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Contents

ABSTRACTS

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BIOLOGY AND PHYSIOLOGY

Functional States

0909

Graney, Marshall J., and Veronica F. Engle. Stability of performance of activities of daily living using the MDS. *The Gerontologist* 40(5):582-586, Oct. 2000.

ACTIVITIES OF DAILY LIVING. MINIMUM DATA SET. NURSING HOMES. TASK PERFORMANCE.

The Minimum Data Set (MDS) requires assessment of performance of activities of daily living (ADLs) by newly admitted nursing home residents over all shifts for a 7-day period for a total of 21 assessments. This study evaluated within-subject equivalence of multiple assessments of 42 residents' admission MDS ADL performance. Friedman two-way analysis of variance for ranks documented no significant within-subject differences among repeated measurements for all 13 MDS ADL variables. Thus, fewer than 21 assessments may accurately assess ADL performance.

0910

Lisse, Jeffrey, et al. Functional status and health-related quality of life of elderly osteoarthritic patients treated with celecoxib. *Journal of Gerontology: Medical Sciences* 56A(3):M167-M175, March 2001.

CELECOXIB. FUNCTIONAL STATE. MEDICATION. OSTEOARTHRITIS. QUALITY OF LIFE.

This study evaluates the impact of celecoxib on functional status, health-related quality of life (HRQOL), and safety of elderly patients (> 70 years) with osteoarthritis (OA) of the knee and/or hip. Data were pooled from three prospective, randomized, multicenter, double-blind, parallel group trials, each having a 12-week treatment period. Multicenter studies were conducted in the United States and Canada. Data for patients diagnosed with active OA of the knee and/or hip in a flare state who were 70 years of age and older were included in the comparison of therapeutic doses of celecoxib or naproxen versus placebo (N = 768). Elderly patients from each of the three trials who were randomly assigned to groups treated with a placebo, 200 mg/day of celecoxib, 400 mg/day of celecoxib, or 1,000 mg/day of naproxen were included in this analysis. The Western Ontario and McMaster Universities Osteoarthritis Index was used to measure functional status. The Short Form–36 was used as a general measure of HRQOL. Safety was assessed according to the incidence and type of adverse reactions as reported by the patients and the rate of withdrawal due to adverse events. At the end of the treatment period, patients in the celecoxib groups had significant improvement in both functional status and HRQOL in comparison with the placebo group. The effects of total daily doses of 200 mg of celecoxib, 400 mg of celecoxib, and 1,000 mg of naproxen on functioning and HRQOL were not found to be significantly different from each other. The incidence of serious adverse events and withdrawal from the studies due to adverse events were similar in the celecoxib groups as they were in the placebo group. Overall, the naproxen group reported a significantly higher incidence of gastrointestinal adverse events than did the placebo and the 200 mg-daily celecoxib groups. This study showed that celecoxib and naproxen significantly improved functional status and HRQOL in elderly patients compared with those treated with a placebo. Celecoxib-treated patients were also found to experience safety and tolerability similar to that of the placebo-treated patients.

0911

Porell, Frank W., and Helen B. Miltiades. Access to care and functional status change among aged Medicare beneficiaries. *Journal of Gerontology: Social Sciences* 56B(2):S69-S83, March 2001.

CAREGIVING. FUNCTIONAL STATE. HEALTH INSURANCE. MEDICARE.

This study examined whether the extra-individual factors of better access to care and supplementary health insurance coverage can prevent, delay, or reverse transitions from functional independence to disability over time. Six years of the Medicare Current Beneficiary Survey were pooled, yielding 40,793 transition periods for community residents aged 66 or older. Multinomial logit models of transitions among functional states were estimated, with functional improvement, functional decline, and mortality as outcomes. Insurance coverage and better access to care increased survival chances and reduced the odds of transitions from independence to disability by roughly 30%. Access and supplementary insurance did not appear to affect transitions from less disabled to more disabled states or affect functional improvement. The findings support the hypothesized role of extra-individual environmental factors in Verbrugge and Jette's conceptual scheme of the disablement process. Access to care is suggested to make the most difference in delaying or slowing down functional decline among functionally independent elderly persons. Transitions from less severe to more severe states of disability or to death appear to be influenced more by the natural course of chronic diseases, underlying health status, and medical instability.

0912

Sarkisian, Catherine A., et al. Modifiable risk factors predict functional decline among older women: a prospectively validated clinical prediction tool. *Journal of the American Geriatrics Society* 48(2):170-178, Feb. 2000.

FUNCTIONAL DECLINE. PREDICTIVE VALIDITY. RISK ANALYSIS. WOMEN.

This study sought to identify modifiable predictors of functional decline among community-residing older women and to derive and validate a clinical prediction tool for functional decline based only on modifiable predictors. The design was a prospective cohort study. Setting: Four geographic areas of the United States. Participants were community-residing women older than age 65 recruited from population-based listings between 1986 and 1988 ($N = 6,632$). Modifiable predictors were considered to be those that a clinician seeing an older patient for the first time could reasonably expect to change over a 4-year period: benzodiazepine use, depression, low exercise level, low social functioning, body-mass index, poor visual acuity, low bone mineral density, slow gait, and weak grip. Known predictors of functional decline unlikely to be amenable to intervention included age, education, medical comorbidity, cognitive function, smoking history, and presence of previous spine fracture. All variables were measured at baseline; only modifiable predictors were candidates for the prediction tool. Functional decline was defined as loss of ability over the 4-year interval to perform one or more of five vigorous or eight basic daily activities. Slow gait, short-acting benzodiazepine use, depression, low exercise level, and obesity were significant modifiable predictors of functional decline in both vigorous and basic activities. Weak grip predicted functional decline in vigorous activities, whereas long-acting benzodiazepine use and poor visual acuity predicted functional decline in basic activities. A prediction rule based on these eight modifiable predictors classified women in

the derivation set into three risk groups for decline in vigorous activities (12%, 25%, and 39% risk) and two risk groups for decline in basic activities (2% and 10% risk). In the validation set, the probabilities of functional decline were nearly identical. A substantial portion of the variation of functional decline can be attributed to risk factors amenable to intervention over the short term. Using eight modifiable predictors that can be identified in a single office visit, clinicians can identify older women at risk for functional decline.

0913

Scialfa, Charles T., and Eleanor Hamaluk. Aging, texture segmentation, and exposure duration: evidence for a deficit is preattentive processing. *Experimental Aging Research* 27(2):123-135, April-June 2001.

AGING. ATTENTION STRUCTURE. COGNITIVE PROCESSES. EXPERIMENTAL RESEARCH. VISUAL PERCEPTION.

Younger and older observers were asked to detect the presence and identify the orientation of an orientation-based texture target presented at durations ranging from 15 to 75 ms. In Experiment la, an Age by Duration interaction indicated that older adults were less able to process the displays at short durations. In Experiment 1b, a group of younger adults was given the task under conditions designed to simulate age related changes in retinal illuminance. Their performance was independent of luminance and was still superior to that of older adults in Experiment la. Several mechanisms are potential contributors to these age deficits in lower-level processing that can influence higher-level visual perception.

Human Physical Change

0914

Martin, James A., and Joseph A. Buckwalter. Telomere erosion and senescence in human articular cartilage chondrocytes. *Journal of Gerontology: Biological Sciences* 56A(4):B172-B179, April 2001.

BIOLOGICAL AGING. HUMAN ARTICULAR CARTILAGE CHONDROCYTES. OSTEOARTHRITIS. SENESCENCE.

Aging and the degeneration of articular cartilage in osteoarthritis are distinct processes, but a strong association exists between age and the incidence and prevalence of osteoarthritis. We hypothesized that this association is due to in vivo replicative senescence, which causes age-related declines in the ability of chondrocytes to maintain articular cartilage. For this hypothesis to be tested, senescence-associated markers were measured in human articular chondrocytes from donors ranging in age from 1 to 87 years. These measures included in situ staining for senescence-associated B-galactosidase activity, ^{3}H-thymidine incorporation assays for mitotic activity, and Southern blots for telomere length determinations. We found that senescence-associated β-galactosidase activity increased with age, whereas both mitotic activity and mean telomere length declined. These findings indicate that chondrocyte-replicative senescence occurs in vivo and support the hypothesis that the association between osteoarthritis and aging is due in part to replicative senescence. The data also imply that transplantation procedures performed to restore damaged articular surfaces could be limited by the inability of older chondrocytes to form new cartilage after transplantation.

0915

Russell-Aulet, Mary, et al. Aging-related growth hormone (GH) decrease is a selective hypothalamic GH-releasing hormone pulse amplitude mediated phenomenon. *Journal of Gerontology: Medical Sciences* 56A(2):M124-M129, Feb. 2001.

AGING. ENDOCRINOLOGY. GROWTH HORMONE.

Aging is accompanied by declining growth hormone (GH) and insulin-like growth factor-I (IGF-I) levels. The neuro-endocrine mechanisms of this decline have been studied previously, but the interpretation of the data was confounded by the imprecision in GH measurements and by the intervening variables of altered body composition and decreased gonadal steroid milieu in the elderly subjects of both sexes. To study the contribution of aging per se, we evaluated discrete parameters of GH pulsatility in young ($N = 8$ women, $N = 8$ men) and elderly ($N = 11$ women, $N = 10$ men) subjects closely matched for body mass index. Blood samples for GH were obtained every 10 minutes for 24 hours. Plasma GH was measured by a sensitive chemiluminescent assay. GH pulsatility was assessed using cluster analysis. The elderly subjects had plasma IGF-I levels and integrated GH concentrations that were 32% to 56% of their sex-matched younger counterparts. The age-associated attenuation in GH was due to a decrease in GH pulse amplitude, whereas pulse frequency and nadir levels were unchanged. The majority of the young subjects (81%) reached their peak GH during the "lights off" period, whereas the majority of the elderly subjects (62%) peaked during the "lights on" period ($p = .01$). We conclude that aging in both sexes is accompanied by profound decreases in GH output and in plasma IGF-I concentrations. This effect is separate from the alterations in body mass index that accompany the normal aging process. Attenuation of GH output associated with aging is related solely to the lower GH and, by inference, GH-releasing hormone (GHRH) pulse amplitude.

Physical Change in Experimental Animals

0916

Beharka, Alison A., et al. Interleukin-6 production does not increase with age. *Journal of Gerontology: Biological Sciences* 56A(2):B81-B88, Feb. 2001.

AGE DIFFERENCES. AGING. ELDERLY. INTERLEUKIN-6. MIDDLE-AGED ADULTS. YOUNG ADULTS.

Investigators have reported an increase, decrease, or no effect of age on interleukin-6 (IL-6) production. Differences in experimental conditions and the health status of subjects may explain these contradicting results. Because the subjects used in most of the previous studies were not carefully screened for health, we investigated the effect of age on IL-6 production in healthy young and elderly subjects. Twenty young (aged 20-30 years) and 26 elderly (> 65 years) men completed the study. Each subject was screened for good health, undergoing physical examinations and laboratory tests. Circulating IL-6 levels were not significantly different between young and elderly subjects. A subgroup of subjects representing both young and elderly volunteers had high (> 1000 pg/ml) circulating levels of IL-6. However, circulating IL-6 levels were low (< 100 pg/ml) in the majority of subjects in both age groups. Peripheral blood mononuclear cells (PBMC) were cultured for IL-6 production in the presence or absence of phytohemagglutinin (PHA) or concanavalin (Con) A for 48 hours. Unstimulated secretion of IL-6 by PBMC cultured in autologous plasma (AP) or fetal bovine serum (FBS) was detectable in the majority of cultures. Age did not influence this spontaneous secretion of IL-6. PBMC stimulation with

PHA or ConA significantly increased IL-6 production, but age did not affect the ability of PBMC to secrete IL-6 after stimulation when cultured in FBS. IL-6 production by PBMC cultured in AP and stimulated with PHA was not affected by age. However, when stimulated with ConA, PBMC from the elderly subjects produced less IL-6 than PBMC from the young subjects. Because IL-6 has been suggested to contribute to the age-related increase in prostaglandin (PG)E_2 and nitric oxide (NO) production, we investigated the effect of age on the production of IL-6 by murine peritoneal macrophages (Mϕ) as well as the effect of IL-6 on the production of other Mϕ inflammatory products. Similar to the findings in humans, mouse age did not influence the level of IL-6 produced by Mϕ. These data suggest that in healthy subjects, increased production of IL-6 is not a normal consequence of aging. Previously reported higher IL-6 levels in elderly subjects might reflect an underlying, undiagnosed disease state. PGE_2 and NO production were not affected by the addition of IL-6 to Mϕ from young mice or anti-IL-6 antibody to Mϕ from old mice. Thus, IL-6 does not appear to influence the Mϕ production of selected inflammatory molecules.

0917

Brooks, Susan V., Julie A. Opiteck, and John A. Faulkner. Conditioning of skeletal muscles in adult and old mice for protection from contraction-induced injury. *Journal of Gerontology: Biological Sciences* 56A(4):B163-B171, April 2001.

AGING. EXPERIMENTAL MICE. HUMAN SPECIES. SKELETAL MUSCLES.

The purpose of this study was to design a conditioning program that protected muscles in both adult and old mice from a protocol of contractions that previously caused a significant number of damaged fibers and a deficit in force. Hind-limb dorsiflexor muscles of adult (7 months) and old (22 months) female B6D2F1 mice were exposed once a week to a protocol of repeated forced stretches while maximally activated in vivo. By week 4, muscles of adult, but not old, mice showed no force deficit. Conditioning was continued for 6 weeks, when both age groups showed no force deficit for two consecutive weeks. Three days after the sixth contraction protocol, when morphological damage and force deficits are most severe, the numbers of damaged fibers in muscles of adult and old mice were not different from those in uninjured control muscles, and the force deficits were reduced dramatically compared with unconditioned muscles. We conclude that muscles of both adult and old mice conditioned successfully, but muscles of old mice conditioned more slowly than those of adult mice.

0918

Carey, James R., et al. Female sensitivity to diet and irradiation treatments underlies sex-mortality differentials in the Mediterranean fruit fly. *Journal of Gerontology: Biological Sciences* 56A(2):B89-B93, Feb. 2001.

FEMALE FRUIT FLIES. MEDITERRANEAN FRUIT FLIES. MORTALITY RATES. NUTRITIONAL STATUS.

Large-scale experiments on medflies that were subjected to sterilizing doses of ionizing radiation (plus intact controls) and maintained on either sugar-only or full protein-enriched diets revealed that, whereas the mortality trajectories of both intact and irradiated male cohorts maintained on both diets are similar, the mortality patterns of females are highly variable. Mean mortality rates at 35 days in male cohorts ranged from 0.2 to 0.3 but in female cohorts ranged from 0.09 to 0.35, depending on treatment. The study reports three main influences: (a) qualitative differences exist in

the sex-mortality response of medflies subjected to dietary manipulations and irradiation, (b) the female mortality response is linked to increased vulnerability due to the nutritional demands of reproduction, and (c) female sensitivity to environmental changes underlies the dynamics of the sex-mortality differential.

0919

Ding, Hu, and Steven D. Gray. Senescent expression of genes coding collagens, collagen-degrading metalloproteinases, and tissue inhibitors of metalloproteinases in rat vocal folds: comparison with skin and lungs. *Journal of Gerontology: Biological Sciences* 56A(4):B145-B152, April 2001.

AGING. BIOLOGICAL AGING. EXPERIMENTAL RATS. GENETICS. SENESCENCE.

In humans, vocal tissue stiffness increases with age, suggesting a possible contribution of age-associated variations in vocal fold collagen turnover to voice senescence. The underlying mechanisms remain to be explored. With the use of reverse-transcriptase polymerase chain reaction (RT–PCR), collagen subtypes expressed in rat vocal folds were determined, and messenger RNA (mRNA) levels of collagens (types I, III, IV, and V), collagen-degrading proteinases (collagenase 3, gelatinase A and B), and tissue inhibitors of metalloproteinases (TIMP-1 to TIMP-4) were measured in vocal folds of neonatal, adult, and elderly rats. Collagens I, III-VIII, XV, XVII, and XVIII are abundantly expressed, whereas collagens II, IX, X, and XI are absent in rat vocal folds. Messenger RNA levels of collagens I, III, IV, and V and collagen-degrading proteinases in the vocal folds of the adult rats are significantly lower than those in the neonates. These mRNA levels show further decline in the vocal folds of the elderly rats, but only the decrease in mRNA levels of collagens I and V significantly differ from the adult levels. There are no marked age-related alterations in vocal fold levels of TIMP mRNAs, and the tissue variation in the gene expression of the aforementioned molecules is minute. Rat vocal folds display tissue-specific expression of collagen genes. Diminished gene expression for collagens and proteinases and unchanged gene expression for TIMPs indicate a slowdown in collagen turnover that may increase the cross-linking of collagen molecules. This observation may explain in part the stiffness that occurs with aging in human vocal folds.

0920

Hauck, Steven J., and Andrzej Bartke. Free radical defenses in the liver and kidney of human growth hormone transgenic mice: possible mechanisms of early mortality. *Journal of Gerontology: Biological Sciences* 56A(4):B153-B162, April 2001.

BIOLOGICAL AGING. EXPERIMENTAL RESEARCH. HUMAN GROWTH HORMONE. LIVER. KIDNEYS.

The long-term effects of growth hormone (GH) administration are unknown. Although limited data on its short-term effects purport health benefits, numerous detrimental effects are the consequence of chronically elevated GH. We used spectrophotometric assay and Western blot to determine the effects of chronic GH excess on hepatic and renal antioxidant enzymes (AOEs) in young and middle-aged PEPCK (phosphoenolpyruvate carboxykinase) hGH (human GH) transgenic mice. In the liver, glutathione peroxidase (GPx) was reduced in transgenics of both age groups, catalase was reduced only in young transgenics, and Cu-Zn superoxide dismutase (SOD) was similar to normal mice but declined with age. In all groups, hepatic AOE activity correlated significantly with AOE level. In the kidney, AOEs in young transgenics were similar to those of normal mice. However, middle-aged transgenics

showed reduced renal SOD and GPx activities when compared with young transgenic or middle-aged normal mice. Similarly, renal SOD and GPx levels in middle-aged transgenics were reduced when compared with those of middle-aged normal mice. AOE activity in the kidney correlated significantly with AOE protein level among middle-aged animals only. These data suggest the following: (1) GH excess is associated with early declines in SOD and GPx in the kidney and reductions of hepatic GPx at all ages examined, perhaps increasing the risk of free radical-induced damage to these tissues; (2) in the liver of young animals and in the liver and kidney of middle-aged animals, AOE activity reflects the amount of enzyme protein; and (3) age-related reductions in GPx in transgenics may be related to the increased incidence of liver tumors and renal failure in these animals.

0921

Norton, Margaret W., Walter Mejia, and Roger J.M. McCarter. Age, fatigue, and excitation-contraction coupling in masseter muscles of rats. *Journal of Gerontology: Biological Sciences* 56A(2):B58-B65, Feb. 2001.

