
| Shared Political Orientation | 3.3 | 2.2 | 3.4 | 18% | 2.8 | Y | N |
| SHARED CLINICAL CONDITIONS |
| Severe Mental Illness (Bipolar Disorder, Psychotic Disorder, Schizophrenia) | 1.6 | 3.0 | 1.6 | 13% | 2.8 | N | - |
| Intellectual Disability (Pervasive Developmental Delay, Autism, Down Syndrome) | 2.5 | 3.0 | 2.3 | 16% | 2.3 | Y | Y |
| Sensory Deprivation (Hearing, Vision, Speech) | 2.2 | 2.8 | 2.5 | 14% | 3.3 | Y | Y |
| Disfiguring Conditions (Amputation, Paralysis, Burns) | 2.7 | 2.2 | 2.8 | 11% | 2.6 | Y | Y |
| Visible Stigmatized Conditions (Parkinson’s, Huntington’s, Tourette’s, Aphasia) | 2.0 | 2.8 | 1.6 | 17% | 2.8 | N | - |
| Alzheimer’s Disease or other Dementia | 1.8 | 2.3 | 2.5 | 23% | 3.7 | N | - |
| Neurological Deficits (Stroke) | 2.2 | 2.3 | 2.2 | 16% | 3.0 | Y | Y |
| HIV Diagnosis | 2.2 | 1.8 | 2.4 | 9% | 3.0 | Y | Y |
| Cancer | 3.3 | 2.0 | 3.6 | 13% | 3.4 | Y | Y |
| In End-of-Life Care (Hospice, or Physician-documented limited life expectancy) | 2.2 | 2.2 | 3.2 | 10% | 3.0 | Y | Y |
| Edentulous (missing most teeth, or requires pureéd food) | 2.2 | 2.0 | 1.2 | 18% | 3.0 | N | - |
| Isolating Treatment Modality (Tracheostomy, Ventilator, Infectious Disease Isolation) | 1.5 | 3.0 | 1.7 | 20% | 3.0 | N | - |

a Average of ratings, where "Yes, for ALL or Nearly All residents with this characteristic"=4; "For MOST residents with this characteristic"=3; "for SOME residents with this characteristic"=2; "For NONE, or only for A FEW residents with this characteristic"=1.

b Average of ratings, where "Highly confident"=4; "Fairly confident"=3; "I have limited experience to draw from"=2; "Honestly, I don't feel qualified to comment about residents with this characteristic"=1.

c Average rating for solidarity >=2.0 AND average rating for sense of identity>=2.0

d ICD-10 codes: F64.\* (Gender identity disorders); Z87.890 (Personal history of sex reassignment). Excluded from further consideration because fewer than 50 residents met this criteria.

Shaded rows are excluded from further consideration.

**Supplemental Table 3. Operational Definitions of Potentially Socially Isolating Characteristics Derived from the Minimum Data Set 3.0**

We used a lookback window of 300 days to capture of the most recent comprehensive assessment (i.e. admission, annual, or significant change in status). We carried the last valid observation forward if data were missing for indicators of intellectual disability (items in section A15), religious participation (items F0500h and F0800t), severe mental illness (items I5900, I5950, I6000), tobacco status (item J1300), height (K0200a) and weight (K0200b). The operational definitions of the numerator and denominators are shown in the Table below.

