Grandparenting can be a rewarding and health-promoting experience for older adults. However, grandparent-caregivers often experience greater stress and poorer health relative to non-caregiving grandparents. Further, little is known about grandparents caring for a child with a rare, chronic illness. This study aimed to extend knowledge of the expectations, roles, and experiences of grandparents providing care to a child affected with an inherited metabolic condition. The sample included 23 grandparent-mother dyads from the Inherited Diseases, Caregiving, and Social Networks Study. The grandparent sub-sample ranged from 49 to 79 years of age (Mage = 64), the majority were female (83%) and married (74%), and almost half (48%) were retired. Social network assessments were analyzed to determine concordance between mother- and grandparent-reports of grandparents’ role in the child’s caregiving network. Fifteen mother-grandparent dyads (65%) agreed on grandparents’ role in the child’s network, with the majority of those (93%) considering the grandparent to be very close and important (versus less close or excluded from the caregiving network). Grandparents whose self-reports of their role in their child’s caregiving networks were consistent with mother-reports appeared more likely to report that they spend enough time caregiving than those whose reports were inconsistent. Content analysis of grandparents’ interviews provided supporting information about the joys and regrets of their grandparenting experience and perspectives on caregiving expectations. This research leverages multi-informant social network and qualitative data to illuminate grandparents’ role in the caregiving networks of chronically ill children and adaptation to non-normative grandparenting experiences.

ADULT DAY HEALTH SERVICES ATTENDANCE IS LINKED TO A REDUCTION IN LONELINESS

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Loneliness is the subjective experience of inadequate social contact, and it is linked to numerous detrimental psychological and medical outcomes like depression, cognitive decline, sleep fragmentation, metabolic syndrome, diminished immune functioning, and morbidity. Older adults with cognitive impairment and/or other comorbidities are at greater risk for loneliness due to diminishing social roles, functional status, and death of peers. They are often encouraged to attend adult day services to engage in an environment of socialization and supported activities, and in the case of adult day health services, additional medical services such as physical therapy, skilled nursing care, medical management, and nutritional counseling. In this study we examined whether attending adult day health services (ADHS) at least once a week would be associated with decreased levels of loneliness across time. Our data came from a sample of older adults attending ADHS in New York City from 2018-2019 who scored five or greater on the Nursing Facility Level of Care Index, which is a score derived from assessments of cognition, communication and vision, mood and behavior, functional status, continence, and nutritional status from the Uniform Assessment System in New York (UAS-NY). We found that attendance was linked with fewer reports of loneliness across time, Σ2(1, N=563) = 21.33, p<.001. These results highlight the importance of attending adult day health services for people with a complex health status and the potential role ADHS may play in reducing loneliness in a vulnerable population.

DISPARITIES IN HEALTH STATUS, HEALTH BEHAVIORS AND PREVENTIVE HEALTH SERVICES OF OLDER ADULTS WITH DIABETES

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The prevalence of diabetes among older adults has increased substantially and health complications resulting from diabetes have significant adverse effects on health status of older adults. While diabetes cannot be cured, it can be managed successfully with healthy lifestyle choices. The purpose of this study is to examine the disparities in health status, health behaviors, and preventive health services for older adults with diabetes. This study used data from the 2018 Behavioral Risk Factor Surveillance System. The sample included older adults 50 and over. Health behaviors included exercise, smoking, and heavy alcohol drinking. Preventive health services included dental visit, flu shot, and colorectal cancer screening. Chi-Square analysis and weighted multivariate logistic regression was performed. Not surprisingly, older adults with diabetes were significantly more likely to be in poor health than those without diabetes. Compared to non-diabetic group, older adults with diabetes were more likely to have had no exercise in the previous month. Interestingly, more older adults with diabetes reported having visited dentist, had flu shot and colonoscopy than those without diabetes. In both groups, older adults who presented health behaviors and received preventive health services were more likely to report good health compared to those who did not. The results suggest that further efforts are needed to address the health disparities for older adults with diabetes. Given the risk of comorbidities and its complications for older adults with diabetes, further research should be directed toward designing better health promotion programs and policies for older adults with diabetes.