AGE DIFFERENCES. AGING. EXPERIMENTAL RATS. MASSETER MUSCLES.

The purpose of this study was to determine if masseter muscle endurance changes with increasing age and, if so, to examine mechanisms of fatigue. Characteristics of fatigue were measured under isometric conditions using high-frequency stimulation of anterior deep masseter (ADM) muscles of male Fischer 344 rats, 5 to 24 months old and fed a hard (HD) or a soft (SD) diet. Potentiating effects of caffeine on ADM muscle performance in vitro were also examined. Fatigability increased by 48% with age in muscles of HD rats. Muscles of SD rats were highly fatigable at all ages. Increased HD fatigability was associated with significantly decreased concentrations of Na+/K+-adenosine triphosphatase (22%) and decreased responsiveness to caffeine postfatigue (29%). The pH levels decreased similarly in fatigued muscles of all groups. We conclude that the age-related increase in fatigability is associated with alterations in excitation-contraction coupling mechanisms. However, differences between SD and HD on ADM muscles represent possible fiber-type transitions.

0922

Rani, Packiasamy, Juliet Arockia, and Chinnakannu Panneerselvam. Protective efficacy of L-carnitine on acetylcholinesterase activity in aged rat brain. *Journal of Gerontology: Biological Sciences* 56A(3):B140-B141, March 2001.

ACETYLCHOLINESTERASE. BRAIN. EXPERIMENTAL RATS. L-CARNITINE.

The purpose of this research was to study the activity of acetylcholinesterase in various regions of young and aged rat brain before and after L-carnitine supplementation. Two groups of male albino rats were used for this study (4 and 24 months of age). L-carnitine was administered intraperitoneally 300 mg/kg/d using physiological saline as a vehicle for 7, 14, and 21 days. The activity of acetylcholinesterase was measured in the cerebral cortex, the hippocampus, the hypothalamus, the striatum and the cerebellum. Highly significant variation was observed in a duration-dependent manner in the hippocampus, the striatum, and the cortex of aged rats after L-carnitine supplementation when compared with young controls. Our results indicate that treatment of aged rats with L-carnitine restored the level of acetylcholinesterase.

Motor Abilities

0923

Guo, Xinxin, et al. A population-based study on motor performance and white matter lesions in older women. *Journal of the American Geriatrics Society* 48(8):967-970, August 2000.

BRAIN. COMPUTED TOMOGRAPHY. IMPAIRED ELDERLY. PHYSICAL IMPAIRMENT. WHITE MATTER LESIONS.

This study sought to investigate the relationship between motor performance and white matter lesions (WMLs) on computed tomography (CT) of the brain in older women. The design was a cross-sectional, population-based study in Goteborg, Sweden. Participants were a total of 248 women aged 70, 74, and 78 years. Motor performance was measured by a Postural-Locomotion-Manual (PLM) test using an optoelectronic technique. WMLs on CT scans were rated as no, mild, moderate, or severe. White matter lesions were associated with impaired mobility of the lower extremities, that is, prolonged locomotion phase in the PLM test. This association was also present after controlling for age, hypertension, coronary heart disease, stroke, diabetes mellitus, chronic bronchitis, intermittent claudication, and smoking. Cerebral white matter lesions may contribute to motor impairments in older adults.

0924

Hartley, Alan A. Age differences in dual-task interference are localized to response-generation processes. *Psychology and Aging* 16(1):47-54, March 2001.

AGE DIFFERENCES. DUAL-TASK INTERFERENCE. REACTION TIME. TASK PERFORMANCE.

Dual-task differences in younger and older adults were explored by presenting 2 simple tasks, with the onset of the second task relative to the first task carefully controlled. The possibility of an age-related reduction in the ability to generate and execute 2 similar motor programs was explored by requiring either a manual response to both tasks or a manual response to the first and an oral response to the second and was confirmed by the evidence. The age-related interference was greater than would be expected from a general slowing of processing in older adults. The possibility of an age-related reduction in the capacity to process 2 tasks in the same perceptual input modality was explored by presenting both tasks in the visual modality or the first task in the auditory modality and the second task in the visual modality and was not supported by the evidence. There was greater interference when both tasks were in the same modality, but it was equivalent for older and younger adults. Age differences in dual-task interference appear quite localized to response-generation processes.

0925

Krampe, Ralf T., Ralf Engbert, and Reinhold Kliegl. Age-specific problems in rhythmic timing. *Psychology and Aging* 16(1):12-30, March 2001.

AGE DIFFERENCES. ELDERLY. PIANISTS. RHYTHM TASKS. YOUNG ADULTS.

The authors investigated performance in 2 rhythm tasks in young ($M = 23.8$ years) and older ($M = 71.4$ years) amateur pianists to test whether slowing of a central clock can explain age-related changes in timing variability. Successive keystrokes in the

rhythm tasks were separated by either identical (isochronous) time intervals or varying (anisochronous) intervals. Variability was comparable for young and older adults in the isochronous task; pronounced age effects were found for the anisochronous rhythm. Analyses of covariances between intervals rule out slowing of a central clock as an explanation of the findings, which instead support the distinction between target specification, timekeeper execution, and motor implementation proposed by the rhythm program hypothesis (D. Vorberg & A. M. Wing, 1996). Age stability was found at the level of motor implementation, but there were age-related deficits for processes related to target-duration specification.

0926

Mayr, Ulrich. Age differences in the selection of mental sets: the role of inhibition, stimulus ambiguity, and response-set overlap. *Psychology and Aging* 16(1):96-109, March 2001.

AGE DIFFERENCES. INHIBITION. MENTAL STATES. RESPONSE TIME.

Switching between tasks leads to response-time (RT) costs at switch points (local switch costs) and often to RT costs at no-switch transitions that occur in the context of a task-switching block (global set-selection costs). With trial-to-trial cuing of tasks, moderate age effects were obtained for local switch costs, but large age effects were obtained for global selection costs. In Experiment 1, set-specific inhibition was found to be at least as large in old as in young adults, thus ruling out an inhibition deficit as a reason for age differences in global costs. In Experiment 2, large age differences in global costs were limited to conditions of ambiguous stimuli and full response-set overlap. This pattern of results suggests a greater reliance on set-updating processes in old than in young adults. The role of these processes is to ensure unambiguous internal control settings when ambiguity arises from stimuli and response specifications.

0927

Meiran, Nachshon, Alex Gotler, and Amotz Perlman. Old age is associated with a pattern of relatively intact and relatively impaired task-set switching abilities. *Journal of Gerontology: Psychological Sciences* 56B(2):P88-P102, March 2001.

AGING. IMPAIRED ELDERLY. PHYSICAL IMPAIRMENT. TASK PERFORMANCE. TASK SET SWITCHING.

In three experiments, we examined the effects of old age on the reaction time (RT) decrement associated with task alternation. Old age was associated with increased mixing-cost, which is the RT difference between two conditions: mixed-task, where trials involving two tasks were intermixed, and single-task, where all the trials involved the same task. Old age was also associated with an increased switching-cost, which is the RT difference between trials in which the task was just changed and trials in which it was repeated. There was also indication of a slowed passive dissipation of task set adopted in the preceding trial. In contrast to these impairments, old age was also associated with an almost intact ability to prepare for an upcoming task switch. This ability was indicated by a normal reduction in switching cost due to an increase in the time allowed to prepare for the switch. We discuss the implications of the results in relation to theories of task-switching and to the underlying brain mechanisms, especially with respect to the effect of old age on the prefrontal cortex.

Genetics of Aging

0928

Fozmorov, Igor, Andrzej Bartke, and Richard A. Miller. Array-based expression analysis of mouse liver genes: effect of age and of the longevity mutant *Prop1*^{df}. *Journal of Gerontology: Biological Sciences* 56A(2):B72-B80, Feb. 2001.

AGING. EXPERIMENTAL MICE. GENETICS. LIVER. LONGEVITY.

Ames dwarf mice, homozygous for the *df* allele at the *Prop1* locus, live 40% to 70% longer than nonmutant siblings and represent the first single-gene mutant that extends life span in a mammal. To gain insight into the basis for the longevity of the Ames dwarf mouse, we measured liver mRNA levels for 265 genes in a group of 11 dwarf mice (three to four mice per age group) at ages 5, 13, and 22 months, and in 13 age- and sex-matched control mice. The analysis showed seven genes where the effects of age reach $p < .01$ in normal mice and six others with possible age effects in dwarf mice, but none of these met Bonferroni-adjusted significance thresholds. Thirteen genes showed possible effects of the *df/df* genotype at $p < .01$. One of these, insulin-like growth factor 1 (IGF-1), was statistically significant even after adjustment for multiple comparisons; and genes for two IGF-binding proteins, a cyclin, a heat shock protein, p38 mitogenactivated protein kinase, and an inducible cytochrome P450 were among those implicated by the survey. In young control mice, half of the expressed genes showed *SD*s that were more than 58% of the mean, and a simulation study showed that genes with this degree of interanimal variation would often produce false-positive findings when conclusions were based on ratio calculations alone (i.e., without formal significance testing). Many genes in our data set showed apparent young-to-old or normal-to-dwarf ratios above 2, but the large majority of these proved to be genes where high interanimal variation could create high ratios by chance alone, and only a few of the genes with large ratios achieved $p < .05$. The proportion of genes showing relatively large changes between 5 and 13 months, or from 13 to 22 months of age, was not diminished by the dwarf genotype, providing no support for the idea that the dwarf mutation leads to global delay or deceleration of the pace of age-dependent changes in gene expression. These survey data provide the foundation for replication studies that should provide convincing proof for age- and genotype-specific effects on gene expression and thus reveal key similarities among the growing number of mouse models of decelerated aging.

0929

Miller, Richard A., Andrzej Galecki, and Robert J. Shmookler-Regis. Interpretation, design, and analysis of gene array expression experiments. *Journal of Gerontology: Biological Sciences* 56A(2):B52-B57, Feb. 2001.

EXPERIMENTAL RESEARCH. GENE ARRAY EXPRESSION EXPERIMENTS.

Experiments using arrays of cDNA targets to compare patterns of gene expression are beginning to play a prominent role in biogerontology, but drawing reliable conclusions from the resulting data sets requires careful application of statistical methods that discriminate chance events from those likely to reflect real differences among the samples under study. This essay discusses flaws in the logic of studies that base their conclusions on ratio calculations alone, reviews the multiple comparison traps inherent in high throughput systems that test a very large number of mRNAs simultaneously, and advocates a two-stage design in which significance testing applied to

exploratory data is used to guide a second round of hypothesis-testing experiments conducted in a separate set of experimental samples.

Sexuality

0930

Wagner, Gorm, et al. Sildenafil citrate (Viagra®) improves erectile function in elderly patients with erectile dysfunction: a subgroup analysis. *Journal of Gerontology: Medical Sciences* 56A(2):M113-M119, Feb. 2001.

ELDERLY. ERECTILE DYSFUNCTION. MEN. SEXUAL BEHAVIOR. SEXUAL FUNCTION. SILDENAFIL CITRATE. VIAGRA.

The prevalence of erectile dysfunction (ED) increases with advancing age, with a particularly high prevalence of ED in elderly patients with diabetes. In the United States it is estimated that approximately 45% of men aged 65 to 69 years have moderate or complete ED. The efficacy and safety of oral sildenafil (Viagra®) for treating ED in elderly men (aged > 65 years or older) were assessed. We analyzed data obtained from five double-blind, placebo-controlled studies of the efficacy and tolerability of oral sildenafil taken as required (but not more than once daily) over a 12-week to 6-month period. Two subgroups were evaluated: (i) elderly patients with ED of broad-spectrum etiology ($N = 411$) and (ii) elderly patients with ED and diabetes ($N = 71$). Efficacy was assessed using a global efficacy question, questions 3 and 4 of the International Index of Erectile Function (IIEF), and the five sexual function domains of the IIEF. All efficacy assessments indicated that sildenafil significantly improved erectile function both in elderly patients with ED of broad-spectrum etiology and in elderly patients with ED and diabetes. The most common adverse events were mild-to-moderate headache, flushing, and dyspepsia. The rates of discontinuation due to adverse events were low and were comparable to the rates with placebo. Sildenafil is an efficacious and well-tolerated treatment for ED in elderly men.

Longevity

0931

Arai, Yasumichi, et al. Serum insulin-like growth factor-1 in centenarians: implications of IGF-1 as a rapid turnover protein. *Journal of Gerontology: Medical Sciences* 56A(2):M79-M82, Feb. 2001.

BIOLOGICAL AGING. GROWTH HORMONES. INSULIN.

It is well documented that serum insulin-like growth factor I (IGF-1) levels as well as growth hormone secretion decline with advancing age. Low levels of IGF-1 are shown to be associated with low activity of growth hormone, low lean mass, and high body fat mass; however, in the elderly, the relationship has not been confirmed. We studied serum IGF-1 levels in 49 centenarians, who are at the ultimate stage of physiological senescence, and investigated the possible relationship between IGF-1 and body mass index, lipid parameters, nutritional indices, physical and cognitive function, and frequency of hip fracture. As nutritional indices, serum levels of albumin, prealbumin, transferrin, and retinol binding protein were measured. Cognitive function of the centenarians was assessed by clinical dementia rating. In the centenarians, the mean levels of IGF-1 were relatively low, indicating that there is an age-associated decline in IGFI even in the extremely old age. We demonstrated a strong association of IGF-I with prealbumin and retinol binding protein ($r^2 = .192, .195$, respectively); however, there was no association with albumin, transferrin, or body mass index.

Interestingly, centenarians with lower IGF-I levels had a higher prevalence of definitive dementia. These data suggest that serum IGF-I levels in the centenarians appeared to reflect their short-term nutritional status as a rapid turnover protein. It is also suggested that low levels of serum IGF-I may be involved in the progression of dementia in the oldest old.

0932

Barzilai, Nir, and Alan R. Shuldiner. Searching for human longevity genes: the future history of gerontology in the post-genomic era. *Journal of Gerontology: Medical Sciences* 56A(2):M83-M87, Feb. 2001.

GENETICS. GERONTOLOGY. HUMAN GENOME PROJECT. LONGEVITY.

Over the last 30 years, a number of genetic and environmental factors that lead to decreased length of life have been identified. Unfortunately, much less progress has been achieved in identifying genes associated with longevity that protect from common diseases or slow the aging process. Recent compelling evidence supports a role for important genetic and environmental interactions on longevity in lower organisms. Although less is known in humans, commonality in molecular and biological processes, evolutionary arguments, and epidemiological data would strongly suggest that similar mechanisms also apply. The completion of the Human Genome Project and the rapid innovations in technology will make possible the identification of human longevity-assurance genes. This article reviews such evidence, its implications for the identification of human longevity-assurance genes, and the significance of finding longevity genes to human health and disease.

0933

Frisoni, Giovanni B., et al. Longevity and the ε2 allele of apolipoprotein E: the Finnish centenarians study. *Journal of Gerontology: Medical Sciences* 56A(2):M75-M78, Feb. 2001.

APOLIPOPROTEIN E. FINLAND. FINNISH CENTENARIANS STUDY. LONGEVITY.

Whether and which genetic factors affect human longevity is unclear. This study assesses the association between the ε2 allele of apolipoprotein E (APOE), a putative longevity gene, and extremely old age. This study is based on all centenarians living in Finland in 1991. Subjects were 179 persons (28 men and 151 women) aged 100 years and older (response rate, 97%). The percentages of ε2-allele carriers in persons aged 100 to 101, 102 to 103, and 104 years and older were 9% (10/117), 21% (9/42), and 25% (5/20; gender-adjusted p for trend = .01), respectively. The effect was particularly strong in women: 8% (8/100), 18% (6/33), and 28% (5/18; p for trend = .01) by age group, respectively. Low cell numbers prevented clear conclusions being drawn for men. Seventeen percent (30/179) of the adult Finnish population were carriers of the ε4 allele, a figure lower than expected, and stable by age group. Carriers of the ε2 allele of APOE might be predisposed to reach extremely old age.

0934

Kerber, Richard A., et al. Familial excess longevity in Utah genealogies. *Journal of Gerontology: Biological Sciences* 56A(3):B130-B139, March 2001.

FAMILY HISTORY. GENEALOGIES. LONGEVITY. LONGITUDINAL STUDIES. UTAH.

We evaluated the influence of family history on longevity by examining longevity in a cohort of 78,994 individuals drawn from the Utah Population Database (UPDB) who were born between 1870 and 1907, and lived to at least age 65. We examined Mendelian genetic and social modes of transmission of excess longevity (the difference between observed and expected longevity) by varying weighted kinship contributions over different classes of relatives. The genetic component of the variation in excess longevity measured as heritability, h^2, was approximately 0.15 (95% confidence interval [CI] 0.12-0.18). Among siblings of probands who reached the 97th percentile of excess longevity (+14.8 years, currently age 95 for men and 97 for women), the relative risk of recurrence (λ_s) was 2.30 (95% CI 2.08-2.56). In sibships whose relatives were in the top 15% of the distribution for familial excess longevity, the value of λ_s increased substantially, indicating that considering the longevity of distant relatives may be helpful in the selection of families in which to identify genes influencing aging and longevity.

0935

Miller, Richard A. Biomarkers of aging: prediction of longevity by using age-sensitive T-cell subset determinations in a middle-aged, genetically heterogeneous mouse population. *Journal of Gerontology: Biological Sciences* 56A(4):B180-B186, April 2001.

BIOLOGICAL AGING. EXPERIMENTAL MICE. LONGEVITY. MIDDLE-AGED ADULTS.

Seven T-cell subset values were measured in each of 559 mice at 8 months of age, and then again in the 494 animals that reached 18 months of age. The group included virgin males, virgin females, and mated females, and it was produced by using a four-way crossbreeding system that generates genetic heterogeneity equivalent to a very large sibship. An analysis of covariance showed that four T-cell subsets—CD4, CD4 memory, CD4 naive, and CD4 cells expressing P-glycoprotein—were significant predictors ($p < .003$) of longevity when measured at 18 months of age after adjustment for the possible effects of gender and mating. The subset marked by CD4 and *P*-glycoprotein expression showed a significant interaction effect: this subset predicted longevity only in males. Among subsets measured when the mice were 8 months of age, only the levels of CD8 memory cells predicted longevity ($p = .016$); the prognostic value of this subset was largely limited to mated females. A cluster analysis that separated mice into two groups based upon similarity of T-cell subset patterns measured at 18 months showed that these two groups differed in life expectancy. Specifically, mice characterized by relatively low levels of CD4 and CD8 memory cells, high levels of CD4 naive cells, and low levels of CD4 cells with *P*-glycoprotein (64% of the total) lived significantly longer (50 days = 6%; $p < .0007$) than mice in the other cluster. The results are consistent with the hypothesis that patterns of T-cell subsets vary among mice in a manner than can predict longevity in middle age, and they suggest that these subsets may prove to be useful for further studies of the genetics of aging and age-sensitive traits.