|  |  |  |
| --- | --- | --- |
| Brief Description | Operational Definition of Numerator | Operational Definition of Denominator |
| **Demographic Characteristics** |
| Gender- Men | A0800 – “Gender – 1. Male; 2. Female” = ‘1’ | A0800 = ‘1’ or ‘2’ |
| Gender- Women | A0800 = ‘2’ |
| Widowed | A1200 – “Marital Status – 1.Never married; 2. Married; 3. Widowed; 4. Separated; 5. Divorced” = ‘3’ | A1200 in(‘1’,’2’,’3’,’4’,’5’) |
| Divorced, Separated, or Never Married | A1200 in(‘1’,‘4’,‘5’) | A1200 in(‘1’,’2’,’3’,’4’,’5’) |
| Currently Married | A1200 = ‘2’ | A1200 in(‘1’,’2’,’3’,’4’,’5’) |
| Young Age | 40<=C\_Rsdnt\_Age\_Num<65 | 40<=C\_Rsdnt\_Age\_Num |
| Hispanic of any race(s) | A1000d – “Race/Ethnicity – Check all that apply – Hispanic or Latino” = ’1’ | A1000a = ‘1’ or ‘0’ORA1000b = ‘1’ or ‘0’ORA1000c = ‘1’ or ‘0’ORA1000d = ‘1’ or ‘0’ORA1000e = ‘1’ or ‘0’ORA1000f = ‘1’ or ‘0’ |
| Non-Hispanic White alone | A1000f – “White” = ’1’ANDNOT(A1000a=’1’ or A1000b=’1’ or A1000c=’1’ or A1000d=’1’ or A1000e=’1’) |
| Non-Hispanic Black alone | A1000c – “Black or African American” = ’1’ANDNOT(A1000a=’1’ or A1000b=’1’ or A1000d=’1’ or A1000e=’1’ or A1000f=’1’) |
| Non-Hispanic American Indian or Alaska Native alone | A1000a – “American Indian or Alaska Native” = ’1’ANDNOT(A1000b=’1’ or A1000c=’1’ or A1000d=’1’ or A1000e=’1’ or A1000f=’1’) |
| Non-Hispanic Asian alone | A1000b – “Asian” = ’1’ANDNOT(A1000a=’1’ or A1000c=’1’ or A1000d=’1’ or A1000e=’1’ or A1000f=’1’) |
| Non-Hispanic Native Hawaiian or Pacific Islander or Asian and Pacific Islander | A1000e – “Native Hawaiian or Other Pacific Islander” = ’1’ANDNOT(A1000a=’1’ or A1000c=’1’ or A1000d=’1’ or A1000f=’1’) |
| Non-Hispanic Multiracial | NOT(A1000d=’1’)AND( (A1000a=’1’ AND (A1000b=’1’ or A1000c=’1’ or A1000e=’1’ or A1000f=’1’))OR(A1000b=’1’ AND (A1000c=’1’ or A1000f=’1’))OR(A1000c=’1’ AND (A1000e=’1’ or A1000f=’1’))OR(A1000e=’1’ AND A1000f=’1’) ) |
| Staff needs a translator to communicate | A1100 – “Language – Does the resident need or want an interpreter to communicate with a doctor or health care staff?” = ‘1’ | All residents |
| Heavy-bodied (Body Mass Index 30 to 60 kg/m2) | 30 kg/m2<(703 \* K0200b – “Weight (in pounds). Base weight on most recent measure in the last 30 days; measure weight consistently, according to standard facility practice (e.g., in a.m. after voiding, before meal, with shoes off, etc.)” / (K0200a2) – “Height (in inches). Record most recent height measure since admission”)<60 kg/m2 | 15<(703 \* K0200b / (K0200a2))<60 |
| **Shared Habits / Behaviors / Preferences** |
| Current tobacco use | J1300 – “Current tobacco use” = ’1’ | J1300 = ‘0’ or ‘1’ |
| Nonuse of tobacco | J1300 = ’0’ |
| Participant in religious activities | F0500h – “While you are in this facility…how important is it to you to participate in religious activities or practices?” = ‘1’ – “Very important” or ‘2’ – “Somewhat important” or ‘5’ – “Important, but can’t do or no choice”ORF0800t – staff-assessed: “Participating in religious activities or practices” = ‘1’ | F0500h = ‘1’ or ‘2’ or ‘3’ or ‘4’ or ‘5’ORF0800t = ‘0’ or ‘1’ |
| Declines to participate in religious activities | (F0500h = ‘3’ – “Not very important” or ‘4’ – “Not important at all” OR F0800t = ’0’)ANDNOT (F0500h = ‘1’ or ‘2’ OR F0800t = ’1’) |
| Fondness for Animals / Pets | F0500c – “While you are in this facility…how important is it to you to be around animal such as pets?” = ‘2’ – “Very important” or ‘2’ – Somewhat important” or ‘5’ – “Important, but can’t do or no choice”ORF0800n – staff-assessed: “Being around animals such as pets” = ‘1’ | F0500c = ‘1’ or ‘2’ or ‘3’ or ‘4’ or ‘5’ORF0800n = ‘0’ or ‘1’ |
