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Less supportive social relationships are linked to greater risk of cognitive decline in older adulthood. Few studies have examined if declines in social support predict risk of developing Mild Cognitive Impairment (MCI) or dementia and the neurobiological factors that may contribute to these associations. We analyzed data from 926 women in the Women's Health Initiative Memory Study-MRI (WHIMS-MRI) to examine whether low social support at baseline and declines over an 8-year period predicted subsequent risk of developing MCI/dementia. Social support (Medical Outcomes Study Social Support Scale) was self-reported at the baseline (1994-1998) and closeout (2004-2005) of the parent WHI hormone therapy clinical trial. Annual neuropsychological assessments were conducted in WHIMS (through 2018) to ascertain incident MCI/dementia; structural brain scans were performed in 2005-2006. Structural equation models assessed the association between level and change in social support and risk of incident MCI/dementia and putative mediation of these associations by structural brain variables in women free of MCI/dementia as of the trial closeout, adjusting for demographic, lifestyle, depression, and biomedical covariates. Both low baseline social support (HR=1.24 per 1-SD; $p<.05$) and declines in support (HR=1.18 per 1-SD; $p<.05$) predicted incident MCI/dementia risk. Women reporting decreasing social support had significantly lower hippocampal volumes ($\beta=-.070$; $p<.05$) which accounted for ~14% of the total effect of declining support on MCI/dementia risk. We will highlight the implications of these findings for understanding how changes in social support may be linked to risk of MCI/dementia, including potential bidirectional associations of changes in social support and neurobiological health.

LANGUAGE AND MEMORY RESERVE MEDIATE PROTECTIVE EFFECTS OF SOCIAL SUPPORT ON MCI OR DEMENTIA RISK IN OLDER WOMEN

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More supportive social relationships are protective of cognitive decline in older adulthood. Although supportive social relationships are hypothesized to promote cognitive reserve (CR; the cognitive adaptation to neuropathology), it is unknown whether CR mediates associations between social support and risk of developing mild cognitive impairment or dementia (MCI/dementia). Data from 815 women (aged 73-87 years) participating in the Women's Health Initiative Memory Study-MRI cohort (WHIMS-MRI) and Women's Health Initiative Study of Cognitive Aging (WHISCA) were

analyzed to examine whether domain-specific estimates of CR mediate associations between social support and incident MCI/dementia risk. Women completed the Medical Outcomes Study Social Support Scale (MOS-SS) in 2004-2005, a structural MRI (sMRI) of the brain in 2005-06, and annual extensive neuropsychological examinations till 2018. CR (6-months after completing the MOS-SS) was estimated across different domains (e.g. verbal memory, figural memory, language, visuospatial, and attention) as the residual variance after regressing out effects of sMRI variables, sociodemographic factors, and measurement error. Structural equation models were constructed to examine whether CR mediate associations between social support and MCI/dementia risk while adjusting for covariates. Higher social support was associated with lower MCI/dementia risk (hazard ratio=0.85 per 1-SD; $p=0.037$), higher language reserve (standardized $\beta=0.09$; $p=0.008$) and verbal memory reserve (standardized $\beta=0.08$; $p=0.025$). Language and verbal memory reserve each significantly explained approximately 14% of the protective effect of social support. Findings illustrate the heterogeneous effect of social support on CR, highlighting the importance of language and verbal memory reserve as mediators of the association between social support and MCI/dementia risk.

SOCIAL INTEGRATION AND RISK OF DEMENTIA AMONG OLDER ADULTS

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We examine the relationship between social integration and cognitive impairment and dementia among older adults using longitudinal data from Waves 1-8 of the National Health and Aging Trends Study (NHATS). The sample includes 7,492 respondents age 65 and older at baseline. We test multidimensional measures of social integration and cognitive well-being using discrete-time hazard models. The risk of dementia is calculated by a series of performance-based tests. Measures include levels of dementia: no dementia, cognitive impairment not dementia (CIND), and dementia, and three domains of cognition functioning: orientation, executive function, and memory. Social integration is an additive index measured by several questions, including marital status, living arrangement, social network, social contact, and social participation. Our results indicate that people with higher social integration have a lower risk of both cognitive impairment (not dementia) and dementia compared to those with lower social integration. This pattern continued across specific domains of cognitive functioning, including lower risk of orientation impairment, executive function impairment, and memory impairment for those with higher social integration. Tests of both gender and racial interactions did not yield any significant differences. Our findings demonstrate the strong association between social integration and lower risk of dementia among older adults. This study can speak to policy makers as the life expectancy of Americans increases and the aging population grows, highlighting the importance of giving support to older adults who are lack of social connectedness.