MEDICAL DISORDERS AND DIAGNOSES

General Medical Issues

0936

Choi, Namkee G., and Linda Schlichting-Ray. Predictors of transitions in disease and disability in pre- and early-retirement populations. *Journal of Aging and Health* 13(3):379-409, August 2001.

DISABILITIES. DISEASE. HEALTH STATUS. RETIREMENT.

This study analyzed rates of prevalence, incidence, and transitions in disease and disability status of those aged 51 to 61 years and the predictors of the transitional outcomes—remaining free of disease or disability and having improving or deteriorating health—during a 2-year period. Data from the 1992 and 1994 interview waves of the Health and Retirement Study were used for gender-separate binary and multinominal logistic regression analysis. Despite high prevalence and incidence rates of chronic disease and functional limitations, the improvement rates in disabilities were high. For both genders, age, years of education, health-related behavior, and morbidity factors were significant predictors of the transition outcomes. The significance of health-related behaviors as predictors of transitions suggest that lifestyle factors may have a greater influence on this age group than on older groups.

0937

Edwards, Robert R., and Roger B. Fillingim. Age-associated differences in responses to noxious stimuli. *Journal of Gerontology: Medical Sciences* 56A(3):M180-M185, March 2001.

AGE DIFFERENCES. ELDERLY. MIDDLE-AGED ADULTS. NOXIOUS STIMULI. PAIN. PAIN CONTROL. YOUNG ADULTS.

Although population-based studies typically report age-associated increases in clinical pain, laboratory-based pain assessment procedures generally indicate diminished pain sensitivity with age. The majority of these studies have utilized noxious thermal stimuli as the method of pain induction. However, other pain assessment methodologies, including ischemic pain induction, may have a more meaningful relationship to clinical pain. The present study examined the effects of age on responses to a variety of experimental noxious stimuli. In addition, relationships between cardiovascular measures and pain responses were investigated in both older and younger subjects. Responses to thermal, mechanical, and ischemic pain were assessed in 34 younger (mean age, 22.4 years) and 34 older adults (mean age, 62.2 years). In addition, relationships between resting blood pressure and pain responses were assessed separately for older and younger participants. Although group differences in thermal and mechanical pain responses did not achieve statistical significance, older individuals demonstrated substantially lower ischemic pain thresholds and tolerances assessed via the modified submaximal effort tourniquet procedure ($p < .01$). Overall, higher resting arterial blood pressures were associated with increased pain thresholds and tolerances, although relationships between blood pressure and ischemic pain variables were evident only for the younger group. These findings indicate that age-related differences in responses to experimental noxious stimuli vary as a function of the pain induction task, with older individuals showing greater sensitivity to clinically relevant stimuli. In addition, the absence of a relationship between blood

pressure and ischemic pain responses in older adults may suggest potential functional decrements in at least one endogenous pain-modulatory system.

0938

Robbins, Jessica M., et al. Agreement between older subjects and proxy informants on history of surgery and childbirth. *Journal of the American Geriatrics Society* 48(8):975-979, August 2000.

CHILD BEARING. PERSONAL MEDICAL HISTORY. SELF-REPORTS. SURGERY.

This study sought to assess the agreement between proxy informants' reports of history of surgery and childbirth and older index subjects' own recall. The design was an interrater reliability study. The setting was an outpatient family medicine clinic in a provincial electoral district in Montreal, Canada.

Participants were 82 subjects aged 65 years and older without cognitive impairment, identified from clinic and community settings, and each index subject's proxy respondent. Identical questionnaires were administered to index subjects and proxies. Proxies failed to report 39% of non-childbirth surgeries reported by index subjects, but failed to report only 10% of childbirths. Female proxies were significantly less likely than male proxies to underreport non-childbirth surgeries after controlling for age of index subject and interval since surgery. Longer interval since surgery was significantly associated with greater underreporting, whereas age of the index subject and relationship between proxy and index subject were not. Agreement between proxies and index subjects on date of surgery was much higher for childbirths than for non-childbirth surgeries. Our findings suggest that proxy respondents can provide reliable information on older women's history of childbirth but that use of proxy respondents for history of non-childbirth surgeries may result in substantial underreporting.

Chronic Diseases

0939

Maggi, Stefania, et al. High plasma insulin and lipids profile in older individuals: the Italian longitudinal study on aging. *Journal of Gerontology: Medical Sciences* 56A(4):M236-M242, April 2001.

BIOLOGICAL AGING. HIGH-DENSITY LIPOPROTEIN CHOLESTEROL. INSULIN. ITALIAN LONGITUDINAL STUDY ON AGING. ITALY.

The inverse relationship of insulin level to high-density lipoprotein (HDL)-cholesterol and its positive association with hypertriglyceridemia has been demonstrated in several studies; however, the relationship of insulin to low-density lipoprotein (LDL)-cholesterol in elderly persons is not clear. This study investigates the relationships of fasting plasma insulin and selected metabolic and biological risk factors in an aged population. The present study is based on a cross-sectional analysis of the data collected at baseline of the Italian Longitudinal Study on Aging in 1992 on a random sample of 5632 Italians aged 65-84 years. Analyses were performed to compare the distribution of risk factors, such as blood level of lipids, creatinine, albumin, fibrinogen, apolipoprotein A-1 and B, blood pressure, and body mass index (BMI), by quartiles of insulin, in both diabetic and nondiabetic participants. Significantly higher levels of triglycerides and BMI and lower levels of HDL-cholesterol were found in the upper quartile of insulin among nondiabetic individuals. In men, we also found significantly higher levels of systolic and diastolic blood pressure. The same trend for these

variables, although not significant for HDL-cholesterol and blood pressure, was seen in diabetic men. In diabetic women, total and LDL-cholesterol were significantly lower in the highest insulin quartile ($p < .001$), while no significant differences were seen in nondiabetic women or in men. We also found higher levels of white blood cells in the highest insulin quartile of diabetic women. These results, apparently in disagreement with earlier reports on the clustering of cardiovascular disease risk factors in hyperinsulinemic individuals, could be due to the high frequency of chronic inflammation and the high prevalence of urinary infections in older diabetic women.

0940

Markides, Kyriakos S., et al. Lower body function and mortality in Mexican American elderly people. *Journal of Gerontology: Medical Sciences* 56A(4):M243-M247, April 2001.

ACTIVITIES OF DAILY LIVING. FUNCTIONAL STATE. LOWER BODY FUNCTION. MEXICAN AMERICANS. MORTALITY RATES.

The purpose of this analysis was to examine the differential impact of performance-based and self-reported lower body measures on 2-year mortality in Mexican American elderly persons. Data employed are from the Hispanic Established Population for Epidemiological Studies of the Elderly, a probability survey of 3050 community-dwelling Mexican Americans aged 65 and older from the five southwestern states interviewed in 1993 and 1994. Of the baseline sample with complete data, 198 persons were confirmed deceased 2 years later. A three-task, performance-based, lower body function measure consisting of a short walk, balance, and repeated chair stands tests was used. Self-reported lower body function was measured by a 4-item Activities of Daily Living (ADL) measure involving the lower body. The three-task, lower body function measure was a significant predictor of 2-year mortality. The short walk alone was as predictive as the summary measure. The predictive ability of both measures was minimally reduced by the inclusion of the self-reported ADL measure and life-threatening medical conditions. Finally, the ADL measure was not a significant predictor of mortality with all the other variables in the analysis. Objective measures of lower body function were significant predictors of mortality in Mexican American elderly persons, as found in the general population. Unlike previous studies, the ADL measure was not an independent predictor of mortality after controlling for the objective measure and other risk factors. Additional research is needed to address why objective measures of function are such strong predictors of death.

0941

Miller, Myron. Nocturnal polyuria in older people: pathophysiology and clinical implications. *Journal of the American Geriatrics Society* 48(10):1321-1329, Oct. 2000.

BIOLOGICAL AGING. NOCTURNAL POLYURIA. TREATMENT TECHNIQUES.

This study sought to review the physiological changes of aging which affect the systems involved in urine formation and to consider how these changes interact with changes in bladder function, thereby leading to the onset of nocturnal polyuria with associated urinary frequency, nocturia, and incontinence. Based on this information, data are presented on the effectiveness of pharmacological interventions which reduce the rate of urine formation and, thus, can be of benefit in reducing symptoms, especially during the nighttime. Peer-reviewed journal articles were identified by MEDLINE Search and by review of the literature. As a consequence of age-associated diminished renal concentrating capacity, diminished sodium conserving ability,

loss of the circadian rhythm of antidiuretic hormone secretion, decreased secretion of renin-angiotensinaldosterone, and increased secretion of atrial natriuretic hormone, there is an age-related alteration in the circadian rhythm of water excretion leading to increased nighttime urine production in older people. The interaction of nocturnal polyuria with age-related diminution in functional bladder volume and detrusor instability results in the symptoms of urinary frequency, nocturia and, in some persons, incontinence. The additional impact of Alzheimer's disease on these physiological and aging changes, as well as on a diminished perception of bladder fullness, leads to an even greater risk of urinary incontinence in these patients. Treatment of nocturnal polyuria with the antidiuretic hormone analog, DDAVP (desmopressin), can result in decreased nocturnal urine production with improvement in symptoms of frequency, nocturia, and incontinence.

0942

Okun, Morris A., and G. Elizabeth Rice. The effects of personal relevance of topic and information type on older adults' accurate recall of written medical passages about osteoarthritis. *Journal of Aging and Health* 13(3):410-429, 410-429, August 2001.

MEDICAL TEXT. MEMORY. OSTEOARTHRITIS. RECALL ACCURACY.

This study investigated the influence of information type (based on whether the text affirmed the reader's veridical beliefs or disconfirmed the reader's erroneous beliefs) and self-reported osteoarthritis status on older adults' accurate recall of written medical passages about osteoarthritis. One week after reading the passage, adults aged 65 through 80 without osteoarthritis ($N = 46$) and those with osteoarthritis ($N = 31$) completed a cued recall task that focused on accurate memory of what the passage described. Findings indicated that disconfirming information was less accurately recalled than affirming information. Whereas self-reported osteoarthritis status was not significantly ($p > .05$) related to accurate recall of affirming information, it was significantly ($p < .05$) related to accurate recall of disconfirming information. Older adults with osteoarthritis were more likely than older adults without osteoarthritis to misrepresent the content of the passages as supporting their misconceptions.

0943

Rigaud, Anne-Sophie, and Bernard Forette. Hypertension in older adults. *Journal of Gerontology: Medical Sciences* 56A(4):M217-M225, April 2001.

AGING DIFFERENCES. CEREBROVASCULAR DISEASE. ELDERLY. HYPERTENSION. YOUNG ADULTS.

The high prevalence of hypertension in older persons (nearly one of two subjects aged 60 years and older) suggests that the recognition and treatment should be a priority for physicians. Although diastolic blood pressure is regarded as an important risk factor, it is now clear that isolated systolic hypertension and elevated pulse pressure also play an important role in the development of cerebrovascular disease, congestive heart failure, and coronary heart disease, which are the major causes of cardiovascular morbidity and mortality in the population aged older than 65 years. Controlled, randomized trials have shown that treatment of systolic as well as systolodiastolic hypertension decreases the incidence of cardiovascular and cerebrovascular complications in older adults. The question of whether treatment of hypertension should be maintained in very old persons, those older than 80 years, is still undecided.

Cardiovascular Disorders

0944

Aronow, Wilbert S. Treatment of older persons with hypercholesterolemia with and without cardiovascular disease. *Journal of Gerontology: Medical Sciences* 56A(3):M138-M145, March 2001.

CARDIOVASCULAR DISORDERS. HYPERCHOLESTEROLEMIA. TREATMENT TECHNIQUES.

Hypercholesterolemia is a risk factor for new coronary events in older men and women. Secondary prevention trials have demonstrated in persons with coronary artery disease (CAD) and hypercholesterolemia that statin drugs reduced in older persons cause mortality, cardiovascular mortality, coronary events, coronary revascularization, stroke, and intermittent claudication. Statins have also been shown to slow progression of coronary atherosclerotic plaques in persons with CAD, to reduce restenosis after coronary stent implantation, and to decrease myocardial ischemia in persons with CAD. Older men and women with CAD, prior atherothrombotic brain infarction, peripheral arterial disease, or extracranial carotid arterial disease and a serum low-density lipoprotein (LDL) cholesterol level higher than 125 mg/dl despite diet should be treated with statin drug therapy to lower the serum LDL cholesterol level below 100 mg/dl. Primary prevention trials have shown that statins were also effective in reducing cardiovascular events in older persons with hypercholesterolemia. On the basis of data from the Air Force/Texas Coronary Atherosclerosis Prevention Study, the physician should consider using statins in persons aged 65-80 years without cardiovascular disease with a serum LDL cholesterol level above 130 mg/dl and serum high-density lipoprotein cholesterol level below 50 mg/dl.

0945

Marchionni, Niccolò, et al. Determinants of exercise tolerance after acute myocardial infarction in older persons. *Journal of the American Geriatrics Society* 48(2):146-153, Feb. 2000.

AGE DIFFERENCES. EXERCISE TOLERANCE. MYOCARDIAL INFARCTION. PHYSICAL EXERCISE.

Exercise tolerance is reduced with advancing age. Identification of potentially reversible determinants of the age-related decrement in exercise tolerance, which remain largely unexplored in older subjects and in patients recovering from a recent myocardial infarction (MI), may have useful therapeutic implications. The objective of this study was to identify the independent determinants of exercise tolerance in older patients with a recent MI. Data are drawn from baseline assessment of 265 post-MI patients (age range 45-85 years) enrolled in the Cardiac Rehabilitation in Advanced Age randomized, controlled trial. Patients with major comorbidities or severe MI complications were excluded from the trial. Exercise tolerance was determined from symptom-limited exercise testing and expressed as total work capacity (TWC, kg/min) or peak oxygen consumption (Vo^2peak, mL/kg/min). The associations between both TWC and Vo^2peak and baseline demographic, social, clinical, and neuropsychological variables and an index of health-related quality of life were

determined with univariate and multivariate analysis. With univariate analysis, TWC decreased by 1285 kg.m per decade of increasing age between 45 and 85 years of age. With multivariate analysis, TWC decreased by 922 kg.m per decade. Increasing age ($p < .001$), female gender ($p < .001$), a small body surface area ($p < .001$), a low level of usual physical exercise before MI ($p < .002$), and the presence of post-MI depressive symptoms ($p < .024$) were independently associated with a lower TWC. The same factors, in addition to a small arm muscle area ($p < .002$), were also independently associated with a lower Vo^2peak. Age per se accounts for approximately 70% of the age-related decay in TDUC or $V0^2$peak. However, the inclusion of modifiable factors such as physical exercise and depression in the prediction model reinforces the importance of a multidimensional approach to the evaluation and treatment of older patients with a recent MI.

0946

Newman, Anne B., et al. Associations of subclinical cardiovascular disease with frailty. *Journal of Gerontology: Medical Sciences* 56A(3):M158-M166, March 2001.

CARDIOVASCULAR DISORDERS. FRAIL ELDERLY.

Frail health in old age has been conceptualized as a loss of physiologic reserve associated with loss of lean mass, neuroendocrine dysregulation, and immune dysfunction. Little work has been done to define frailty and describe the underlying pathophysiology. Frailty status was defined in participants of the Cardiovascular Health Study (CHS), a cohort of 5,201 community-dwelling older adults, based on the presence of three out of five clinical criteria. The five criteria included self-reported weight loss, low grip strength, low energy, slow gait speed, and low physical activity. We examined the spectrum of clinical and subclinical cardiovascular disease in those who were frail (3/5 criteria) or of intermediate frailty status (lot 2/5 criteria) compared to those who were not frail (0/5). We hypothesized that the severity of frailty would be related to a higher prevalence of reported cardiovascular disease (CVD), as well as to a greater extent of CVD, measured by noninvasive testing. Of 4,735 eligible participants, 2,289 (48%) were not frail, 299 (6%) were frail, and 2,147 (45%) were of intermediate frailty status. Those who were frail were older (77.2 yrs) compared to those who were not frail (71.5 yrs) or intermediate (73.4 yrs) ($p < .001$). Frailty status was associated with clinical CVD and most strongly with congestive heart failure (odds ratio [OR] = 7.51; 95% confidence interval [CI] = 4.66-12.12). In those without a history of a CVD event ($n = 1,259$), frailty was associated with many noninvasive measures of CVD. Those with carotid stenosis > 75% (adjusted OR = 3.41), ankle-arm index < 0.8 (adjusted OR = 3.17) or 0.8-0.9 (adjusted OR = 2.01), major electrocardiography (ECG) abnormalities (adjusted OR = 1.58), greater left ventricular (LV) mass by echocardiography (adjusted OR = 1.16), and higher degree of infarct-like lesions in the brain (adjusted OR = 1.71), were more likely to be frail compared to those who were not frail. The overall associations of each of these noninvasive measures of CVD with frailty level were significant (all $p < .05$). Cardiovascular disease was associated with an increased likelihood of frail health. In those with no history of CVD, the extent of underlying cardiovascular disease measured by carotid ultrasound and ankle-arm index, LV hypertrophy by ECG and echocardiography, was related to frailty. Infarct-like lesions in the brain on magnet resonance imaging were related to frailty as well.

0947

Rich, Michael W. Heart failure in the 21st century: a cardiogeriatric syndrome. *Journal of Gerontology: Medical Sciences* 56A(2):M88-M96, Feb. 2001.

BIOLOGICAL AGING. CARDIOVASCULAR DISORDERS. CHRONIC HEART FAILURE.

Chronic heart failure (CHF) is principally a cardiogeriatric syndrome, and it has become a major public health problem in the twenty-first century due largely to the aging population. Age-related changes throughout the cardiovascular system in combination with the high prevalence of cardiovascular diseases at older age predispose older adults to the development of CHF. Features that distinguish CHF at advanced age from CHF occurring during middle age include an increasing proportion of women, a shift from coronary heart disease to hypertension as the most common etiology, and the high percentage of cases that occur in the setting of preserved left ventricular systolic function. Although the pharmacotherapy of CHF is similar in older and younger patients, the presence of multiple comorbidities in older patients mandates a multidisciplinary approach to care. Manifest CHF is associated with a poor prognosis, especially in elderly persons, and there is an urgent need to develop more effective strategies for the prevention and treatment of this increasingly common disorder to reduce the individual and societal burden of this devastating illness in the decades ahead.

Cancer

0948

McCarthy, Ellen P., et al. Mammography use, breast cancer stage at diagnosis, and survival among older women. *Journal of the American Geriatrics Society* 48(10):1226-1233, Oct. 2000.

BREAST CANCER. DISEASE STAGES. MAMMOGRAPHY. MEDICAL DIAGNOSIS. SURVIVAL RATES. TREATMENT OUTCOMES. WOMEN.

