

INTERACTIONS BETWEEN GENES FROM AGING-RELATED PATHWAYS: IMPACT ON HUMAN LONGEVITY

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Role of genetic interactions (GxG) in human longevity remains poorly understood. We hypothesized that GxG between genes from biologically connected pathways involved in aging may impact longevity. To test this hypothesis, we selected 53 candidate genes from the aging-related pathways (IGF-1/AKT/FOXO3A, TP53/P21/P16, and mTOR/S6K mediated) that are known to jointly influence outcomes of cell responses to stress and damage, such as apoptosis, senescence, growth/proliferation, and autophagy. We evaluated the effects of interactions between SNPs in these genes on longevity in LLFS and CARE data. RESULTS: The IGF1R, PPARGC1A and BCL2 genes were consistently involved in top GxG effects ($p < 10^{-6}$) on survival in the oldest old (85+ and 95+). One SNP, rs2970870 in PPARGC1A gene, was broadly involved in significant interaction effects on survival 96+ ($p < 10^{-7}$) when paired with SNPs in IGF1R and NFKB1 genes. This SNP individually was associated with survival with nominal significance only; therefore, it would have not been selected in a GWAS. We conclude that interactions between genes from aging-related pathways that regulate cell responses and resilience to damage may have major impact on human longevity and contribute to its genetic heterogeneity. The research was supported by the NIA/NIH grants R01AG062623, U19AG063893, P01AG043352.

SOCIAL FRAILTY IN RECENTLY RELOCATED SEMI-INDEPENDENT OLDER ADULTS

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Although most older adults live outside of care institutions, not all seniors choose to live in traditional family homes. Among those who relocate, some relocate too early while others are pre-frail or frail when they relocate. Social frailty – the interaction between social vulnerability and frailty – could contribute to these untimely relocations. The goal of this study was to inform the concept of social frailty by examining a population of semi-independent older adults who recently relocated to a continuum of care community. The objectives of this study were to: 1) understand the influence of the social determinants of health on the relocation process; 2) explore whether relocation increases or reduces social frailty; and 3) measure the level of post-relocation frailty in

study participants. This mixed method study combined semi-structured interviews on the relocation process, the frailty identification tool PRISMA-7, and socio-demographic surveys. Twenty-nine recently relocated seniors were recruited with the assistance of a Citizens' Advisory Committee along with advertisements, presentations, information booths, and word of mouth. Qualitative descriptive thematic analysis and descriptive statistical analyses were used to examine the relationship between frailty, socio-demographic variables and relocation. Findings indicated that several social determinants contributed to frailty and that relocation into a continuum of care community could mitigate some aspects of social frailty. A conceptual framework on the influence of social frailty on relocation is discussed. More research is needed to inform the concept of social frailty and to better understand the impact of social factors on frailty.

THE EFFECT OF ACTIVITIES OF DAILY LIVING ON FAMILY CAREGIVER SOCIAL ISOLATION

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Social isolation has been shown to associate with negative health outcomes including depression and stress. For family caregivers of older adults, the demands on the caregiver often are associated with increasing feelings of loneliness and decreased social contact. The degree to which the caregiver's social isolation is related to the complexity of the caregiving situation remains unknown. Through a cross-sectional analysis of 526 family caregivers from the Family Caregiver Alliance client record database, an association has been established between care recipient functional decline and caregiver social isolation. Social isolation was measured through the Lubben Social Network Scale and functional decline was measured through ADL/IADL reporting. Covariates controlled for in the analysis included caregiver ethnicity, duration of caregiving, adult child status, caregiver education, care recipient income, and hours per week caregiving. Family caregivers of care recipients with higher functional decline experienced elevated odds of social isolation as compared to family caregivers of care recipients with little to no functional decline. The results from this study highlight the need for medical personnel and non-profit actors to anticipate social isolation as a risk factor for family caregivers of older adults given the care recipient is experiencing functional decline.

WHAT CONSUMERS SAY ABOUT HOSPICES IN ONLINE REVIEWS

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Until recently, consumers have had limited resources to assess quality of hospices agencies, contributing to growing numbers of consumers turning to online review sites, such as Yelp. Yet little is known about the content of hospice Yelp reviews and how these relate to recently available Center for Medicare and Medicaid Services'