| Musical Tastes (Contemporary, Gospel, Country, Classical, Silence) | F0500b – “While you are in this facility…how important is it to you to listen to music you choose?” = ‘2’ – “Very important” or ‘2’ – Somewhat important” or ‘5’ – “Important, but can’t do or no choice”ORF0800m – staff-assessed: “Listening to music” = ‘1’ | F0500b = ‘1’ or ‘2’ or ‘3’ or ‘4’ or ‘5’ORF0800m = ‘0’ or ‘1’ |
| Keeping up with current events | F0500d – “While you are in this facility…how important is it to you to keep up with the news?” = ‘2’ – “Very important” or ‘2’ – Somewhat important” or ‘5’ – “Important, but can’t do or no choice”ORF0800o – staff-assessed: “Keeping up with the news” = ‘1’ | F0500d = ‘1’ or ‘2’ or ‘3’ or ‘4’ or ‘5’ORF0800o = ‘0’ or ‘1’ |
| **Shared Clinical Conditions** |
| Intellectual disability (developmental delay, Down syndrome, autism) | A1550a – “Down syndrome” = ‘1’ORA1550b – “Autism” = ‘1’ORA1550d – “Other organic condition related to MR/DD” = ‘1’ORA1550e = “MR/DD with no organic condition”ORA1510b – “Mental retardation/Developmental delay”ORI8000a-I8000j – “Additional active diagnoses”:Intellectual disability (ICD-9-CM code 319\* or ICD-10 code F79)ORPervasive developmental disorder (ICD-9-CM code 299\* or ICD-10 code F84\*)ORDown syndrome (ICD-9-CM code 758.0\* or ICD-10 code Q90\*) | All residents |
| Sensory deprivation | B0200 – “Hearing” = ‘2’ – “Moderate difficulty – speaker has to increase volume and speak distinctly” OR ‘3’ – “Highly impaired – absence of useful hearing”ORB0600 – “Speech Clarity” = ‘2 – “No speech – absence of spoken words”ORB1000 – “Vision” = ‘3’ – “Highly impaired – object identification in question, but eyes appear to follow objects” OR ‘4’ – “Severely impaired – no vision or sees only light, colors or shapes; eyes do not appear to follow objects” | B0200 in(‘0’,’1’,’2’,’3’)ORB0600 in(‘0’,’1’,’2’)ORB1000 in(‘0’,’1’,’2’,’3’,’4’) |
| Disfiguring conditions (amputation, paralysis, burns) | G0600d – “Mobility devices – Limb prosthesis’ = ‘1’ORO0500i – “Restorative Nursing Programs – Amputation/prosthesis care” = ‘1’ORI4900 – “Hemiplegia or Hemiparesis” = ‘1’ORI5000 – “Paraplegia” = ‘1’ORI5100 – “Quadriplegia” = ‘1’ORM1040f – “Other Ulcers, Wounds and Skin Problems – Burn(s) (second or third degree)” = ‘1’ | G0600d in(‘0’,’1’)ORO0500i in(‘0’,’1’)ORI4900 in(‘0’,’1’)ORI5000 in(‘0’,’1’)ORI5100 in(‘0’,’1’)ORM1040f in(‘0’,’1’) |
| Stroke | I4500 – “Cerebrovascular Accident (CVA), Transient Ischemic Attack (TIA), or Stroke” = ‘1’ | I4500 in(‘0’,’1’) |
| Active HIV diagnosis | I8000a-I8000j – “Additional active diagnoses”: Symptomatic HIV infection (ICD-9-CM codes 042\*-044\* or ICD-10 codes B20\*-B24\*)ORAsymptomatic HIV infection (ICD-9-CM code V08\* or ICD-10 code Z21\*)ORCounseling for HIV status (ICD-9-CM code V65.44 or ICD-10 code Z71.7) | All residents |
| Cancer | I0100 – “Cancer (with or without metastasis)” = ‘1’ORO0100a2 – “Chemotherapy Performed *while a resident* of this facility and within the *last 14 days*” = ‘1’ORO0100b2 – “Radiation Performed *while a resident* of this facility and within the *last 14 days*” = ‘1’ | I0100 in(‘0’,’1’)ORO0100a2 in(‘0’,1’)ORO0100b2 in(‘0’,’1’) |
| In end-of-life care (hospice, or physician-documented limited life expectancy) | J1400 – “Prognosis – Does the resident have a condition or chronic disease that may result in a life expectancy of less than 6 months? (Requires physician documentation)” = ‘1’ | J1400 = ‘0’ or ‘1’ |