Women aged 65 years and older account for most newly diagnosed breast cancers and deaths from breast cancer. Yet, older women are least likely to undergo mammography, perhaps because mammography's value is less well demonstrated in older women. This study sought to investigate the relationship between prior mammography use, cancer stage at diagnosis, and breast cancer mortality among older women with breast cancer. The design was a Retrospective cohort study using the Linked Medicare Tumor Registry Database. Population-based data were drawn from three geographic areas included in the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) program. Participants were women aged 67 and older diagnosed with a first primary breast cancer, from 1987 to 1993, residing in Connecticut, metropolitan Atlanta, Georgia, or Seattle–Puget Sound, Washington. Medicare claims were reviewed and women were classified according to their mammography use during the 2 years before diagnosis: nonusers (no prior mammograms), regular users (at least two mammograms at least 10 months apart), or peridiagnosis users (only mammograms) within 3 months before diagnosis. Mammography utilization was linked with SEER data to determine stage at diagnosis and cause of death. Our main outcome variables were (1) stage at diagnosis, classified as early (in situ/Stage I) or late (Stage II or greater) and (2) breast cancer mortality, measured from diagnosis until death from breast cancer or end of the follow-up period (December 31, 1994). Older women who were nonusers of mammography were diagnosed with breast cancer at Stage II or greater more often than regular users (adjusted odds ratio (OR), 3.12; 95% confidence interval [CI], 2.74-3.58). This association was present within each

age group studied. Nonusers of mammography were at significantly greater risk of dying from their breast cancer than regular users for all women (adjusted hazard ratio (HR), 3.38; 95% CI, 2.65-4.32) and for women within each age group. Even assuming a lead time of 1.25 years, nonusers of mammography continued to be at increased risk of dying from breast cancer. Our findings remained significant for all women and for the two youngest age groups (67-74 years, 75-85 years), although the benefit was no longer statistically significant for the oldest women (85 years and older). Older women who undergo regular mammography are diagnosed with an earlier stage of disease and are less likely to die from their disease. These data support the use of regular mammography in older women and suggest that mammography can reduce breast cancer mortality in older women, even for women age 85 and older.

Accidents and Injuries

0949

Brassington, Glenn S., Abby C. King, and Donald L. Bliwise. Sleep problems as a risk factor for falls in a sample of community-dwelling adults aged 64-99 years. *Journal of the American Geriatrics Society* 48(10):1234-1240, Oct. 2000.

FALLS. RISK ANALYSIS. SLEEP DISORDERS.

The purpose of this study was to determine if reported nighttime sleep problems and daytime sleepiness were associated with reported falling during the previous 12 months in a representatively sampled older adult population. The design was a random-digit dial telephone survey. The setting was a representatively sampled older adult population living in northern California. Participants were 971 women and 555 men, aged 64 to 99 years. Measurements were based on 20-minute telephone interview adapted from the National Health Interview Survey. Two hundred and eighty-four participants reported falling during the previous 12 months (19% of the sample). Significantly more women fell than men (20% and 14%, respectively, $p <$ .001). The following variables were significant risk factors for falling in univariate analyses: female gender, being unmarried, living alone, income less than $15,000 per year, difficulty walking, having more than one chronic medical condition, history of cardiovascular disease, hypertension, arthritis, sensory impairment, psychological difficulties, and nighttime sleep problems. All of the nighttime sleep problem variables remained significant risk factors for falling after controlling for other risk factors for falling. The results provide support for an independent association between reported sleep problems and falls in an older population. One of the implications of these data is that behavioral research focusing on the effectiveness of insomnia treatment in old age should not only examine typical sleep-related outcomes (e.g., total time asleep, number of awakenings) but also the occurrence of falls.

0950

Coloón-Emeric, Cathleen, et al. Expert physician recommendations and current practice patterns for evaluating and treating men with osteoporotic hip fracture. *Journal of the American Geriatrics Society* 48(10):1261-1263, Oct. 2000.

HIP FRACTURES. MEDICAL DIAGNOSIS. MEN. OSTEOPOROSIS. TREATMENT OUTCOMES. TREATMENT TECHNIQUES.

This study sought to develop recommendations for the evaluation and the treatment of men with osteoporotic hip fracture from expert publications in the field of male osteoporosis and to define the current practice patterns in a tertiary care VA Medical Center in Durham, North Carolina. The design was a survey research; a

retrospective cohort study. The setting was a tertiary care VA Medical Center in Durham, North Carolina. Participants were U.S. physicians who published on the subject of male osteoporosis in the peer-reviewed literature between 1993 and 1997 identified by MEDLINE database search and all 119 men admitted to the Durham VA Medical Center with ICD9 code for hip fracture between 1994 and 1998. Measurements were the following: (1) osteoporosis evaluation and treatment recommendations of published physicians obtained by survey instrument, and (2) actual osteoporosis evaluation completed and therapy prescribed during index hospitalization in a cohort of men with hip fractures, determined by chart and database review. Forty-three physician-researchers were surveyed with an 84% response rate. For an osteoporosis evaluation, 89% of respondents recommended measuring serum testosterone, 85% serum calcium, 75% 25-OH vitamin D levels, 73% myeloma screen, and 61% serum thyroid-stimulating hormone (TSH). Dual energy x-ray absorptiometry would be obtained by 92%. More than 70% recommended calcium, vitamin D, and bisphosphonates for men with a normal metabolic evaluation, and 60% suggested weight-bearing exercise. In the cohort of men admitted with hip fractures, 50% had a serum calcium level and 3% had a serum TSH level measured. Vitamin D was prescribed to 25% of patients in the form of a multivitamin, and 4 received calcium. There was no bisphosphonate, testosterone, or calcitonin use. Physicians who have published on osteoporosis recommended metabolic evaluation and osteoporosis therapy after hip fracture. Only minimal evaluation and treatment occurred in a cohort of men with osteoporotic hip fractures.

0951

Covinsky, Kenneth E., et al. History and mobility exam index to identify community-dwelling elderly persons at risk of falling. *Journal of Gerontology: Medical Sciences* 56A(4):M253-M259, April 2001.

FALLS. MEDICAL HISTORY. MOBILITY. RISK ANALYSIS.

Falls are common in community-dwelling elderly persons and are a frequent source of morbidity. Simple indices to prospectively stratify people into categories at different fall-risk would be useful to health care practitioners. Our goal was to develop a fall-risk index that discriminated between people at high and low risk of falling. We evaluated the risk of falling over a one-year period in 557 elderly persons (mean age 81.6) living in a retirement community. On the baseline interview, we asked subjects if they had fallen in the previous year and evaluated risk factors in six additional conceptual categories. On the follow-up interview one year later, we again asked subjects if they had fallen in the prior year. We evaluated risk factors in the different conceptual categories and used logistic regression to determine the independent predictors of falling over a one-year period. We used these independent predictors to create a fall-risk index. We compared the ability of a prior falls history with other risk factors and with the combination of a falls history and other risk factors to discriminate fallers from nonfallers. A fall in the previous year (OR = 2.42, 95% CI = 1.49-3.93), a symptom of either balance difficulty or dizziness (OR = 1.83, 95% CI = 1.16-2.89), or an abnormal mobility exam (OR = 2.64, 95% Cl = 1.64-4.26) were independent predictors of falling over the subsequent year. These three risk factors together (*c* statistic = .71) discriminated fallers from nonfallers better than previous history of falls alone (*c* statistic = .61) or the symptomatic and exam risk factors alone (*c* statistic = .68). When combined into a risk index, the three independent risk factors stratify people into groups whose risk for falling over the subsequent year ranges from 10% to 51%. A history of falling over the prior year, a risk factor that can be obtained from a clinical

history (balance difficulty or dizziness), and a risk factor that can be obtained from a physical exam (mobility difficulty) stratify people into groups at low and high risk of falling over the subsequent year. This risk index may provide a simple method of assessing fall risk in community-dwelling elderly persons. However, it requires validation in other subjects before it can be recommended for widespread use.

0952

Espino, David V., et al. Prevalence, incidence, and risk factors associated with hip fractures in community-dwelling older Mexican Americans: results of the Hispanic EPESE Study. *Journal of the American Geriatrics Society* 48(10):1252-1260, Oct. 2000.

HIP FRACTURES. MEXICAN AMERICANS. RISK ANALYSIS.

This study sought to determine the rates and risk factors associated with hip fractures in the community-dwelling older Mexican American population. The design was a prospective survey of a regional probability sample of older Mexican Americans aged 65 and over. The 1993-1996 Hispanic Established Population for the Epidemiologic Study of the Elderly (H-EPESE), a probability sample of noninstitutionalized Mexican Americans, aged 65 and over, living in the southwestern states of Texas, New Mexico, Colorado, Arizona, and California. In 1993-1994 and in 1995-1996, 2895 persons, aged 65 and over, considered Mexican American, were selected at baseline as a weighted probability sample. Sample weights were used to extrapolate to the estimated 498,176 older Mexican Americans residing in the southwest U.S. Measurements were self-reported hip fracture and functional measures by in home interviews. Hip fracture prevalence was 4.0% at baseline. The overall incidence of hip fractures for women was 9.1 fractures/1000 person–years. The incidence rate for men was 4.8 fractures/1000 person–years. Extrapolation from these data to the entire older Mexican American population indicated that approximately 5162 new fractures occurred in the population during the 2 year study period. In women, hip fractures were associated independently with advanced age, not being married/living alone, having had a stroke, limitations with activities of daily living and instrumental activities of daily living. In men, only the latter limitations were associated independently with hip fracture. This study indicates that older Mexican American people may have hip fracture incidence rates that place them at highest risk among the Hispanic subgroups. In light of a sparse literature on this population, the fracture estimates derived from this work contributes to our understanding of the true fracture estimates in this population. Based on the extrapolated population rates, hip fracture in this population is a significant public health problem. Adequate preventive measures need to be implemented in this growing U.S. population.

0953

Gregg, Edward W., Mark A. Pereira, and Carl H. Caspersen. Physical activity, falls, and fractures among older adults: a review of the epidemiologic evidence. *Journal of the American Geriatrics Society* 48(8):883-893, August 2000.

EPIDEMIOLOGY. FALLS. FRACTURE. PHYSICAL ACTIVITIES. RESEARCH TRENDS.

Assess the relationship between physical activity and risk for falls and osteoporotic fractures among older adults. The design was a review and synthesis of published literature. We searched the literature using MEDLINE, Current Contents, and the bibliographies of articles identified. We included randomized controlled trials (RCT) of the effects of physical activity on the incidence of falls and case-control and

prospective cohort studies of the association of physical activity with osteoporotic fracture risk. We also summarized mechanisms whereby physical activity may influence risk for falls and fractures. Observational epidemiologic studies and RCTs evaluating the effectiveness of physical activity programs to prevent falls have been inconclusive. However, many studies have lacked adequate statistical power, and recent trials suggest that exercise, particularly involving balance and lower extremity strength training, may reduce risk of falling. There is consistent evidence from prospective and case-control studies that physical activity is associated with a 20-40% reduced risk of hip fracture relative to sedentary individuals. The few studies that have examined the association between physical activity and risk of other common osteoporotic fractures, such as vertebral and wrist fractures, have not found physical activity to be protective. Epidemiologic studies suggest that higher levels of leisure time physical activity prevent hip fractures and RCTs suggest certain exercise programs may reduce risk of falls. Future research needs to evaluate the types and quantity of physical activity needed for optimal protection from falls and identify which populations will benefit most from exercise.

0954

Maitland, Scott B., et al. Well-being as a moving target: measurement equivalence of the Bradburn Affect Balance Scale. *Journal of Gerontology: Psychological Sciences* 56B(2):P69-P77, March 2001.

BRADBURN AFFECT BALANCE SCALE. FALLS. LONGITUDINAL STUDIES. PREVENTION PROGRAMS.

Although the Bradburn Affect Balance Scale (ABS) is a frequently used two-factor indicator of well-being in later life, its measurement and invariance properties are not well documented. We examined these issues using confirmatory factor analyses of cross-sectional (adults ages 54-87 years) and longitudinal data from the Victoria Longitudinal Study. Stability of the positive and negative affect factors was moderate across a 3-year period. Overall, factor loadings for positive affect items were invariant over time with the exception of the pleased item. Negative affect items were time invariant. However, age-group comparisons between young–old and old–old groups revealed age differences in loadings for the upset item at Time 1. Finally, gender groups differed in loadings for the top of the world and going your way items. Thus a pattern of partial measurement equivalence characterized item response to the ABS. Our results suggest that group comparisons and longitudinal change in ABS scale scores of positive and negative affect should be interpreted with caution.

0955

Newton, Roberta A. Validity of the multi-directional reach test: a practical measure for limits of stability in older adults. *Journal of Gerontology: Medical Sciences* 56A(4):M248-M252, April 2001.

BERG BALANCE TEST. MULTIDIRECTIONAL REACH TEST. PHYSICAL BALANCE. PREDICTIVE VALIDITY. TIMED UP & GO TEST.

Falls occur not only in the forward direction but also to the side and backward. The purpose of this study was to develop a portable and valid tool to measure limits of stability in the anterior-posterior and medial-lateral directions. Two hundred fifty-four community-dwelling older persons were administered the Berg Balance Test (BBT), the Timed Up & Go Test (TUG), and the Multi-Directional Reach Test (MDRT). For the MDRT, subjects performed maximal reaches with the outstretched arm forward

(FR), to the right (RR), to the left (LR), and leaning backward (BR) with feet flat on the floor. Reach was measured by the subject's total hand excursion along a yardstick affixed to a telescoping tripod. Mean scores on the MDRT were FR = 8.89 ± 3.4 in., BR = 4.641-3.07 in., RR = 6.15 ± 2.99 in., and LR = 6.61 ± 2.88 in. Interclass Correlation (ICC2,1) for the reaches were greater than .92. Reliability analysis (Cronbach's alpha, .842) demonstrated that directional reaches measure similar but unique aspects of the MDRT. The MDRT demonstrated significant correlation with the BBT sum and significant inverse relationship with the scores on the TUG. Regression analysis revealed that activity level contributed to scores in the forward, right, and left direction and that fear of falling contributed to scores in the backward direction. The MDRT is an inexpensive, reliable, and valid tool for measuring the limits of stability as derived by reach in four directions. Values obtained on relatively healthy community-dwelling older adults serve as norms for screening patient populations.

0956

Yates, Shawna M., and Tim A. Dunnagan. Evaluating the effectiveness of a home-based fall risk reduction program for rural community-dwelling older adults. *Journal of Gerontology: Medical Sciences* 56A(4):M226-M230, April 2001.

FALLS. PREVENTION PROGRAMS. PROGRAM EVALUATION. RURAL AREAS.

We investigated the effectiveness of a low-cost, multifactor fall risk reduction program in a group of rural community-dwelling older adults. The goal of the program was to provide health care workers and communities with a primary prevention tool that can be used to teach seniors about fall-related risks. The long-term goal of this program is to reduce the incidence of falling among community-dwelling older adults. Complete data were collected on 37 community-dwelling subjects, aged 67 to 90, who participated in a 10-week fall risk reduction program. The subjects were randomly assigned to an intervention group or to a control group. The intervention group received fall risk education, home-based exercise programming, nutrition counseling, and environmental hazards education. Both groups completed a variety of physiologic, psychometric, and environmental fall-related risk assessments before and after the intervention period. The intervention group showed statistically significant improvement in balance, bicep endurance, lower extremity power, reduction of environmental hazards, falls efficacy, and nutritious food behavior during the study period. The low-cost, home-based fall risk reduction program for community-dwelling older adults was effective in reducing some of the studied fall-related risk factors over a 10-week period.

Physical Disabilities

0957

Fried, Linda P., et al. Frailty in older adults: evidence for a phenotype. *Journal of Gerontology: Medical Sciences* 56A(3):M146-M156, March 2001.

FALLS. FRAIL ELDERLY. MORTALITY RATES. PHENOTYPES. PHYSICAL DISABILITIES.

Frailty is considered highly prevalent in old age and to confer high risk for falls, disability, hospitalization, and mortality. Frailty has been considered synonymous with disability, comorbidity, and other characteristics, but it is recognized that it may have a biologic basis and be a distinct clinical syndrome. A standardized definition has not yet been established. To develop and operationalize a phenotype of frailty in older adults and assess concurrent and predictive validity, the study used data from the Cardiovascular Health Study. Participants were 5,317 men and women 65 years and

older (4,735 from an original cohort recruited in 1989-90 and 582 from an African American cohort recruited in 1992-93). Both cohorts received almost identical baseline evaluations and 7 and 4 years of follow-up, respectively, with annual examinations and surveillance for outcomes including incident disease, hospitalization, falls, disability, and mortality. Frailty was defined as a clinical syndrome in which three or more of the following criteria were present: unintentional weight loss (10 lbs in past year), self-reported exhaustion, weakness (grip strength), slow walking speed, and low physical activity. The overall prevalence of frailty in this community-dwelling population was 6.9%; it increased with age and was greater in women than men. Four-year incidence was 7.2%. Frailty was associated with being African American, having lower education and income, poorer health, and having higher rates of comorbid chronic diseases and disability. There was overlap, but not concordance, in the cooccurrence of frailty, comorbidity, and disability. This frailty phenotype was independently predictive (over 3 years) of incident falls, worsening mobility or ADL disability, hospitalization, and death, with hazard ratios ranging from 1.82-4.46, unadjusted, and 1.29-2.24, adjusted for a number of health, disease, and social characteristics predictive of 5-year mortality. Intermediate frailty status, as indicated by the presence of one or two criteria, showed intermediate risk of these outcomes as well as increased risk of becoming frail over 3-4 years of follow-up (odds ratios for incident frailty = 4.51 unadjusted and 2.63 adjusted for covariates, compared to those with no frailty criteria at baseline). This study provides a potential standardized definition for frailty in community-dwelling older adults and offers concurrent and predictive validity for the definition. It also finds that there is an intermediate stage identifying those at high risk of frailty. Finally, it provides evidence that frailty is not synonymous with either comorbidity or disability, but comorbidity is an etiologic risk factor for, and disability is an outcome of, frailty. This provides a potential basis for clinical assessment for those who are frail or at risk and for future research to develop interventions for frailty based on a standardized ascertainment of frailty.

0958

Miller, Michael E., et al. Physical activity, functional limitations, and disability in older adults. *Journal of the American Geriatrics Society* 48(10):1264-1272, Oct. 2000.

FUNCTIONAL STATE. PHYSICAL ACTIVITIES. PHYSICAL DISABILITIES.

This study sought to explore initially how low levels of physical activity influence lower body functional limitations in participants of the Longitudinal Study of Aging. Changes in functional limitations are used subsequently to predict transitions in the activities of daily living/instrumental activities of daily living (ADL/IADL) disability, thus investigating a potential pathway for how physical activity may delay the onset of ADL/IADL disability and, thus, prolong independent living. The design was analysis of a complex sample survey of U.S. civilian, noninstitutionalized population aged 70 years and older in 1984, with repeated interviews in 1986, 1988, and 1990. Analyses concentrated on 5151 men and women targeted for interview at all four LSOA interviews. Characteristics used in analyses included gender; age; level of physical activity; comorbid conditions, including the presence of hypertension, diabetes, arthritis, and atherosclerotic heart disease; levels of functional limitations; and ADL/IADL disability. Transitional models provide evidence that older adults who have varying levels of disability and who report at least a minimal level of physical activity experience a slower progression in functional limitations (OR = .45, $p < .001$ for severe versus less severe limitations). This low level of physical activity, through

its influence on changes in functional limitations, is shown to slow the progression of ADL/IADL disability. Results from analyses provide supporting evidence that functional limitations can mediate the effect that physical activity has on ADL/IADL disability. These results contribute further to the increasing data that seem to suggest that physical activity can reduce the progression of disability in older adults.