COMPENSATION EFFECT OF MORTALITY: A CHALLENGE TO LIFE EXTENSION

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In order to develop genuine anti-aging interventions it is important to find the best estimate of the aging rate in humans, which is often measured as a slope parameter of the Gompertz law. The compensation effect of mortality (CEM), refers to mortality convergence, when higher values for the slope parameter are compensated by lower values of the intercept parameter (initial mortality) in different populations of a given species. The age of this convergence point is called the "species-specific life span". Due to CEM, factors associated with life span extension are usually accompanied by paradoxical increase in actuarial aging rate. We evaluated the stability of CEM by analyzing the United Nations abridged life tables for 241 countries and regions and estimating parameters of the Gompertz-Makeham model using method
of non-linear regression in the age interval 30-80 years. We found that the species-specific lifespan is equal to 94.5 ± 0.5 years, which is the same as reported in the past for years before the 1960s: 95 ± 3 years (Gavrilov, Gavrilova, 1991). Thus, the convergence point of CEM is stable despite significant mortality decline over past 50 years and is not affected by factors decreasing mortality at younger ages. Populations deviating from CEM with apparently slow aging (with both slow actuarial aging rate and low intercept parameter) have been identified. The existence of CEM in mice (ITP data) allowed us to find interventions that are able to both extend lifespan and slow the actuarial aging rate giving promise for radical life extension.

SOCIAL ISOLATION, LONELINESS, AND CAREGIVER BURDEN AMONG PAID AND UNPAID CAREGIVERS OF HOMEBOUND OLDER ADULTS

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Caregivers of homebound older adults may have high levels of burden and more vulnerability to social isolation and loneliness, given that their care recipients are more physically frail and isolated. Existing literature has not fully investigated differences between paid and unpaid caregiver burden or their experiences of social isolation. We interviewed paid (n=21) and unpaid family caregivers (n=22) of homebound older adults in a hospital-affiliated geriatric house call program. We used validated survey instruments to measure social isolation, loneliness, and caregiver burden, and semi-structured interviews to solicit qualitative data. In our sample, 42% of caregivers helped with 5+ ADLs and 58% with 5+ iADLs. Using the Caregiver Burden Inventory, burden types between caregivers were compared with chi-squared tests. Compared to paid caregivers, unpaid family caregivers experienced more “developmental” burden such as “missing out on life” (p<0.01). Paid caregivers exhibited more “time” burden, such as “not having a minute’s break from caregiving responsibilities” (p<0.01). 44% of caregivers were considered socially isolated according to the Berkman-Syme Social Index. However, using the UCLA 3-item Loneliness Scale, few caregivers felt lonely (14%). Thematic analysis revealed that family caregivers desired support groups but time pressures limited their participation (23%). Interestingly, smart phones were regularly cited as a tool for alleviating loneliness for paid caregivers when alone on the job (19%), a novel finding. Findings suggest that caregivers of the chronically ill and physically isolated may be at particular risk of social isolation. Network based social support interventions may mitigate some of these vulnerabilities.

MICROGLIA MAY INSTRUCT SYNAPTIC FATE VIA SIRPα IN MOUSE RETINA

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As we age, our nervous system undergoes many deleterious alterations: cognitive and sensory functions decrease while the risk of disease increases. Synapses are responsible for neural information processing, and the decline of these structures via microglia-mediated remodeling is thought to underlie many age-related neural changes. However, the molecular pathways responsible for microglia-mediated synapses removal in development and old age remain unknown. To begin to elucidate these pathways, we leveraged the precisely organized murine retina where neurons form synapses in distinct lamina. Using this system, we screened 102 lacZ reporter lines available through the Knockout Mouse Project (KOMP) and uncovered a unique synapse regulatory candidate, SIRPα. We show that SIRPα is present in microglia prior to synapse formation but becomes selectively enriched in neural synapse terminals as these connections mature. Further, the levels of SIRPα decrease in the context of age-related neural decline. In ongoing studies, we are testing the hypothesis that neuronal SIRPα regulates its receptor CD47 to modulate refinement by microglial SIRPα. Together, these studies will resolve the molecular cues through which microglia prune synapses in development and dissect how these programs may go awry in the context of aging and disease.

PEOPLE LIVING WITH PARKINSON DISEASE WITH AND WITHOUT FREEZING: DIFFERENCES USING THE NEURO-QOL MEASUREMENT SYSTEM

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Parkinson disease (PD) is the second most common neurodegenerative disease and approximately half of those diagnosed with PD will experience freezing of gait (FOG). FOG is a severe motor disturbance that prevents stepping despite the intention to do so and may be associated with anxiety, decreased cognitive functioning, depression, and poorer quality of life. In this study, we administered the short-form