**Supplemental Table 4. Contextual Isolation on the Basis of Individual Characteristics among Long-Stay US Nursing Home Residents in 2016 with Alzheimer’s Disease and Staff-Observed Participation in Group Activity (20% Cut Point).**

|  |  |  |
| --- | --- | --- |
| Social Characteristic | Proportion of Residents with this Characteristic (n=94,735)% | Contextual Isolation on this Characteristic(Fewer than 20% of Co-Residents Share this Characteristic)% |
| Male | 25.4 |  1.7 |
| Female | 74.6 |  0.2 |
| Married | 21.5 |  24.1 |
| Widowed | 51.6 |  3.1 |
| Never Married, Divorced or Separated | 26.9 |  9.0 |
| Young age (50-64 years) |  5.9 |  37.6 |
| Hispanic, of any race(s) |  6.6 |  49.3 |
| Not Hispanic and |
|  White only | 75.5 |  0.6 |
|  Black only | 15.0 |  26.5 |
|  AI/AN only |  0.4 |  58.3 |
|  Asian only |  2.1 |  59.1 |
|  NHOPI only |  0.3 |  88.5 |
|  Multiracial |  0.1 | 100.0 |
| Staff needs translator |  8.1 |  59.1 |
| Heavy-bodied (BMI 30-60 kg/m2) | 15.7 |  7.1 |
| Current tobacco use |  1.1 |  60.3 |
| No current tobacco use | 98.9 | -a |
| Religious practices important | 54.3 | -a |
| Religious practices not important | 45.7 |  16.9 |
| Music important | 83.8 | -a |
| Pets/animals important | 41.0 |  0.5 |
| News/current events important | 14.5 | -a |
| Intellectual disability |  2.8 | 87.2 |
| Sensory impairment | 39.3 | 56.3 |
| Disfiguring condition |  8.4 | 82.8 |
| Stroke | 10.5 | 59.3 |
| Cancer |  4.1 | 96.1 |
| HIV infection |  0.1 | 82.9 |
| End of life care |  5.1 | 94.7 |

a Proportions based on a numerator under 50 not reported to avoid imprecise estimates.

**Supplemental Table 5. Cumulative Contextual Isolation among Long-Stay US Nursing Home Residents in 2016 with Alzheimer’s Disease and Related Dementias and Staff-Observed Participation in Group Activity, Stratified by Social Characteristic (20% Cut Point).**