0959

Wray, Linda A., and Caroline S. Blaum. Explaining the role of sex on disability: a population-based study. *The Gerontologist* 41(4):499-510, June 2001.

DISABILITIES. DISABILITY TYPE. POPULATION AGING. SEX DIFFERENCES.

There is no clear consensus about the ways in which sex influences prevalent disability and through what mechanisms. The authors investigate whether sex has an independent effect on disability or whether sex has an interactive effect on the relationship between chronic diseases or conditions and disability and whether these effects differ in middle-aged versus older adults. The authors use baseline data from two naturally representative health interview surveys, the Health and Retirement Study (HRS) and the Study of Asset and Health Dynamics Among the Oldest Old (AHEAD), and disability and covariate measures that were nearly identical in both surveys. Logistic regression models tested the contributions of disease, impairments, and demographic and social characteristics on difficulties with prevalent activities of daily living (ADLs), mobility, and strength. Models demonstrated no direct sex effect for ADL disability in either age group after adjusting for key covariates. However, sex did exert an indirect effect on ADL disability in older adults via musculoskeletal conditions and depressive symptoms. In contrast, female sex remained strongly associated with mobility and strength disability in both age groups, net of covariates. Major interactions were also significant, including a female sex/body mass index (BMI) interaction for mobility difficulty and several sex-disease interactions for strength disability in the middle-aged groups.

Osteoarthritis

0960

Wilcox, Sara, et al. Factors related to sleep disturbance in older adults experiencing knee pain or knee pain with radiographic evidence of knee osteoarthritis. *Journal of the American Geriatrics Society* 48(10):1241-1251, Oct. 2000.

KNEE DISORDERS. KNEE OSTEOARTHRITIS. OSTEOARTHRITIS. SLEEP DISORDERS.

This study sought to describe the types and frequencies of sleep complaints and the biopsychosocial factors associated with sleep disturbance in a large community sample of older adults experiencing knee pain or knee pain with radiographic evidence of knee osteoarthritis (OA). The design consisted of baseline analyses of an observational prospective study. Participants were 429 men and women aged 65 years and older experiencing knee pain or knee pain with radiographic evidence of OA enrolled C in the Observational Arthritis Study in Seniors (OASIS). Measurements were demographic variables (age, gender, ethnicity, education), health (x rays of knee rated for OA severity, medical conditions, medication use, smoking status, body mass index, self-rated health), physical functioning (self-rated physical functioning, physical performance), knee pain, and psychosocial functioning (social support, depression) were measured. Problems with sleep onset, sleep maintenance, and early morning awakenings occurred at least weekly among 31%, 81%, and 51% of participants, respectively. Bivariate correlates of greater sleep disturbance in those with OA were

less education, cardiovascular disease, more arthritic joints, poorer self-rated health, poorer physical functioning, poorer physical performance, knee pain, depression, and less social support. In regression analyses, each set of variables representing the domains of health, physical functioning, pain, and psychosocial functioning contributed to the prediction of sleep disturbance beyond the demographic set. Finally, in a simultaneous model, White race (trend, $p = .06$), poorer self-rated health, poorer physical functioning, and depressive symptoms were predictive of sleep disturbance. Sleep disturbance is common in older adults experiencing knee pain or knee pain with radiographic evidence of OA and is best understood through the consideration of demographic, physical health, physical functioning, pain, and psychosocial variables. Interventions that take into account the multidetermined nature of sleep disturbance in knee pain or knee OA are most likely to be successful.

MEDICAL CARE: PREVENTION, TREATMENT, PROFESSIONS

Health Perception and Self-Care

0961

Houle, Linda G., et al. Predictors of family physician use among older residents of Ontario and an analysis of the Andersen-Newman behavior model. *Canadian Journal on Aging/La Revue du vieillissement* 20(2):233-249, Summer 2001.

ANDERSEN-NEWMAN BEHAVIORAL MODEL. CANADA. HEALTH SERVICES. ONTARIO. PHYSICIAN VISITS. SERVICE UTILIZATION.

Using data on physician use by older adults (age 65 or older) from the 1990 Ontario Health Survey (OHS), this study investigated the predictors of family physician utilization across age and gender groups. Consistent with previous studies, number of health problems and self-rated health emerged as the most important predictors of family physician use. Nevertheless, despite an effort to enhance the predictability of the Andersen-Newman Behavioral Model, the predictors explained only 29% of the variance in family physician use when applied to the entire OHS older population. Furthermore, the level of explained variance remained consistently low when analyses were performed across age and gender groups. Although the Andersen-Newman Behavioral Model has been the most widely used conceptual framework in the field, this study suggests that the model may not be appropriate to study family physician use among older Canadians.

0962

Johnson, T.M. II, et al. Self-care practices used by older men and women to manage urinary incontinence: results from the National Follow-up Survey on Self-Care and Aging. *Journal of the American Geriatrics Society* 48(8):894-902, August 2000.

HEALTH SELF-CARE. MEN. URINARY INCONTINENCE.

This study sought to estimate the extent to which self-care practices are employed by older adults with urinary incontinence (UI), determine how demographic and functional status measures are associated with self-care practice use, and explore the relationship between contacting a doctor and disposable pad use. The design was a

cross-sectional analysis of a national probability sample using multiple logistic regression. Responses of subjects with UI (N = 787) from the 1993/1994 National Follow-up Survey on Self-Care and Aging, a follow-up survey of older Medicare beneficiaries living in the community within the contiguous United States drawn in 1990-1991. Measurements were subject responses about UI, fecal incontinence, dressing, eating, bathing, Instrumental Activities of Daily Living (IADL), Mobility Activities of Daily Living (MADL), age, gender, place of residence, race, education, proxy response to the survey, and self-reported medical conditions. Self-care practices used by more than 25% of respondents with UI included using disposable pads, limiting trips, and limiting fluids. Among older adults with incontinence, more women used disposable pads (44.5%; 95% CI, 36.9-52.1) and performed exercises (14.2%; 95% CI, 9.7-18.9) than did men (15.1%; 95% CI, 8.1-22.1; and 4.3%; 95% CI, 1.0-7.7, respectively). Bivariate analysis showed respondents with severe UI or fecal incontinence reported greater use of self-care practices. In multivariate models of the three most commonly used self-care practices, measures of UI severity were not always associated independently with self-care practice use, whereas ADL measures of functional status were. Disposable pad use was positively independently associated (OR 3.36; 95% CI, 2.01-5.63) in multivariate models with contacting a doctor about incontinence, even after controlling for age, gender, demographics, and self-reported medical conditions. Use by older adults of self-care practices to manage urinary incontinence is predicted independently in multivariate models by measures of functional status such as dressing, eating, bathing, IADLs or MADLs, but not by all UI measures. Disposable pad users had increased odds of contacting a doctor, suggesting that self-care practices and formal medical care are not always inversely related.

0963

Shaw, Benjamin A., and Neal Krause. Exploring race variations in aging and personal control. *Journal of Gerontology: Social Sciences* 56B(2):S119-S124, March 2001.

AGING. BLACKS. PERSONAL CONTROL. RACIAL DIFFERENCES. WHITES.

The purpose of this study is twofold: (a) to see whether the association between age and perceived control is the same for Blacks as well as Whites and (b) to see if education, health, income, social support, cognitive function, and religion account for the relationship between age and control in the same way for Blacks and Whites. Data for this study come from the first wave of the Americans' Changing Lives panel study. Complete data are available for 357 Black and 2,792 White individuals. Respondents were asked questions about their feelings of control, health status, income, social support, cognitive function, religious participation, and demographic information. The findings suggest that age has an inverse and nonlinear association with feelings of control. Moreover, this relationship is similar for Blacks and Whites. The data further reveal that, across all age groups, Blacks report a lower sense of control than Whites. Less education, less income, greater cognitive impairments, and more religiosity are associated with a lower sense of control. These factors, along with health and social support, account for 69% of the association between age and control, with no differences according to race. These results show that lower levels of control are associated with older age in both Blacks and Whites and that racial disparities in feelings of control persist across all age groups. This suggests that Blacks may be at a particular disadvantage in the face of the increasing challenges of aging.

Health Promotion and Preventive Practices

0964

Lucchetti, Maria, Liana Spazzafumo, and Federica Cerasa. Italian people aged 50-75 years enrolled in a health promotion program: health and lifestyle. *Educational Gerontology* 27(6):439-453, July/August 2001.

HEALTH PROMOTION. ITALIANS. ITALY. PREVENTION PROGRAMS.

This article presents a qualitative and quantitative analysis that identifies the most important lifestyle factors of an independent population aged 50 to 75 years living at home and in a variety of middle-sized towns in the Marche Region (Italy). The first step was an investigation of multiple associations among state of health, socioeconomic variables, and lifestyle. After studying the set of variables defining lifestyle, the authors proceeded to identify the most important ones to select a group of elderly with a "correct" lifestyle. The principal outcome concerns the overwhelming role played by the subjective perception of aging. It is, therefore, necessary for social policies to concentrate on the importance of promoting educational campaigns for the achievement of successful aging, stressing the value of both personal well-being and socializing activities.

0965

Tishler, Julie, et al. Breast cancer screening for older women in a primary care practice. *Journal of the American Geriatrics Society* 48(8):961-966, August 2000.

BREAST CANCER. MAMMOGRAPHY. PRIMARY CARE. SCREENING TESTS. WOMEN.

This study sought to determine rates of breast cancer screening for older women cared for in a primary care practice and to identify associations between patient and physician characteristics and breast cancer screening. The design was a retrospective cohort study of older women. The setting was an urban hospital-based academic general medicine practice. This practice uses a computerized medical record and office procedures that facilitate tracking and ordering of mammograms. Participants were a random sample of 130 women aged 65 to 80 who receive primary care at a hospital-based general medicine practice. Data were collected from the hospital's computerized medical record. We recorded all clinical breast exams and mammograms performed or recommended during the 2-year study period. The median age of the 130 women studied was 71, and 21% of the women were Black. Most patients had no serious comorbid illness (69%) and were independent in their activities of daily living (92%). During the 2-year study period, mammography was recommended for 95% of women and completed for 84%, and clinical breast exam was performed on 75% of the women. Patients of male physicians had higher rates of mammography than patients of female physicians (89% versus 75%, $p = .045$). Patients of faculty physicians had higher rates of clinical breast exam than patients of house officers or fellows (83% versus 56%, $p = .001$). We report a very high rate of mammography for women cared for at a hospital-based primary care practice. The systems in place to facilitate ordering and tracking of mammograms probably contributed to the unusually high rate of mammography observed.

Nutrition

0966

Allison, David B., et al. Genetic variability in responses to caloric restriction in animals and in regulation of metabolism and obesity in humans. *Journal of Gerontology: Biological Sciences and Medical Sciences* 56A(Special Issue I):55-65, March 2001.

CALORIC REDUCTION. CROSS-SPECIES COMPARISON. GENETICS. HUMANS. METABOLISM. NONHUMAN ANIMALS. OBESITY.

Panel 5 focused on genetic factors that might mediate or moderate the effects of caloric restriction (CR) on longevity. Panel members stated that currently there is limited information directly addressing these issues. Therefore, they focused attention on what studies could be done. In addition, the panel believed that certain conceptual issues merited clarification and focused attention on this issue. Human studies and studies of nonhuman model organisms were discussed. The panel found at least three reasons why it would be valuable to find genes that influence the (putative) longevity-promoting effect of CR in humans. Such knowledge would offer: (a) the ability to predict individual responses to CR, (b) increased understanding of physiological mechanisms, and (c) the potential to develop mechanism-based interventions to promote longevity or healthy aging. In addition, the panel emphasized several macro-level recommendations regarding research strategies to avoid, research strategies to emphasize, and resources needing development.

0967

Bathalon, Gaston P., et al. Metabolic, psychological, and health correlates of dietary restraint in healthy postmenopausal women. *Journal of Gerontology: Medical Sciences* 56A(4):M206-M211, April 2001.

HEALTH STATUS. NUTRITIONAL STATUS. POSTMENOPAUSAL STATUS. WOMEN.

Dietary restraint, a term used to describe the intentional control of food intake to prevent weight gain or promote weight loss, is commonly practiced by older adults, but little is known about its effects on physiology and metabolism. We therefore compared a wide range of parameters between groups of healthy non-obese postmenopausal women classified psychometrically as unrestrained eaters (body mass index [BMI] 23.8 ± 0.6 [*SEM*] kg/m^2, $n = 28$) or restrained eaters (BMI 24.5 ± 0.5, $n = 39$). Measurements were made of reported micronutrient intakes, cardiopulmonary function, hematology, body temperature, skin thickness, bone mass, and immune function; in addition, self-perceived health, mood, and some dimensions of eating behavior were assessed by questionnaire. Macronutrient and micronutrient intakes were not significantly different between restrained and unrestrained eaters reporting energy intake to within 30% of predicted total energy expenditure. Restrained eaters had significantly lower hemoglobin (12.9 ± 0.1 [*SEM*] vs 13.2 ± 0.1 g/dl; $p < .05$), but values were within the normal range in both groups. In addition, restrained eaters scored significantly higher on the Eating Attitudes Test ($p < .01$) and drive for-thinness ($p < .001$) and maturity fears ($p < .05$) subscores of the Eating Disorders Inventory, but values were again within the normal range. No other parameter differed significantly between groups. In this normal-weight population, restrained eating was not associated with detrimental effects in a wide range of physiological, metabolic, and health characteristics. Further work is needed to determine the relevance of these results to the general population.

0968

Black, A., et al. Calorie restriction and skeletal mass in rhesus monkeys (*Macaca mulatta*): evidence for an effect mediated through changes in body size. *Journal of Gerontology: Biological Sciences* 56A(3):B98-B107, March 2001.

CALORIE REDUCTION. *MACACA MULATTA*. NONHUMAN PRIMATES. RHESUS MONKEYS. SKELETAL MASS.

Little is known regarding the effects of prolonged calorie restriction (CR) on skeletal health. We investigated long-term (11 years) and short-term (12 months) effects of moderate CR on bone mass and biochemical indices of bone metabolism in male rhesus monkeys (*Macaca mulatta*) across a range of ages. A lower bone mass in long-term CR monkeys was accounted for by adjusting for age and body weight differences. A further analysis indicated that lean mass, but not fat mass, was a strong predictor of bone mass in both CR and control monkeys. No effect of short-term CR on bone mass was observed in older monkeys (mean age, 19 years), although young monkeys (4 years) subjected to short-term CR exhibited slower gains in total body bone density and content than age-matched controls. Neither biochemical markers of bone turnover nor hormonal regulators of bone metabolism were affected by long-term CR. Although osteocalcin concentrations were significantly lower in young restricted males after 1 month on 30% CR in the short-term study, they were no longer different from control values by 6 months on 30% CR.

0969

Chang, Kuo-Chu, et al. Effects of food restriction on systolic mechanical behavior of the ventricular pump in middle-aged and senescent rats. *Journal of Gerontology: Biological Sciences* 56A(3):B108-B114, March 2001.

AGING. CARDIOVASCULAR DISORDERS. EXPERIMENTAL RATS. FOOD RESTRICTION. MIDDLE AGE. VENTRICULAR PUMP.

Previous work from our laboratory has revealed that the intrinsic contractility of the left ventricle is depressed in rats at 24 months, and the ventricular internal resistance shows declines with age. The aim of this study was to determine whether food restriction (FR) delays the development of age-related changes in left ventricular (LV) contractility and internal resistance. Male Fischer 344 rats that began FR at the ages of 12 and 18 months were fed on alternate days for 6 months and compared with age-matched ad libitum (AL)-fed rats. Rats studied at the ages of 18 and 24 months were referred to as middle-aged and senescent rats, respectively, and were anesthetized and thoracotomized. We measured LV pressure and ascending aortic flow waves by using a high-fidelity pressure sensor and an electromagnetic flow probe, respectively. The elastance-resistance model was used to generate E_{max} and Q_{max} to describe the physical properties of the left ventricle; E_{max} is the maximal systolic elastance to represent the myocardial contractility; Q_{max} is the theoretical maximal flow to be inversely related to the LV internal resistance. Neither age nor diet affected basal heart rate, LV end-systolic pressure, or cardiac output. In conclusion, FR prevents or delays the reduction in myocardial contractility that occurred between 18 and 24 months of age in AL rats. However, FR does not affect the age-related changes in ventricular internal resistance.

0970

Kirk, Kevin L. Dietary restriction and aging: comparative tests of evolutionary hypotheses. *Journal of Gerontology: Biological Sciences* 56A(3):B123-B129, March 2001.

AGING. BIOLOGICAL EVOLUTION. CALORIC REDUCTION. CROSS-SPECIES COMPARISON. NUTRITIONAL STATUS.

Dietary restriction (DR) increases life span in many types of animals. The response to chronic DR may be an adaptation to environments with variable food levels. This study uses the comparative method to test evolutionary predictions about the origin of the response to DR using data from 10 species of rotifers. Most species, but not all, responded to DR by increasing mean life span, maximum life span, reproductive life span, mortality rate doubling time, and initial mortality rate. Interspecific comparisons did not show the predicted correlations between the strength of the response to DR and either reproductive life span, age of first reproduction, or total reproduction. There was support for the idea that the response to chronic DR is associated with changes in reproductive allocation during short-term periods of starvation: species that reduced reproduction when starved increased their life spans under DR, whereas species that continued to reproduce when starved decreased their life spans under DR.

0971

Lal, Shirin B., et al. Effects of caloric restriction on skeletal muscle mitochondrial proton leak in aging rats. *Journal of Gerontology: Biological Sciences* 56A(3):B116-B122, March 2001.

CALORIC RESTRICTION. EXPERIMENTAL RATS. MITOCHONDRIAL PROTON LEAK. SKELETAL MUSCLES.

Long-term caloric restriction (CR) retards aging processes and increases maximum life span. We investigated the influence of CR on mitochondrial proton leaks in rat skeletal muscle. Because CR lowers oxidative damage to mitochondrial membrane lipids and proteins, we hypothesized that leaks would be lower in mitochondria from old CR rats than in age-matched controls. Three groups ($N = 12$) were studied: 4-month-old "young" control rats (body weight: 404 g ± 7 *SEM*), 33-month-old CR rats (body weight: 262 g ± 3), and 33-month-old control rats (body weight: 446 g ± 5). CR rats received 67% of the energy intake of old control rats, with adequate intakes of all essential nutrients. Maximum leak-dependent O_2 consumption (State 4) was 23% lower in CR rats than in age-matched controls, whereas protonmotive force values were similar, supporting our hypothesis. The overall kinetics of leaks were similar between the two groups of old rats; in the young, kinetics indicated higher protonmotive force values. The latter indication is consistent with aging-induced alterations in proton leak kinetics that are independent of dietary intervention. There was no influence of age or diet on serum T_4 level, whereas T_3 was lower in young than in old control rats. These results support and extend the oxidative stress hypothesis of aging.