Hospice Compare site data. No study has examined Yelp hospice reviews and compared the themes identified in Yelp reviews to the topics addressed by CMS's HC measures. To better understand how consumers perceive hospice care, we drew a purposeful sample of 67 hospices in California. Researchers used grounded theory to identify themes and categories within the hospice reviews. Each of two teams of two researchers independently coded the reviews and then met to compare coding and reconcile discrepancies until 100% consensus was reached. We coded a total of 692 consumer Yelp reviews, identifying 15 themes and grouping them under five overarching thematic categories: patient/caregiver-provider relationship; clinical care; agency competency; staff professionalism; and medical equipment and supplies. We found that overall Yelp comments were positive. The most frequently mentioned Yelp themes in hospice reviews were compassionate, caring staff; patient/family gratitude; and staff responsiveness. There was considerable overlap between the themes captured in HC caregivers survey items and Yelp. However, Yelp reviews cover a greater number and more diverse themes than those measures reported on the CMS Hospice Compare site. We recommend that consumers consider both HC and online review sites such as Yelp when evaluating a hospice.

PHYSICAL ACTIVITY IN EARLY AND MIDDLE ADULTHOOD PREDICTS LATER-LIFE MEMORY TRAJECTORIES VIA HEALTH PATHWAYS

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Physical inactivity measured during late-life is a modifiable risk factor for dementia, but many studies use concurrent assessments with limited longitudinal follow-up. Less is known regarding life course exposure to physical inactivity. Physical activity patterns at different ages may make independent contributions to dementia risk, which would point to multiple critical periods for intervention. Using Health and Retirement Study Life History Mail Survey data (N=4,396), latent growth curves tested whether retrospectively-reported activity in early (18-29 years) and middle (40-49 years) adulthood predicted later-life memory trajectories over 18 years (mean age at study entry = 60.56 ± 5.44; mean follow-up = 13.27 ± 4.03 years). Total metabolic equivalents were computed from reports of moderate and vigorous physical activity. Biennial memory performance was modeled from study entry (between 1996 and 2014) to 2014. Self-reported physical and mental health at study entry were modeled as independent mediators. Models were adjusted for age at study entry, sex, education, race, ethnicity, childhood socio-economic status, year of study entry, and year of mail survey enrollment. More physical activity at ages 18-29 and 40-49 were independently associated with better initial memory, but not subsequent memory change. The association between physical activity at ages 40-49 and initial memory was partially mediated by better mental and physical health. These observational results support the possibility that physical activity interventions during multiple stages of the adult life course might be effective at lowering dementia risk. In particular, mid-life physical activity may have broad effects on later mental, physical, and cognitive health.

CONSCIENTIOUSNESS, ACTIVITY ENGAGEMENT AND MOMENTARY AFFECT IN OLDEST-OLD ADULTHOOD

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Participation in meaningful activities may be particularly important for late life well-being. We examined associations of moment to moment variability in meaningful activity engagement with positive and negative affect in the daily lives of oldest-old adults. Moderating effects of conscientiousness on meaning-affect associations were also examined considering recent theorising that late life declines in conscientiousness could reflect adaptive self-regulatory processes. Participants were 73 adults aged 84 and above from the Australian Longitudinal Study of Aging Daily Life Time-Sampling (ADuLTS) study, who provided self-report data on activity engagement (including ratings of meaning and degree of challenge associated with activities) and affect on five occasions per day over seven days. Within-person variability in meaningful activity engagement was associated with positive and negative affect; however, these associations were conditional upon the extent to which activities were rated as challenging. Specifically, positive affect tended to be lower on occasions when activities were rated as less meaningful, but also more challenging. Similarly, negative affect was rated as lower on occasions when activities were regarded as more meaningful, and at the same time less challenging. Participants who were higher in conscientiousness reported higher overall positive affect, and associations of higher conscientiousness with lower momentary negative affect were evident on occasions when activities were rated as more challenging. Engagement in meaningful activity is associated with higher positive, and lower negative affect in late life, with these associations dependent on the extent to which activities are challenging. Findings are discussed in the context of self-regulatory perspectives on adaptation.

ANALYSIS OF THE EFFECTS OF SOCIAL CAPITAL ON SMOKING BEHAVIOR AMONG OLDER ADULTS IN CHINA

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By 2030, China will become the most aging country in the world. At the same time, China is the world's largest producer and consumer of tobacco, also the largest victim of tobacco. Tobacco exposure is one of the most important risk factors for many chronic non-communicable diseases among older adults. Based on the data from China Health Retirement Longitudinal Study(2011&2015), we aim to analyze the effects of base-period social capital on current smoking behaviors among Chinese older adults of 60 and above (N=7686) with univariate analysis and ordered logit model. Results show that, older adults with high social trust (OR=0.783) preferred to choose not to smoke; those who had emotional support (OR=0.933) and financial support (OR=0.967) would be more possible to choose not to smoke; and older adults were more likely to choose heavy smoking if they had