|  |  |
| --- | --- |
|  | Cumulative Contextual Isolation |
| Social Characteristic | n=94,735 | None | On Any One Characteristic | On Two or More Characteristics |
|  | % | % | % | % |
| Total population | 100.0 | 45.3 | 34.3 | 20.4 |
|  Male |  25.4 | 37.8 | 35.2 | 27.0 |
|  Female |  74.6 | 47.8 | 34.0 | 18.2 |
|  Married |  21.5 | 38.4 | 36.3 | 25.3 |
|  Widowed |  51.6 | 51.9 | 33.1 | 15.0 |
|  Never Married, Divorced or Separated |  26.9 | 38.0 | 35.1 | 26.9 |
|  Young age (50-64 years) |  5.9 | 22.0 | 31.9 | 46.1 |
|  Age 65-74 years |  10.4 | 37.3 | 35.8 | 26.9 |
|  Age 75-84 years |  25.3 | 44.8 | 34.5 | 20.7 |
|  Age 85-94 years |  41.4 | 49.9 | 33.5 | 16.6 |
|  Age 95 years and older |  11.2 | 47.9 | 37.0 | 15.2 |
|  Hispanic, of any race(s) |  6.6 | 20.4 | 30.4 | 49.2 |
| Not Hispanic and |
|  White only |  75.5 | 51.1 | 34.0 | 14.9 |
|  Black only |  15.0 | 31.9 | 38.1 | 30.0 |
|  AI/AN only |  0.4 | 22.3 | 40.9 | 36.8 |
|  Asian only |  2.1 | 20.5 | 29.1 | 50.4 |
|  NHOPI only |  0.3 | -a | 33.0 | 61.5 |
|  Multiracial |  <0.1 | -a | -a | -a |
|  Staff needs translator |  8.1 | 17.9 | 28.1 | 54.0 |
|  Staff does not need translator |  91.9 | 47.7 | 34.8 | 17.5 |
|  Heavy-bodied (BMI 30-60 kg/m2) |  15.7 | 42.6 | 35.0 | 22.4 |
|  Not heavy-bodied (BMI 15-30 kg/m2) |  84.3 | 45.8 | 34.2 | 20.1 |
|  Current tobacco use |  1.1 | 19.0 | 37.2 | 43.7 |
|  No current tobacco use |  98.9 | 45.6 | 34.3 | 20.2 |
|  Religious practices important |  54.3 | 50.3 | 33.2 | 16.5 |
|  Religious practices not important |  45.7 | 39.2 | 35.6 | 25.1 |
|  Music important |  83.8 | 45.9 | 34.1 | 20.0 |
|  Music not important |  16.2 | 42.0 | 35.4 | 22.6 |
|  Pets/animals important |  41.0 | 49.4 | 33.7 | 16.8 |
|  Pets/animals not important |  59.0 | 42.4 | 34.7 | 22.9 |
|  News/current events important |  14.5 | 45.9 | 34.5 | 19.7 |
|  News/current events not important |  85.5 | 45.2 | 34.3 | 20.6 |
|  Intellectual disability |  2.8 |  7.3 | 35.0 | 57.7 |
|  No intellectual disability |  97.2 | 46.4 | 34.3 | 19.4 |
|  Sensory impairment |  39.3 | 24.9 | 43.1 | 32.0 |
|  No sensory impairment |  60.7 | 58.4 | 28.6 | 12.9 |
|  Disfiguring condition |  8.4 |  6.6 | 29.8 | 63.6 |
|  No disfiguring condition |  91.6 | 48.8 | 34.7 | 16.5 |
|  Stroke |  10.5 | 13.7 | 33.3 | 53.1 |
|  No stroke |  89.5 | 49.0 | 34.4 | 16.6 |
|  Cancer |  4.1 |  1.9 | 46.1 | 52.0 |
|  No cancer |  95.9 | 47.1 | 33.8 | 19.1 |
|  HIV infection |  0.1 | -a | -a | 62.9 |
|  No HIV infection |  99.9 | 45.3 | 34.3 | 20.4 |
|  End of life care |  5.1 |  2.8 | 43.2 | 54.0 |
|  Not end of life care |  94.9 | 47.5 | 33.8 | 18.6 |

a Proportions based on a numerator under 50 not reported to avoid imprecise estimates.

**Supplemental Table 6. Importance of Group Activity Participation in Relation to Contextual Isolation on the Basis of Individual Characteristics among Long-Stay Residents in 2016 with Alzheimer’s Disease and Related Dementias and Staff-Observed Participation in Group Activity.**

|  |  |
| --- | --- |
|  | Proportion of residents for whom staff reported observing group activity participation. |
| Social Characteristic | Not Contextually Isolated on this Characteristic | Contextually Isolated on this Characteristic |
| Male | 55.3 | 58.0 |
| Female | 61.1 | 69.5 |
| Married | 58.4 | 55.1 |
| Widowed | 62.0 | 56.1 |
| Never Married, Divorced or Separated | 56.8 | 60.6 |
| Young age (50-64 years) | 51.4 | 55.6 |
| Hispanic, of any race(s) | 53.3 | 59.9 |
| Not Hispanic and |
|  White only | 60.6 | 54.8 |
|  Black only | 56.2 | 57.5 |
|  AI/AN only | 59.6 | 51.1 |
|  Asian only | 61.8 | 57.5 |
|  NHOPI only | -a | 55.8 |
|  Multiracial | -a | 50.9 |
| Staff needs translator | 58.6 | 58.2 |
| Heavy-bodied (Body mass index 30-60 kg/m2) | 61.8 | 68.9 |
| Current tobacco use | 54.3 | 57.6 |
| No current tobacco use | 59.7 | -a |
| Religious practices important | 75.4 | -a |
| Religious practices not important | 41.3 | 38.9 |
| Music important | 66.7 | -a |
| Pets/animals important | 75.4 | 74.1 |
| News/current events important | 71.1 | -a |
| Intellectual disability | 67.8 | 59.7 |
| Sensory impairment | 56.3 | 54.7 |
| Disfiguring condition | 46.9 | 54.4 |
| Stroke | 48.8 | 55.0 |
| Cancer | 64.2 | 62.7 |
| HIV infection | -a | -a |
| End of life care | 51.4 | 50.0 |