0972

Lee, I-Min, et al. Epidemiologic data on the relationships of caloric intake, energy balance, and weight gain over the life span with longevity and morbidity. *Journal of Gerontology: Biological Sciences and Medical Sciences* 56A(Special Issue I):7-19, March 2001.

CALORIC RESTRICTION. EPIDEMIOLOGY. LIFE SPAN. LONGEVITY. NUTRITIONAL STATUS. WEIGHT GAIN.

Animal experiments have shown that calorically restricted (CR) animals weigh less and live longer than their ad libitum-fed peers. Are these observations applicable to human beings? This is an important question because the prevalence of obesity in America has increased markedly over recent years. We examine whether there are physiologic effects that occur with CR in humans that could plausibly explain the observed longevity of laboratory animals associated with CR. We also review epidemiologic data from observational and interventional studies on the relationships of caloric intake, energy balance, and weight gain with age-related diseases and longevity. Additionally, data on whether long-term, sustained maintenance of weight loss is feasible, as well as the degree of CR achieved in clinical trials, are summarized. Finally, we provide recommendations regarding further epidemiologic research that will help clarify unanswered questions in these areas.

0973

Mathey, Marie-Françoise A.M., et al. Flavor enhancement of food improves dietary intake and nutritional status of elderly nursing home residents. *Journal of Gerontology: Medical Sciences* 56A(4):M200-M205, April 2001.

FLAVOR ENHANCEMENT. FUNCTIONAL STATE. NURSING HOME RESIDENTS. NUTRITIONAL STATUS.

Taste and smell losses occur with aging. These changes may decrease the enjoyment of food and may subsequently reduce food consumption and negatively influence the nutritional status of elderly persons, especially those who are frail. The objective of this study was to determine if the addition of flavor enhancers to the cooked meals for elderly residents of a nursing home promotes food consumption and provides nutritional benefits. Methods. We performed a 16-week parallel group intervention consisting of sprinkling flavor enhancers over the cooked meals of the "flavor" group ($n = 36$) and not over the meals of the control group ($n = 31$). Measurements of intake of the cooked meals were taken before and after 8 and 16 weeks of intervention. Appetite, daily dietary intake, and anthropometry were assessed before and after the intervention. On average, the body weight of the flavor group increased ($+ 1.1 \pm 1.3$ kg; $p < .05$) compared with that of the control group (-0.3 ± 1.6 kg; $p < .05$). Daily dietary intake decreased in the control group (-485 ± 1245 kJ; $p < .05$) but not in the flavor group (-208 ± 1115 kJ; $p = .28$). Intake of the cooked meal increased in the flavor group (133 ± 367 kJ; $p < .05$) but not in the control group (85 ± 392 kJ). A similar trend was observed for hunger feelings, which increased only in the flavor group. Adding flavor enhancers to the cooked meals was an effective way to improve dietary intake and body weight in elderly nursing home residents.

0974

Mobbs, Charles V., et al. Neuroendocrine and pharmacological manipulations to assess how caloric restriction increases life span. *Journal of Gerontology: Biological Sciences and Medical Sciences* 56A(Special Issue I):34-44, March 2001.

BIOLOGICAL ASSESSMENT. CALORIC RESTRICTION. ENDOCRINOLOGY. LIFE SPAN. PHARMACOLOGY.

As part of an effort to review current understanding of the mechanisms by which caloric restriction (CR) extends maximum life span, the authors of the present review were requested to develop a list of key issues concerning the potential role of neuroendocrine systems in mediating these effects. It has long been hypothesized that failure of specific neuroendocrine functions during aging leads to key age-related systemic and physiological failures, and more recently it has been postulated that physiological neuroendocrine responses to CR may increase life span. However, although the acute neuroendocrine responses to fasting have been well studied, it is not clear that these responses are necessarily identical to those observed in response to the chronic moderate (30% to 50% reduction) CR that increases maximum life span. Therefore the recommendations of this panel fall into two categories. First, further characterization of neuroendocrine responses to CR over the entire life span is needed. Second, rigorous interventional studies are needed to test the extent to which neuroendocrine responses to CR mediate the effects of CR on life span, or alternatively if CR protects the function of essential neuroendocrine cells whose impairment reduces life span. Complementary studies using rodent models, nonhuman primates, and humans will be essential to assess the generality of elucidated mechanisms and to determine if such mechanisms might apply to humans.

0975

Richard, Lucie, et al. "Outings to your taste": a nutrition program for the elderly. *The Gerontologist* 40(5):612-617, Oct. 2000.

NUTRITION. NUTRITIONAL PROGRAMS. SOCIAL NETWORKS.

"Outings to Your Taste" is an innovative program that aims to improve the nutritional status and social network of elderly people who receive home-delivered meals. This article examines participation in one of the program's components, outings to community restaurants. Participation data were collected on-site and information about client characteristics was collected in at-home interview surveys of targeted clients ($N = 144$). While about half of the clients had tried at least one outing, more than 25% of them participated in at least one third of the outings offered to them. Results indicate that the program attracted a variety of clients in terms of sociodemographic, health, and social isolation characteristics.

0976

Roberts, Susan B., et al. Physiologic effects of lowering caloric intake in nonhuman primates and nonobese humans. *Journal of Gerontology: Biological Sciences and Medical Sciences* 56A(Special Issue I):66-75, March 2001.

CALORIC REDUCTION. HUMANS. NONHUMAN PRIMATES. PHYSIOLOGY.

Caloric restriction (CR) reduces the rate of aging and increases life span in all small animal species studied to date, but the effects of CR in humans remain uncertain. This review summarizes current knowledge of the effects of CR in nonhuman primates and humans. The results suggest that CR has a range of beneficial effects in

nonhuman primates studied under laboratory conditions, and short-term markers of CR seen in animal models appear to occur in humans subject to CR also. However, the overall benefit of CR in human populations remains to be established, and studies in human populations are needed.

0977

Vellas, Bruno, et al. Relationships between nutritional markers and the mini-nutritional assessment in 155 older persons. *Journal of the American Geriatrics Society* 48(10):1300-1309, Oct. 2000.

NUTRITION. NUTRITIONAL ASSESSMENT. NUTRITIONAL MARKERS. NUTRITIONAL STATUS.

This study sought to investigate the relationships between nutritional status measured by a comprehensive nutritional assessment including anthropometric measurements, nutritional biological markers, evaluation of dietary intake, and the Mini-Nutritional Assessment (MNA) nutrition screening tool. The design was a prospective study. One hundred fifty-five older subjects (53 men and 102 women; mean age = 78 years; range = 56-97 years) participated. These participants were hospitalized in a geriatric evaluation unit ($n = 105$) or free living in the community ($n = 50$). Measurements were weight; height; knee height; midarm and calf circumferences; triceps and subscapular skinfolds; albumin transthyretin (prealbumin); transferrin; ceruloplasmin; C-reactive protein; alpha;-acid glycoprotein; cholesterol; vitamins A, D, E, B1, B2, B6, B12; folate; copper; zinc; a 3-day food record combined with a food-frequency questionnaire; and the MNA nutritional screening. The MNA scores have been found to be significantly correlated to nutritional intake ($p < .05$ for energy, carbohydrates, fiber, calcium, vitamin D, iron, vitamin B6, and vitamin C) and anthropometric and biological nutritional parameters ($p < .001$ for albumin, transthyretin, transferrin, cholesterol, retinol, alphatocopherol, 25-OH cholecalciferol zinc). An MNA score between 17 and 23.5 can identify those persons with mild malnutrition in which nutrition intervention may be effective. The MNA is a practical, noninvasive, and cost-effective instrument allowing for rapid nutritional evaluation and effective intervention in frail older persons.

0978

Weindruch, Richard, et al. Caloric restriction mimetics: metabolic interventions. *Journal of Gerontology: Biological Sciences and Medical Sciences* 56A(Special Issue I):20-33, March 2001.

CALORIC RESTRICTION. METABOLISM. NUTRITIONAL STATUS.

Caloric restriction (CR) retards diseases and aging in laboratory rodents and is now being tested in nonhuman primates. One way to apply these findings to human health is to identify and test agents that may mimic critical actions of CR. Panel 2 focused on two outcomes of CR, reduction of oxidative stress and improved glucose regulation, for which candidate metabolic mimics exist. It was recommended that studies on oxidative stress should emphasize mitochondrial function and to test the efficacy of nitrone and other antioxidants in mimicking CR's effects. Studies should also focus on the long-term effects of compounds known to lower circulating glucose and insulin concentrations or to increase insulin sensitivity. Also, four other developing areas were identified: intermediary metabolism, response to infection, stress responses, and source of dietary fat. These areas are important because either they hold promise for the discovery of new mimetics or they need to be explored prior to

initiation of CR trials in humans. Other recommendations were that transgenic approaches and adult-onset CR should be emphasized in future studies.

0979

Zuliani, Giovanni. Nutritional parameters, body composition, and progression of disability in older disabled residents living in nursing homes. *Journal of Gerontology: Medical Sciences* 56A(4):M212-M216, April 2001.

BIOLOGICAL AGING. BODY COMPOSITION. NURSING HOME RESIDENTS. NUTRITIONAL STATUS. PHYSICAL DISABILITIES.

The evaluation of nutritional status is one of the primary components of multidimensional geriatric assessment. We investigated the relationship between some markers of malnutrition and the modifications in functional status in a sample of older disabled residents living in nursing homes. Ninety-eight subjects who were independent in at least two activities of daily living (ADLs) were enrolled in a 2-year longitudinal study. Anthropometric, nutritional, and metabolic parameters, as well as body composition, were measured at baseline and after 2 years. Deteriorating functional status (≥ 2 additional lost ADLs) was associated with baseline albumin levels (Tertile 3 vs. Tertile 1; odds ratio [OR] 0.16, 95% confidence interval [CI] 0.04-0.67) and subscapular skinfold thickness (Tertile 3 vs. Tertile 1; OR 0.06, 95% CI 0.006-0.50). After multivariate adjustment, the OR for increasing disability was >4 in subjects with decreasing body cell mass (BCM) compared with subjects with a stable BCM. The degree of BCM reduction was strongly related to the number of additional ADLs lost at follow-up (test for trend, $p = .003$). In a sample of older disabled nursing home residents, signs of malnutrition seem to predict further worsening in functional status. Furthermore, BCM declines proportionally to the loss in ADLs, suggesting the existence of a strong relationship between BCM loss and the progressive deterioration of functional status.

Preventive Medical Treatments

0980

Shohat, Tamy, et al. Immunologic response to a single dose of tetanus toxoid in older people. *Journal of the American Geriatrics Society* 48(8):949-951, August 2000.

ANTITETANUS IMMUNIZATION. IMMUNOLOGICAL RESPONSE.

Several studies have demonstrated that a large percentage of older people are inadequately immunized against tetanus. The aim of this study was to assess the immunity against tetanus in a group of individuals aged 69 and older and to examine the immune response to a single dose of tetanus toxoid. A convenience sample of 115 residents of a large retirement home aged 69 and older was studied. After a blood sample for antitetanus antibody titer, a single dose of tetanus toxoid vaccine was administered. Repeat titers were obtained 6 weeks after the vaccination and analyzed by ELISA assay. Antibody levels equal to or greater than 0.1IU/mL were considered protective. Sixty-seven of 115 (58.3%) individuals had adequate antibody titers. Those individuals who reported having been vaccinated with tetanus toxoid in the past were more likely to be immunized adequately compared with those who reported having never been vaccinated (66.7% vs. 39.3%, $p = .02$). After vaccination, 34 of 46 (73.9%) individuals with inadequate antibody titers became seropositive. Those who remained seronegative had mean prevaccination antibody titers significantly lower than those who seroconverted. Sixteen of 17 (94.1%) persons who reported having been vaccinated in the past and were found to be seronegative developed adequate antibody titers

following vaccination, compared with only nine of 16 (56.2%) who reported never having been vaccinated ($p = .04$). There was no association between seroconversion rate and age, sex, underlying diseases, and army service. Most individuals will develop an adequate antitetanus antibody titer following administration of a single dose of tetanus vaccine. A history of past immunization is a good predictor of becoming adequately immunized. It is important that physicians follow the current recommendations for adult immunization and initiate campaigns to ensure that the older population is protected against tetanus.

Medical Treatments

0981

Sutaria, Nilesh, Andrew T. Elder, and Thomas R.D. Shaw. Mitral balloon valvotomy for the treatment of mitral stenosis in octogenarians. *Journal of the American Geriatrics Society* 48(8):971-974, August 2000.

FRAIL ELDERLY. MITRAL BALLOON VALVOTOMY. MITRAL STENOSIS.

This study sought to study the safety and benefit of mitral balloon valvotomy (MBV) in patients aged 80 years or more. The setting was a tertiary cardiac center. The design was a retrospective study of 20 octogenarians (mean age 83, range 80-89 years) in whom percutaneous MBV was performed as a definitive or palliative treatment for severe mitral stenosis. All were in New York Heart Association (NYHA) symptom class III or IV. Fourteen had been judged unfit for cardiac surgery. Hemodynamic data was recorded before and after MBV. Symptomatic outcome was documented at 1 month for all patients. Outcome at 1 year was available for 16 patients. Dilatation of the mitral valve was achieved in all patients without major complications. Mean mitral valve area increased 106% from 0.81 (1-0.3) to 1.67 (1-0.8) cm^2, transvalvular gradient decreased from 11.8 (± 4.8) to 5.6 (± 2.9) mm Hg, cardiac output increased from 3.1 (± 0. 6) to 4.1 (± 1.4) 1/min (all $P < .01$). One month after BMV, all patients were alive, and 16 of the 20 patients were improved by at least one NYHA class. This improvement was sustained in 7 of 16 patients followed up for 1 year. More severe mitral valve degenerative change, determined by echocardiography, was associated with poorer outcome. In this group of very old and frail patients, MBV was safe and resulted in significant immediate improvement. Sustained symptomatic benefit at 1 year was obtained in those with less extensive leaflet and subvalvular disease. In patients with severe degenerative valve disease on echocardiography, but unacceptable surgical risk, MBV offers short-term palliation.

Pharmaceuticals

0982

Castaño, Gladys, et al. Effects of policosanol in older patients with type II hypercholesterolemia and high coronary risk. *Journal of Gerontology: Medical Sciences* 56A(3):M186-M192, March 2001.

CARDIOVASCULAR DISORDER. HYPERCHOLESTEROLEMIA. POLICOSANOL.

The present study was undertaken to investigate the effects of policosanol in older patients with type 11 hypercholesterolemia and more than one concomitant atherosclerotic risk factor. After 6 weeks on a lipid-lowering diet, 179 patients randomly received a placebo or policosanol at doses of 5 followed by 10 mg per day for successive 12-week periods of each dose. Policosanol (5 and 10 mg/d) significantly ($p < .001$) reduced low-density lipoprotein cholesterol (LDL–C; 16.9% and 24.4%,

respectively) and total cholesterol (TC; 12.8% and 16.2%, respectively), while significantly ($p < .01$) increasing ($p < .001$) high-density lipoprotein cholesterol (HDL–C) by 14.6% and 29.1%, respectively. Policosanol significantly decreased ($p < .01$) the ratios of LDL–C to HDL–C (29.1%) and TC to HDL–C (28%) at study completion, although triglycerides remained unchanged. Policosanol, but not the placebo, significantly improved ($p = .01$) cardiovascular capacity, which was assessed using the Specific Activity Scale. No serious adverse experiences occurred in policosanol patients ($p < .01$), compared with seven adverse experiences (7.9%) reported by placebo patients. This study shows that policosanol is effective, safe, and well tolerated in older hypercholesterolemic patients.

Health Services

0983

Auchincloss, Amy H., Joan F. Van Nostrand, and Donna Ronsaville. Access to health care for older persons in the United States: personal, structural, and neighborhood characteristics. *Journal of Aging and Health* 13(3):329-354, August 2001.

HEALTH INSURANCE. HEALTH SERVICES. HEALTH SERVICES ACCESS. NEIGHBORHOOD CHARACTERISTICS.

This study sought to determine the contributions of personal, structural, and neighborhood characteristics to differential access to health care for older persons in the United States. In so doing, it used the 1994 National Health Survey of respondents aged 65 years or older ($N = 12,341$), 1990 census block data, and data on health professional shortage areas. Logistic regression was used to model the probability of problems accessing care. Findings revealed that the likelihood of access problems increased sharply with decreasing gradients of family income and for those lacking private health care insurance. Rural areas and poor areas were at a disadvantage in gaining access to care, whereas residents of neighborhoods that were homogeneous in ancestral heritage seemed better able to find care. Considering the high association between neighborhood and personal characteristics, it is notable that any neighborhood effects remained after combining them with personal effects.

0984

Browne, Colette V., and Kathryn L. Braun. When a case management program closes: impact as perceived by frail elders and their family caregivers. *Journal of Applied Gerontology* 20(3):338-355, Sept. 2001.

CAREGIVERS. CASE MANAGEMENT. FAMILY RELATIONS. FRAIL ELDERLY. HEALTH CENTER CLOSURE.

Geriatric case management programs benefit elders and their caregivers by providing technical and emotional support and linkages to services and financial assistance. This study used qualitative and quantitative data to document the perceived impact felt by clients and their families when this assistance is withdrawn. Attempts were made to contact all 205 former clients of a case management program in Honolulu 6 months after program closure. Of these, 118 were still living at home, 20 had entered nursing homes, 28 had died, and 39 were lost to the follow-up study. Compared with the previous 6-month period, the percentage who entered nursing homes was similar, whereas the percentage that died was higher. Half the responding caregivers reported deterioration of their own health and increased emotional fatigue. Data suggest that the program was perceived by elders and their caregivers to be a

critical component in providing support and maintaining the safety of frail elderly in their homes.

0985

Goins, R. Turner, et al. Access to health care and self-rated health among community-dwelling older adults. *Journal of Applied Gerontology* 20(3):307-321, Sept. 2001.

HEALTH SERVICES. HEALTH SERVICES ACCESS. HEALTH STATUS. SELF-REPORTS.

This study examined the relationship between access to health care and self-rated health among community-dwelling persons aged 65 years and older. The analysis was based on a sample of 2,982 participants from the Duke Established Populations for Epidemiologic Studies of the Elderly. The study was a secondary data analysis using longitudinal data gathered in 1987 and again in 1990. Logistic regression was used to determine change to poor self-rated health from excellent, good, or fair self-rated health. The principal finding revealed that in a multivariate model, one of the seven access-to-health indicators was found to be significantly related to reporting poor self-rated health status. Controlling for demographic characteristics and other potential confounders, the odds of reporting self-rated health were approximately 87% higher among those without private health coverage.