a Proportions based on a numerator under 50 not reported to avoid imprecise estimates.

**Supplemental Table 7. Importance of Group Activity Participation by Cumulative Contextual Isolation among Long-Stay Residents in 2016 with Alzheimer’s Disease and Related Dementias Living in a Nursing Home and Staff-Observed Participation in Group Activities, Stratified by Social Characteristic (20% Cut Point).**

|  |  |
| --- | --- |
|  | Proportion of residents for whom staff reported observing group activity participation. |
|  | Not Contextually Isolated on Any Characteristics | Contextually Isolated on One Characteristic | Contextually Isolated on Multiple Characteristics |
| Total | 63.6 | 58.7 | 52.5 |
|  Male | 57.9 | 55.8 | 51.1 |
|  Female | 65.2 | 59.7 | 53.2 |
|  Married | 61.4 | 58.0 | 51.2 |
|  Widowed | 65.8 | 59.7 | 52.7 |
|  Divorced, Separated, or Never Married | 59.8 | 57.4 | 53.1 |
| Young (age 50-64 years) | 53.6 | 53.3 | 52.4 |
|  65-74 years | 57.4 | 53.7 | 50.8 |
|  75-84 years | 62.7 | 58.6 | 51.4 |
|  85-94 years | 65.4 | 60.2 | 53.5 |
|  95 years and Older | 66.0 | 59.4 | 54.5 |
| Hispanic of any race(s) | 58.3 | 56.6 | 55.7 |
| White | 64.1 | 58.8 | 52.6 |
| Black | 61.3 | 58.1 | 49.4 |
| American Indian/Alaska Native | 60.5 | 57.0 | 48.6 |
| Asian | 65.5 | 61.8 | 55.2 |
| Pacific Islander | -a | 67.9 | 52.2 |
| Multiracial | -a | -a | -a |
|  Translation services needed | 61.2 | 60.0 | 56.5 |
|  Translation services not needed | 63.7 | 58.6 | 51.4 |
| Heavy-bodied (Body mass index 30-60kg/m2) | 65.9 | 61.7 | 56.5 |
| Not heavy-bodied (Body mass index 15-30kg/m2) | 63.2 | 58.1 | 51.6 |
|  Current tobacco use | 54.1 | 60.2 | 53.9 |
|  No current tobacco use | 63.7 | 58.6 | 52.4 |
|  Religious Practice Important | 77.2 | 74.8 | 71.2 |
|  Religious Practice not Important | 43.0 | 40.8 | 37.9 |
|  Music Important | 70.4 | 65.8 | 59.4 |
|  Music not Important | 25.2 | 23.1 | 20.6 |
|  Pets/Animals Important | 77.0 | 74.8 | 71.8 |
|  Pets/animals not Important | 52.8 | 47.7 | 42.6 |
|  News/Current Events Important | 73.8 | 70.8 | 65.2 |
|  News/Current Events not Important | 61.9 | 56.6 | 50.4 |
|  Intellectual Disability | 67.9 | 63.5 | 58.1 |
|  No Intellectual Disability | 63.6 | 58.5 | 52.0 |
|  Sensory Impairment | 59.2 | 57.2 | 49.9 |
|  No Sensory Impairment | 64.9 | 60.1 | 56.5 |
|  Disfiguring Condition | 49.2 | 57.9 | 51.3 |
|  No Disfiguring Condition | 63.8 | 58.7 | 52.9 |
|  Stroke | 53.1 | 55.8 | 50.2 |
|  No Stroke | 64.0 | 59.0 | 53.3 |
|  Cancer | -a | 66.6 | 58.8 |
|  No Cancer | 63.6 | 58.2 | 51.7 |
|  HIV | -a | -a | -a |
|  No HIV | 63.6 | 58.7 | 52.5 |
|  End-of-Life Care | 58.5 | 53.4 | 47.0 |
|  Not End-of-Life Care | 63.7 | 59.0 | 53.3 |

a Proportions based on a numerator under 50 not reported to avoid imprecise estimates.

**Supplemental Table 8. Contextual Isolation on the Basis of Individual Characteristics among Long-Stay US Nursing Home Residents in 2016 with Alzheimer’s Disease and Related Dementias and Reported Importance of Group Activity Participation: Alternate Cut Points of 10%, 15%, and 20%.**

|  |  |  |
| --- | --- | --- |
|  | Proportion of Residents with this Characteristic | Contextual Isolation on this Characteristic(Fewer than X% of Co-Residents Share this Characteristic) |
|  | (n=335,421) | 10% Cut Point | 15% Cut Point | 20% Cut Point |
| Social Characteristic | % | % | % | % |
| Male | 29.3 | -a |  0.2 |  1.6 |
| Female | 70.7 | <0.1 |  0.1 |  0.2 |
| Married | 18.3 |  1.4 |  6.9 |  21.4 |
| Widowed | 51.7 |  0.4 |  1.1 |  2.6 |
| Never Married, Divorced or Separated | 30.3 |  0.5 |  2.8 |  8.7 |
| Young age (50-64) |  6.5 | 11.2 | 22..9 |  35.2 |
| Hispanic, of any race(s) |  5.8 | 23.6 | 33.5 |  42.2 |
| Not Hispanic and  |  |  |  |  |
|  White only | 77.6 |  0.1 |  0.3 |  0.6 |
|  Black only | 14.2 | 10.8 | 18.4 |  25.6 |
|  American Indian/Alaska Native only |  0.3 | 56.4 | 62.0 |  66.2 |
|  Asian only |  1.8 | 31.7 | 39.5 |  45.3 |
|  NHOPI only |  0.3 | 65.3 | 71.7 |  78.2 |
|  Multiracial | <0.1 | 98.0 | 99.3 | 100.0 |
| Staff needs translator |  5.7 | 23.5 | 34.4 |  44.4 |
| Heavy-bodied (body mass index 30-60 kg/m2) | 26.8 |  0.2 |  1.0 |  5.8 |
| Current tobacco use |  4.2 | 32.0 | 50.9 |  64.6 |
| No current tobacco use | 95.8 | -a | -a |  <0.1 |
| Religious practices important | 79.9 | -a | -a |  <0.1 |
| Religious practices not important | 20.1 |  2.8 |  7.8 | 16.3 |
| Music important | 89.2 | -a | -a |  <0.1 |
| Pets/animals important | 64.1 |  0.1 |  0.3 |  0.8 |
| News/current events important | 72.7 | -a | <0.1 |  <0.1 |
| Intellectual disability |  1.9 | 73.9 | 84.9 |  88.9 |
| Sensory impairment | 16.7 | 12.3 | 35.4 |  59.8 |
| Disfiguring condition |  9.2 | 33.2 | 66.1 |  84.7 |
| Stroke | 11.0 | 19.3 | 40.6 |  61.2 |
| Cancer |  5.0 | 54.1 | 85.5 |  95.6 |
| HIV infection |  0.2 | 75.7 | 76.2 |  78.4 |
| End of life care |  2.0 | 62.1 | 85.8 |  94.3 |

a Proportions based on a numerator under 50 not reported to avoid imprecise estimates.