0986

Green, Carla A., and Clyde R. Pope. Effects of hearing impairment on use of health services among the elderly. *Journal of Aging and Health* 13(3):315-328, August 2001.

HEALTH SERVICES. HEARING IMPAIRMENT. IMPAIRED ELDERLY. SERVICE UTILIZATION.

This article seeks to address the effects of hearing impairment on health service use in an elderly population, controlling for factors associated with hearing difficulties known to affect utilization. Techniques employed were diagnoses of hearing impairment, psychological depression, and chronic illnesses were used to predict the volume and probability of any service use among 1,436 randomly selected 65-year-old health maintenance organization members. Findings indicated that hearing impairment substantially increased the likelihood of making at lease one visit to a health care provider (OR = 3.31, 95% CI = 1.55-7.06). Among those who made such visits, however, hearing impairment did not lead to use of additional services despite expectations to the contrary. Further research should explore the question whether underutilization of services exists and, if so, whether it stems from clinician or patient attitudes about the seriousness of hearing impairment, from a paucity of available treatment strategies, or from some combination of these and other factors.

0987

Hoek, J.F., et al. Health care for older persons, a country profile: the Netherlands. *Journal of the American Geriatrics Society* 48(2):214-217, Feb. 2000.

GERIATRIC PSYCHIATRY. HEALTH SERVICES. MEDICATION. NATION STATES. THE NETHERLANDS. NURSING HOMES.

In the Netherlands, there are four medical specialties—clinical geriatrics, nursing home medicine, social geriatrics, and geriatric psychiatry—that focus primarily on geriatric care. Nevertheless, and despite a high rate of institutionalization (8% of older

people are in residential or nursing homes), the general practitioner continues to act as the gatekeeper for additional intensive medical care services in most geriatric situations. The objective of this paper is to describe how medical care for older people functions in the Netherlands.

0988

Kane, Robert L., and Shirley Huck. The implementation of the EverCare demonstration project. *Journal of the American Geriatrics Society* 48(2):218-223, Feb. 2000.

DEMONSTRATION PROJECTS. HEALTH SERVICES. LONG-TERM CARE.

EverCare represents a creative approach to providing medical services to long-stay nursing home patients. It offers a capitated package of Medicare-covered services with more intensive primary care provided by nurse practitioners. The program's underlying premise is that better primary care will result in reduced hospital use. This work examines the implementation of the program in six locations. It identifies some of the issues that must be addressed if the program is to succeed both operationally and financially.

0989

Pacala, James T., et al. Using structured implicit review to assess quality of care in the Program of All-Inclusive Care for the Elderly (PACE). *Journal of the American Geriatrics Society* 48(8):903-910, August 2000.

PROGRAM EVALUATION. PROGRAM OF ALL-INCLUSIVE CARE FOR THE ELDERLY. QUALITY OF CARE.

This study sought to develop a quality assessment tool for care rendered to enrollees in the Program for All-Inclusive Care of the Elderly (PACE) that can discriminate care quality ratings across PACE sites. The design was a structured implicit review (SIR) of medical records by trained geriatricians and geriatric nurse practitioners. The setting consisted of eight PACE sites. Participants were older adults enrolled in a PACE program for at least 6 months ($N = 313$). Process and outcome measures for both overall care and 14 specific conditions (tracers) managed up to 1 year. Overall care quality was judged to be above a community standard in 56% and below standard in 8% of cases. Process of care was rated as very good or good in 70% of the cases. Outcomes depended on how questions were phrased: only 19% of cases improved, whereas 28% were judged to have fared better than expected given their condition at baseline. The SIR method produced ratings demonstrating considerable variability across the sites; three of the sites consistently showed poorer quality ratings than the other five. PACE care was generally assessed to be of good quality but with room for improvement. Despite significant limitations of poor interrater reliability for process of care measures, excessive time involved for the reviews, and lack of a control group, the SIR method was able to consistently discriminate quality ratings among PACE sites. A modified version of the assessment instrument could prove useful in a quality improvement program for PACE care.

0990

Wright, Paul J., et al. Delivery of preventive services to older Black patients using neighborhood health centers. *Journal of the American Geriatrics Society* 48(2):124-130, Feb. 2000.

BLACKS. CLEVELAND. HEALTH CENTERS. PREVENTIVE STRATEGIES. SERVICE UTILIZATION.

Older Black patients are at risk for under-utilization of preventive services. Our objectives were to assess the delivery of five preventive services in Title 330-funded health centers in low income neighborhoods in Cleveland, Ohio and to determine the association of health system factors and health status with the delivery of these services. The design was a cross-sectional study. The setting comprised four neighborhood health centers in low income neighborhoods of Cleveland, Ohio. Participants were a total of 683 Black men and women, aged 70 and older, who regarded the health center as their primary source of outpatient care. Demographic characteristics, independence in basic and instrumental activities of daily living, comorbidity scores, and perceived access were determined by telephone interview. We reviewed charts to determine whether each of five preventive service goals were obtained: influenza vaccination within 1 year; pneumococcal vaccination at any time; mammography within 2 years; Papanicolau screening within 1 year or twice at any time in the past with documentation of normal results; and fecal occult blood testing within 2 years. The defined goals for influenza vaccination, pneumococcal vaccination, mammography, Papanicolau screening, and fecal occult blood testing were achieved for 59%, 64%, 59%, 51%, and 17% of patients, respectively. Influenza and pneumococcal vaccines were obtained more often in persons with greater comorbidity. Mammography and Papanicolau smear were obtained more often in patients without ADL or IADL impairments. The four clinical sites varied substantially in the delivery of each preventive service. More frequent office visits were associated with greater delivery of all five preventive services. This relationship persisted in multivariable analyses controlling for health status and clinical site. This study shows that Title 330 federally supported neighborhood health center sites providing primary care to older Blacks in Cleveland achieved high rates of performance in four of the five recommended preventive services. In addition, preventive services practices were associated with prognostically relevant health status information. The frequency of office visits was related strongly and consistently to the performance of the various preventive services, indicating that more, not fewer, office visits may be necessary to achieve Healthy People 2000 targets.

Health Care Costs

0991

Boult, Chad, et al. The effect of case management on the costs of health care for enrollees in Medicare plus choice plans; a randomized trial. *Journal of the American Geriatrics Society* 48(8):996-1001, August 2000.

CASE MANAGEMENT. HEALTH CARE COSTS. MEDICARE. RANDOMIZED CONTROL TRIALS.

The aim of this study was to measure the effects of case management on an older population's costs of health care. The design was a 1-year randomized controlled trial. Included in the study were multiple sites of care in San Francisco, California.

Participants were patients aged 65 or older of primary care physicians in a large provider organization bearing financial risk for their care ($N = 6,409$). The intervention consisted of screening for high risk and provision of social work-based case management. The outcome measures used were volume and cost of hospital, physician, case management, and other health-related services. The experimental group used more case management services than the control group (0.09 vs. 0.02 months per person, $p < .001$). The experimental group's average total payments for health care were slightly lower ($3,148 vs. $3,277, $p = .40$). This study provides no statistically significant evidence that social work-oriented case management reduces the use or the cost of health care for high-risk older people. Other potentially favorable effects of this type of case management need to be evaluated, as do the effects of other types of case management.

Health Insurance

0992

Leutz, Walter N., John Capitman, and Carla A. Green. A limited entitlement for community care: how members use services. *Journal of Aging and Social Policy* 12(3):43-64, 2001.

HEALTH INSURANCE. HEALTH SERVICES. LONG-TERM CARE. SERVICE UTILIZATION.

This article seeks to demonstrate the ways in which members of three social health maintenance organizations (HMOs) use a limited entitlement for community-based long-term care to meet their needs and solve their problems. This article is based on in-home interviews with 48 aged Medicare beneficiaries who joined social HMOs and are eligible for the entitlement. Members' experiences with case management (called "service coordination"), benefits for covered services, and cost-sharing requirements are explored. Members (and their informal caregivers) are found to have complex lives in which community care visits do (or do not) fit in various ways, depending on preferences, experiences with providers, informal care, financial resources, and other factors. The authors provide insight into the kinds of problems people want to solve and how community care systems can be better designed to empower service users to solve them.

0993

Mellor, Jennifer M. Private long-term care insurance and the asset protection motive. *The Gerontologist* 40(5):596-604, Oct. 2001.

FRAIL ELDERLY. LONG-TERM CARE INSURANCE. PRIVATE SECTOR.

This research examined the role of assets in the decision to purchase insurance for long-term care using survey data from the Asset and Health Dynamics Among the Oldest Old (AHEAD) study. Previous research suggests that assets matter, but the size and direction of the effect varies. An important issue regarding the role of assets has not been explored adequately-whether the effect of assets differs between less wealthy and very wealthy individuals. A methodology to control for this type of variation is employed in this analysis. Results suggest that increases in assets have the greatest influence on the probability that less wealthy individuals own long-term care insurance, and have a negligible impact on the wealthy. This has important implications for policies designed to increase long-term care insurance ownership.

0994

Phillips, V.L., et al. Health care utilization by old-old long-term care facility residents: how do Medicare fee-for-service and capitation rates compare? *Journal of the American Geriatrics Society* 48(10):1330-1336, Oct. 2000.

HEALTH SERVICES. MEDICARE. NURSING HOME RESIDENTS. SERVICE UTILIZATION.

This study sought to describe the health care utilization of a long-term care population receiving primary and specialty care in a closed system and to compare Medicare fee-for-service (FFS) reimbursement with the amount that would have been paid under capitation for these services. A life care community in California composed of two facilities, both having residential care and nursing facility (NF) beds. Participants were residents (N = 700) living in the community between September 1995 and February 1996. Data on Medicare Part A and Part B reimbursements were gathered from billing records for hospitalizations based on diagnostic related group payments, primary and specialty care visits, various procedures, diagnostic tests, and therapeutic services. These data were compared with what the facility, in collaboration with the providers and an affiliated hospital, would have received under Medicare capitated rates at that time. Annually, residents averaged 16.3 primary care visits, 7.7 specialist visits, and 3,453 hospital days per thousand. Nursing facility residents received significantly more primary care than did those in residential care. Total Medicare Part A and B payments per resident per month averaged $558. The monthly capitation rate in effect at the time for this population was substantially higher at $1,085, generating an annual "risk pool" of $9.1 million. Care provided in the two facilities varied greatly. Hospitalization rates, clinic-based primary care and specialist visits, and therapy sessions were greater in facility 1. Overall expenditures were lower for residents at facility 2, where the majority of care was provided by trained geriatricians in collaboration with physician extenders and without sophisticated clinical pathways and utilization controls. Our data support other studies that suggest that teams of geriatricians and physician extenders can reduce hospitalization rates and overall expenditures. Capitated rates for the frail, geriatric population warrant careful study. These rates must balance fiscal responsibility with the need for adequate, risk-adjusted payments that create incentives for providers to produce high quality as well as cost-effective care.

NEUROPSYCHOLOGY OF AGING

Brain and Behavior

0995

McNay, Ewan C., and Paul E. Gold. Age-related differences in hippocampal extracellular fluid glucose concentration during behavioral testing and following systemic glucose administration. *Journal of Gerontology: Biological Sciences* 56A(2):B66-B71, Feb. 2001.

AGE DIFFERENCES. BEHAVIORAL ANALYSIS. BRAIN. COGNITIVE PROCESSES. EXTRACELLULAR FLUID GLUCOSE. HIPPOCAMPUS.

Recent evidence indicates that the level of glucose in the brain's extracellular fluid (ECF) is not constant, as traditionally thought, but fluctuates. We determined the effect of aging on hippocampal ECF glucose before, during, and after spatial memory testing. Fischer-344 rats (24 months old) showed a greater decrease in ECF glucose than 3-month-old rats (48% vs. 12%); the decrease seen in 24-month old rats

persisted for much longer following testing. These changes were associated with an age-related deficit in spontaneous alternation performance. Following systemic glucose administration, the decrease in ECF glucose was reversed in both aged and young rats, and performance in aged versus young rats following glucose administration did not differ. These findings suggest that increased susceptibility to depletion of ECF glucose in aged rats may contribute to age-related deficits in learning and memory and that administration of glucose may enhance memory by providing additional glucose to the brain at times of increased cognitive demand.

Attention Structure

0996

Levy, Becca R., Patricia Jennings, and Ellen J. Langer. Improving attention in old age. *Journal of Adult Development* 8(3):189-192, July 2001.

AGING. ATTENTION STRUCTURE. COGNITIVE PROCESSES.

The aim of this study was to examine whether a mindful intervention based on noticing distinctions could be used to improve the attention of older individuals. Participants were randomly assigned to one of four attention interventions. In the mindfulness group, participants studying a set of pictures were told to notice either three or five distinctions. In the control groups, participants were either told to pay attention or were not given any directions related to attention before exposure to the set of pictures. The results indicated that those who viewed the stimuli in terms of distinctions were able to remember significantly more pictures than those in the control groups. Distinction drawing also increased liking for the stimuli. The findings suggest that if older individuals want to increase attention and recall, rather than focus their attention, they may want to find ways to vary their attention.

Cognition and Learning

0997

Berr, Claudine, et al. Cognitive decline is associated with systemic oxidative stress: the EVA Study. *Journal of the American Geriatrics Society* 48(10):1285-1291, Oct. 2000.

COGNITIVE IMPAIRMENT. ÉTUDE DU VIEILLISSEMENT ARTBRIEL. FRANCE. NANTES, FRANCE. SYSTEMIC OXIDATIVE STRESS.

This study sought to determine whether systemic oxidative stress status is associated with cognitive decline. The design was a longitudinal population-based study. This was a cohort study of older subjects in Nantes, France. Participating were a total of 1166 high cognitive functioning subjects aged 60 to 70 in the Étude du Vieillissement Artbriel (EVA) cohort with a 4-year follow-up. Subjects completed a baseline interview and a global cognitive test (Mini-Mental Status Examination [MMSE]). Blood samples were obtained at baseline to determine plasma levels of selenium, carotenoids, thiobarbituric acid reactant substances (TBARS), an indicator of lipoperoxidation, and red blood cell vitamin E. Risk of cognitive decline, defined as a loss of 3 points in MMSE score between baseline and the 4-year follow-up, was assessed by oxidative stress level. Subjects with the highest levels of TBARS show an increased risk of cognitive decline (adjusted odds ratio [OR] = 2.25; confidence interval [CI] 95% = 1.26-4.02). This result is reinforced in the lower antioxidant status subgroup. Subjects with low levels of selenium have an increased risk of cognitive decline (OR = 1.58; CI 95% = 1.08-2.31) after adjustment for various confounding

factors. These results suggest that increased levels of oxidative stress and/or antioxidant deficiencies may pose risk factors for cognitive decline. The direct implication of oxidative stress in vascular and neurodegenerative mechanisms that lead to cognitive impairment should be further explored.

0998

Charness, Neil, et al. Word-processing training and retraining: effects of adult age, experience, and interface. *Psychology and Aging* 16(1):110-127, March 2001.

ADULTHOOD. AGE DIFFERENCES. COMPUTER INTERFACE. TRAINING. WORD PROCESSING. WORK EXPERIENCE.

Novice (Experiment 1) and experienced (Experiment 2) young, middle-aged, and older adults learned a new word-processing application in keystrokes, menus, or menus-plus-icons interface conditions. Novices showed strong age differences in the time to complete the 3-day tutorial and in declarative and procedural tests of word-processing knowledge. Menus and menus-plus-icons were superior to keystrokes conditions, though interface did not interact with age. Experienced users showed age-related slowing in learning rate but minimal age differences in test performance when retrained on a new word-processing program. Age and computer experience accounted for much of the variance in both learning time and word-processing performance; interface type, speed of processing, and spatial generation ability made additional contributions. Experience interacted with age to predict performance. Implications for training and retraining older workers are discussed.

0999

Freedman, Vicki A., Hakan Aykan, and Linda G. Martin. Aggregate changes in severe cognitive impairment among older Americans: 1993 and 1998. *Journal of Gerontology: Social Sciences* 56B(2):S100-S111, March 2001.

COGNITIVE IMPAIRMENT. FUNCTIONAL CHANGE. IMPAIRED ELDERLY. SEVERE COGNITIVE IMPAIRMENT.

This study explored whether improvements in cognitive functioning occurred during the 1990s among older Americans and investigated several possible explanations for such changes. Using the 1993 Asset and Health Dynamics of the Oldest Old study ($n = 7,443$) and 1998 Health and Retirement Survey ($n = 7,624$), this study examined aggregate changes in the proportion of the noninstitutionalized population aged 70 and older with severe cognitive impairment. Impairment was measured for self-respondents using a modified version of the Telephone Interview Cognitive Screen; for proxy respondents, ratings of memory and judgment were used. Logistic regression was used to investigate potential explanations for aggregate changes. The percentage of older Americans with severe cognitive impairment declined from 6.1% in 1993 to 3.6% in 1998 ($p < .001$). The decline was statistically significant among self-respondents but not among those with proxy interviews. Improvements between 1993 and 1998 were not explained by shifts in demographic and socioeconomic factors or by changes in the prevalence of stroke, vision, or hearing impairments. As a group, older persons, especially those well into their eighties, appear to have better cognitive functioning today than they did in the early 1990s.

1000

Gaeta, Helen, et al. An event-related potential evaluation of involuntary attentional shifts in young and older adults. *Psychology and Aging* 16(1):55-68, March 2001.

AGE DIFFERENCES. ATTENTION STRUCTURE. INVOLUNTARY RESPONSE. YOUNG ADULTS.

Involuntary shifts in attention to irrelevant stimuli were studied in elderly and young volunteers during a dichotic-listening task. Event-related potentials and behavioral measures were recorded. Volunteers heard pairs of tones presented with 2 different stimulus onset asynchronies (SOAs). To-be-ignored tones were presented to the left ear, followed by to-be-attended tones to the right ear. Left-ear tones were a frequent standard (700 Hz) and an infrequent small (650 Hz) and large (500 Hz) deviant. Right-ear tones (1500 Hz) were presented with 2 equiprobable intensities. Volunteers responded to the lower intensity stimulus. Behavioral performance was impaired at the short SOA when to-be-ignored large deviants preceded to-be-attended targets, but more so for the elderly volunteers. Large deviants also elicited the mismatch negativity (MMN) and P3a for both age groups. It was concluded that the more impaired behavioral performance observed for the elderly was due to greater sensitivity to output from the MMN system by a frontal lobe system responsible for the maintenance of attentional focus.

1001

Stine-Morrow, Elizabeth A.L., et al. Patterns of resource allocation are reliable among younger and older readers. *Psychology and Aging* 16(1):69-84, March 2001.

AGE DIFFERENCES. ELDERLY. READING COMPREHENSION. RESOURCE ALLOCATION. TASK PERFORMANCE. YOUNG ADULTS.