**Supplemental Table 9. Cumulative Contextual Isolation among Long-Stay US Nursing Home Residents in 2016 with Alzheimer’s Disease and Related Dementias and Reported Importance of Group Activity Participation, Stratified by Social Characteristic: Alternate 10% Cut Point.**

|  |  |
| --- | --- |
|  | Cumulative Contextual Isolation |
| Social Characteristic | n=94,735 | None | On Any One Characteristic | On Two or More Characteristics |
|  | % | % | % | % |
| Total population | 100.0 | 81.6 | 15.6 |  2.8 |
|  Male |  29.3 | 76.7 | 19.3 |  3.9 |
|  Female |  70.7 | 83.6 | 14.1 |  2.3 |
|  Married |  18.3 | 80.8 | 16.0 |  3.2 |
|  Widowed |  51.7 | 84.7 | 13.3 |  2.0 |
|  Never Married, Divorced or Separated |  30.3 | 76.7 | 19.4 |  3.8 |
|  Young age (50-64 years) |  6.5 | 64.0 | 27.6 |  8.4 |
|  Age 65-74 years |  11.4 | 75.8 | 20.4 |  3.8 |
|  Age 75-84 years |  24.9 | 81.2 | 16.1 |  2.7 |
|  Age 85-94 years |  41.5 | 85.2 | 12.9 |  1.9 |
|  Age 95 years and older |  10.1 | 85.4 | 13.0 |  1.6 |
|  Hispanic, of any race(s) |  5.8 | 61.4 | 26.8 | 11.8 |
| Not Hispanic and |
|  White only | 77.6 | 85.3 | 13.1 |  1.7 |
|  Black only | 14.2 | 74.7 | 21.7 |  3.6 |
|  American Indian / Alaska Native only |  0.3 | 37.0 | 51.1 | 11.9 |
|  Asian only |  1.8 | 59.9 | 29.6 | 10.5 |
|  Native Hawaiian and other Pacific Islander only |  0.3 | 30.0 | 53.9 | 16.1 |
|  Multiracial | <0.1 | -a | 83.7 | -a |
|  Staff needs translator |  5.7 | 61.7 | 24.3 | 14.0 |
|  Staff does not need translator | 94.3 | 82.8 | 15.1 |  2.1 |
|  Heavy-bodied (BMI 30-60 kg/m2) | 26.8 | 81.1 | 15.9 |  2.9 |
|  Not heavy-bodied (BMI 15-30 kg/m2) | 73.2 | 81.8 | 15.5 |  2.7 |
|  Current tobacco use |  4.2 | 54.6 | 37.0 |  8.4 |
|  No current tobacco use | 95.8 | 82.8 | 14.7 |  2.5 |
|  Religious practices important | 79.9 | 82.5 | 15.0 |  2.6 |
|  Religious practices not important | 20.1 | 78.2 | 18.4 |  3.5 |
|  Music important | 89.2 | 81.7 | 15.6 |  2.7 |
|  Music not important | 10.8 | 80.7 | 16.3 |  3.0 |
|  Pets/animals important | 64.1 | 82.1 | 15.3 |  2.7 |
|  Pets/animals not important | 35.9 | 80.7 | 16.3 |  3.0 |
|  News/current events important | 72.7 | 82.2 | 15.2 |  2.5 |
|  News/current events not important | 27.3 | 79.9 | 16.8 |  3.3 |
|  Intellectual disability |  1.9 | 21.8 | 63.6 | 14.6 |
|  No intellectual disability | 98.1 | 82.7 | 14.7 |  2.5 |
|  Sensory impairment | 16.7 | 73.8 | 21.8 |  4.4 |
|  No sensory impairment | 83.3 | 83.2 | 14.4 |  2.4 |
|  Disfiguring condition |  9.2 | 52.0 | 35.5 | 12.5 |
|  No disfiguring condition | 90.8 | 84.6 | 13.6 |  1.8 |
|  Stroke | 11.0 | 61.1 | 29.5 |  9.4 |
|  No stroke | 89.0 | 84.1 | 13.9 |  1.9 |
|  Cancer |  5.0 | 38.5 | 51.7 |  9.8 |
|  No cancer | 95.0 | 83.9 | 13.7 |  2.4 |
|  HIV infection |  0.2 | 19.6 | 60.9 | 19.5 |
|  No HIV infection | 99.8 | 81.7 | 15.5 |  2.7 |
|  End of life care |  2.0 | 31.0 | 55.4 | 13.6 |
|  Not end of life care | 98.0 | 82.6 | 14.8 |  2.5 |

a Proportions based on a numerator under 50 not reported to avoid imprecise estimates.