Younger and older adults read short expository passages across 2 times of measurement for subsequent comprehension or recall. Regression analysis was used to decompose word-by-word reading times into resources allocated to word- and textbase-level processes. Readers were more sensitive to these demands when reading for recall than when reading for comprehension. Patterns of resource allocation showed good test-retest reliabilities and were predictive of memory performance. Within age group, resource allocation parameters were not systematically correlated with other individual-difference measures, suggesting that strategies of on-line resource allocation may be a unique source of individual differences in determining comprehension of and memory for text. Age differences in allocation patterns appeared to reflect general slowing among the older adults. Because older adults showed equivalent memory performance to that of younger readers, the reading time data may represent the on-line resource allocation needed for comparable outcomes among older and younger readers.

1002

Yano, Katsuhiko, et al. The effects of childhood residence in Japan and testing language on cognitive performance in late life among Japanese American men in Hawaii. *Journal of the American Geriatrics Society* 48(2):199-204, Feb. 2000.

CHILDHOOD RESIDENCE. COGNITIVE PROCESSES. HAWAII. JAPANESE AMERICANS. LIFE CYCLE. MEN. TEST PERFORMANCE.

This study sought to examine the association of years spent in Japan during childhood with cognitive test performance in late life among Japanese American men, and

to assess the influence of the language used for testing on this association. The design was a cross-sectional study. Participating were a total of 3734 Japanese American men, aged 71-93 years, who were first- or second-generation migrants and living on Oahu Island, Hawaii. The outcome variable was cognitive test performance assessed using the Cognitive Abilities Screening Instrument (CASI), which was developed for cross-cultural studies of cognitive impairment. The explanatory variable of main interest was the number of years spent in Japan during school-age childhood years (ages 6-17). The associations of CASI scores with childhood years in Japan was evaluated using a stepwise multiple linear regression model in which a total of 40 potential confounders were included as covariates. In the total sample, there was an inverse association between CASI scores and middle childhood years in Japan. This association remained significant after controlling for age, education, socioeconomic status, traditional Japanese food consumption, pulmonary function, apolipoprotein E4, proficiency in speaking Japanese, and other possible confounders. When data were analyzed separately for subgroups according to the language preferred at testing (English or Japanese), associations between childhood years in Japan and CASI scores were in opposite directions negative for the group tested in English and positive for the group tested in Japanese. The interaction between the testing language and childhood years in Japan was statistically significant. There was an inverse association between years spent in Japan during school-age years of childhood and cognitive test performance in late life. This association could not be accounted for by age, education, or other confounding factors. However, this finding was not observed in participants who preferred being tested in Japanese. To assess cognitive test performance in older people, it is of prime importance to use the most optimal language for testing, usually the subject's native language.

Retention and Retrieval

1003

Caplan, Leslie J., and Carmi Schooler. Age effects on analogy-based memory for text. *Experimental Aging Research* 27(2):151-165, April-June 2001.

ANALOGIES. ELDERLY. LEARNING PROCESSES. MEMORY. MIDDLE-AGED ADULTS. TEXTUAL MEMORY. YOUNG ADULTS.

We examined age influences on analogy-based learning, in particular, analogy-based text memory. Adults (20-72 years) read pairs of passages describing analogous topics. We manipulated encoding complexity for the first passage and superficial topic similarity between passages and assessed second-passage memory. Across all age groups, memory was better in the superficially similar topic condition only when encoding complexity had been simple. More critically, performance was better for similar topics only for the youngest adults. Younger adults performed worse than older adults in the dissimilar condition. Thus, only older adults identified and used the parallels between passages spontaneously.

1004

Clarnette, Roger M., et al. Clinical characteristics of individuals with subjective memory loss in Western Australia: results from a cross-sectional survey. *International Journal of Geriatric Psychiatry* (UK) 16(2):168-174, Feb. 2001.

COGNITIVE PROCESSES. CROSS-SECTIONAL STUDIES. MEMORY LOSS. WESTERN AUSTRALIA.

Subjective memory complaint is common in later life. Its relationship to future risk of dementia is unclear, although many reports have found a positive association. We designed the present cross-sectional survey to investigate the clinical features associated with subjective memory impairment. One hundred and eight volunteers and 38 noncomplainers acting as age-matched controls were recruited. Eleven subjects with memory complaints were excluded because of prior stroke or low MMSE score. The CAMCOG was used to measure cognition; complainers had significantly lower scores ($p < 0.001$). Univariate analysis showed that complainers had greater prevalence of depression, anxiety, insomnia, psychotic phenomenon, difficulties with ADL and word-finding difficulties. The frequency distribution of the apolipoprotein E ε4 allele was similar for both groups ($p = 0.469$). Logistic regression analysis indicated that CAMCOG scores ($p = 0.002$) and word-finding difficulty ($p = 0.002$) were independently associated with memory complaints. These results show that memory complainers have worse cognitive performance than noncomplainers and support the findings of other studies that suggest that subjective memory loss may be a reliable indicator of cognitive decline.

1005

Karpel, Mara E., William J. Hoyer, and Michael P. Toglia. Accuracy and qualities of real and suggested memories: nonspecific age differences. *Journal of Gerontology: Psychological Sciences* 56B(2):P103-P110, March 2001.

AGE DIFFERENCES. ELDERLY. MEMORY. MIDDLE-AGED ADULTS. TASK PERFORMANCE. VERIDICAL MEMORY. YOUNG ADULTS.

This study examined adult age differences in the accuracy, confidence ratings, and vividness ratings of veridical and suggested memories. After seeing either one or two exposures of a vignette depicting a theft, young adults ($M = 19$ years) and older adults ($M = 73$ years) were given misleading information that suggested the presence of particular objects in the episode. Memory accuracy was higher for younger adults than for older adults, and the frequency of falsely reporting the presence of suggested objects was greater for older adults than for young adults. Further, levels of confidence and vividness ratings of the perceptual attributes (colors, locations) of falsely recognized items were higher for older adults than for young adults. Both young adults and older adults used more perceptual references when describing veridical memories than when describing suggested memories. Age differences in the suggestibility of memory were attributed to nonspecific or nondissociated memory aging effects.

1006

Kemtes, Karen A., and Susan Kemper. Cognitive construct measurement in small samples of younger and older adults: an example of verbal working memory. *Experimental Aging Research* 27(2):167-180, April-June 2001.

COGNITIVE CONSTRUCT MEASUREMENT. COGNITIVE PROCESSES. ELDERLY. MEMORY. SAMPLE SIZE. VERBAL WORKING MEMORY. YOUNG ADULTS.

An important issue in experimental aging research is the accurate measurement of cognitive constructs, particularly in small-sample studies. Latent variable modeling approaches to assessing age-based construct similarity are difficult to implement in smaller-scale studies, which tend to have small samples and measurement of a single construct. We discuss factor score comparison methods for assessing age-based construct similarity that may be more appropriate for small-scale studies. We then examine these methods for a series of single factor models of verbal working memory (VWM) based on data from three separate studies in which small samples of younger and older adults' completed VWM-based tasks. Our single factor models accounted well for the associations among the sets of VWM tasks. This construct was also measured well across age groups and different samples. Our analyses suggest that factor score comparison methods may be useful for small-scale studies that require assessment of age-based measurement similarity in cognitive constructs.

1007

Radvansky, Gabriel A., et al. Situation models and aging. *Psychology and Aging* 16(1):145-160, March 2001.

AGE DIFFERENCES. AGING. INFORMATION RETRIEVAL. MEMORY. SITUATIONAL ANALYSIS. YOUNG ADULTS.

Younger and older adults were tested for their ability to process and retrieve information from texts. The authors focused on the construction and retrieval of situation models relative to other types of text representations. The results showed that during memory retrieval, younger adults. showed superior memory for surface form and text-base knowledge (what the text was), whereas older adults had equivalent or superior memory for situation model information (what the text was about). The results also showed that during reading, older and younger adults were similar in their sensitivity to various aspects of the texts. Overall, these findings suggest that although there are age-related declines in the processing and memory for text-based information, for higher level representations, these abilities appear to be preserved. Several possibilities for why this is the case are discussed, including an in-depth consideration of one possibility that involves W. Kintsch's (1988) construction-integration model.

1008

Schmidt, Iris, Ina J. Berg, and Betto G. Deelman. Prospective memory training in older adults. *Educational Gerontology* 27(6):455-478, July/August 2001.

MEMORY TRAINING. PROGRAM EVALUATION. TRAINING TECHNIQUES.

The authors evaluate the results of a training program for perspective remembering. The goal of the training was to improve prospective memory by associating cues

from the retrieval situation with the information to be remembered. The training group consisted of 20 participants between 45 and 81 years of age. The effects of strategy training were compared with those of an educational training group ($n = 23$, age range 45 to 84 years) directed at reducing worries about forgetfulness, and a retest control group ($n = 22$, age range 46 to 74 years). The educational training and retest control groups did not differ in demographical characteristics and test performance and were combined into one test group. The objective effects of training were evaluated with a telephone task that had to be performed in the daily life situation, and a prospective categorization task was performed in the laboratory. Despite the low reliability of the prospective tasks, a significant but small effect of training when compared with the combined control group was found on the sum score of prospective tests. The training effect was not related to age or pretraining performance level. At the 3-months follow-up study, however, performance of the control group had increased to the level of the trained group.

1009

Verhaeghen, Paul, Nathalie Geraerts, and Alfons Marcoen. Memory complaints, coping, and well-being in old age: a systemic approach. *The Gerontologist* 40(5):540-548, Oct. 2000.

COPING BEHAVIOR. MEMORY IMPAIRMENT. PSYCHOLOGICAL AGING. PSYCHOLOGICAL WELL-BEING. RESEARCH TECHNIQUES.

A study on memory complaints (as measured by selected subscales of the Metamemory in Adulthood Questionnaire) and its context was conducted on 179 older adults. A path analysis showed that memory complaints influence coping behavior through memory-related anxiety and perceived seriousness of complaints and that both memory complaints and coping influence well-being. Locus of control was found to be the most important antecedent variable in the model.

1010

Waters, Gloria S. Age, working memory, and on-line syntactic processing in sentence comprehension. *Psychology and Aging* 16(1):128-144, March 2001.

AGE DIFFERENCES. SENTENCE COMPLETION. SYNTAX. WORKING MEMORY.

One hundred twenty-seven individuals who ranged in age from 18 to 90 years were tested on a reading span test and on measures of on-line and off-line sentence processing efficiency. Older participants had reduced working-memory spans compared with younger participants. The on-line measures were sensitive to local increases in processing load, and the off-line measures were sensitive to the syntactic complexity of the sentences. Older and younger participants showed similar effects of syntactic complexity on the on-line measures. There was some evidence that older participants were more affected than younger participants by syntactic complexity on the off-line measures. The results support the hypothesis that on-line processes involved in recognizing linguistic forms and determining the literal, preferred, discourse-coherent meaning of sentences constitute a domain of language processing that relies on its own processing resource or working-memory system.

Language Ability

1011

Brébion, Gildas. Language processing, slowing, and speed/accuracy trade-off in the elderly. *Experimental Aging Research* 27(2):137-150, April-June 2001.

AGE DIFFERENCES. ELDERLY. LANGUAGE ABILITY. REACTION TIME. RESPONSE ACCURACY. RESPONSE SPEED. YOUNG ADULTS.

Previous studies have suggested that longer response times in older adults could be partly due to increased caution in responding, with a propensity to emphasize accuracy to the detriment of speed. A study was carried out in 30 young and 30 older adults in order to determine whether shifting the response criterion relative to the speed/accuracy trade-off toward a more risky strategy would significantly reduce age-related differences in response time. The experimental procedure involved the detection of incongruous sentences, either with or without a mnemonic preload. Instructions emphasized alternatively speed or accuracy. Results showed that whatever the instructions, older adults remained consistently much slower than young adults, and a little more accurate. When instructed to emphasize speed, they never managed to reduce the response time difference relative to young adults. It is concluded that the more cautious approach in older adults is required to attenuate the adverse effects of a slower processing system.

1012

Doose, Guillaume, and Pierre Feyereisen. Task specificity in age-related slowing: word production versus conceptual comparison. *Journal of Gerontology: Psychological Sciences* 56B(2):P85-P87, March 2001.

AGING. CONCEPTUAL COMPARISON. LANGUAGE ABILITY. WORD PRODUCTION.

We analyzed age-related slowing in 29 younger (M = 22 years) and 30 older adults (M = 70 years) who performed a conceptual comparison task, a naming task, and a simple reaction time task. Both vocal and manual responses were elicited in all except the naming task. Results did not support the hypothesis that there is greater age-related slowing in comparison tasks than in production tasks. In contrast, we found an interaction between age and response modality in the conceptual comparison task. Response latencies of younger participants were shorter in the manual modality, whereas those of older participants were shorter in the vocal modality. In the simple reaction time task manual responses were faster in the two age groups. These findings are discussed in relation to models assuming task-specific slowing factors.

1013

Pilotti, Maura, Tim Beyer, and Mariya Yasunami. Encoding tasks and the processing of perceptual information in young and older adults. *Journal of Gerontology: Psychological Sciences* 56B(2):P119-P128, March 2001.

AGE DIFFERENCES. ELDERLY. ENCODING TASK. PERCEPTION. YOUNG ADULTS.

This study examined the degree to which different tasks promote the encoding of the characteristics of a talker's voice in young and older adults, and whether these characteristics encoded in long-term memory facilitate spoken word identification under difficult listening conditions. During the encoding phase, participants were given extensive exposure to the voices of two talkers and performed tasks that focused their attention on either voice characteristics (explicitly or incidentally) or linguistic

information. Subsequently, participants identified novel words masked by noise, half of which were spoken by one of the familiar talkers and half by an unfamiliar talker. Young adults identified with greater accuracy words spoken in a familiar voice, whereas older adults benefited from voice familiarity only under instructions that promoted attention to voice characteristics either explicitly or incidentally. Age-related declines in sensory uptake (hearing loss) accounted for most of these task-dependent voice effects.

PSYCHIATRIC DYSFUNCTIONS AND TREATMENT

Psychodiagnosis

1014

Aarsland, Dag, Jeffrey L. Cummings, and Jan P. Larsen. Neuropsychiatric differences between Parkinson's disease with dementia and Alzheimer's disease. *International Journal of Geriatric Psychiatry* (UK) 16(2):184-191, Feb. 2001.

ALZHEIMER'S DISEASE. COMPARATIVE ANALYSIS. CROSS-SECTIONAL STUDIES. DEMENTIA. NEUROPSYCHIATRY. PARKINSON'S DISEASE.

This study sought to compare the profile of neuropsychiatric symptoms in patients with Parkinson's disease with dementia (PDD) and patients with Alzheimer's disease (AD). This study consisted of a cross-sectional survey of a population-based sample of patients with PDD and AD patients matched for age, sex, and Mini-Mental State Examination (MMSE) score. Patients were diagnosed according to published criteria for PD and AD. The diagnosis of dementia in PD was made according to *DSM-III-R*, and was based on clinical interview of the patient and a relative, psychometric testing (including MMSE, Dementia Rating Scale and tests assessing memory, executive functions and visuospatial functioning) and physical examination. The Neuropsychiatric Inventory (NPI) was administered to all patients. One or more psychiatric symptoms was reported in 95% of AD and 83% of PDD patients. Hallucinations were more severe in PD patients, while aberrant motor behavior, agitation, disinhibition, irritability, euphoria, and apathy were more severe in AD. In PDD, apathy was more common in mild Hoehn and Yahr stages, while delusions increased with more severe motor and cognitive disturbances. In PDD, only delusions correlated with the MMSE score. Neuropsychiatric symptoms are common and severe in patients with PDD, with important implications for the management of these patients. AD and PDD patients have different neuropsychiatric profiles, suggesting different underlying mechanisms. Cognitive impairment, psychopathology, and motor features progress independently in PDD patients.

1015

Beck, Cornelia, et al. Dementia diagnostic guidelines: methodologies, results, and implementation costs. *Journal of the American Geriatrics Society* 48(10):1195-1203, Oct. 2000

COSTS OF DIAGNOSIS. DEMENTIA. DIAGNOSTIC IMPLEMENTATION. DIAGNOSTIC STANDARDS. PSYCHODIAGNOSIS. RESEARCH METHODOLOGY.

This study sought to facilitate the diagnostic process for dementia. Five guidelines and four consensus statements on specific diagnostic recommendations, specialist referral recommendations, and costs of recommended diagnostic procedures were compared and summarized. A MEDLINE search from 1984 to 1999 and queries to

experts yielded 14 guidelines and consensus statements that addressed the diagnosis of dementia. Only nine documents which had national or international scopes were reviewed. Comparisons were made on the specific diagnostic criteria for patient history, clinical examination, functional assessment, laboratory tests, neuroimaging, and other diagnostic tests, as well as specialist referral recommendations and costs for the recommended diagnostic procedures. The first three authors reviewed independently each document and completed a table on specific recommendations in each document. To settle disagreements about specific recommendations, they discussed them until they reached a consensus. To interpret the intent of vague statements, they used their best judgment. The documents differed in content, recommendations, and development methodology. They were based on either expert opinion or scientific evidence, or both. Although the nine documents were nearly unanimous in several recommendations, including assessing the presenting problem, taking a medical history, conducting physical and neurological examinations, and assessing the patient's mental and cognitive status, considerable differences in recommendations were common. Such differences led to large differentials in the estimated costs (range, $190 to $2,001) for recommended diagnostic assessments. A systematic approach to diagnostic recommendations for dementia may induce greater consistency among guidelines and consensus statements. The current approach leads to considerable variability in recommendations and estimated costs.

1016

Earnst, Kelly S., Daniel C. Marson, and Lindy E. Harrell. Cognitive models of physicians' legal standard and personal judgements of competency in patients with Alzheimer's disease. *Journal of the American Geriatrics Society* 48(8):919-927, August 2000.

ALZHEIMER'S DISEASE. COGNITIVE PROCESSES. LEGAL COMPETENCY. RESEARCH TRENDS.

This study sought to investigate measures of patient cognitive abilities as predictors of physician judgments of medical treatment consent capacity (competency) in patients with Alzheimer's disease (AD).The design comprised predictor models of legal standards (LS), and personal competency judgments were developed for each study physician using independent neuropsychological test measures and logistic regression analyses. The setting for the study was a university medical center. Participants were give physicians with experience assessing the competency of AD patients were recruited to make competency judgments of videotaped vignettes from 10 older controls and 21 patients with AD (10 with mild and 11 with moderate dementia). The 31 patient and control videotapes of performance on a measure of treatment consent capacity (Capacity to Consent to Treatment Instrument [CCTI]) were rated by the five physicians. The CCTI consists of two clinical vignettes (A-neoplasm and B-cardiac) that test competency under five LS. Each study physician viewed each vignette videotape individually, made judgments of competent or incompetent under each of the LS, and then made his/her own personal competency judgment. Physicians were blinded to participant diagnosis and neuropsychological test performance. Stepwise logistic regression was conducted to identify cognitive predictors of each physician's LS and personal competency judgments for Vignette A using the full sample ($N = 31$). Classification logistic regression analysis was used to determine how well these cognitive predictor models classified each physician's competency judgments for Vignette A.

These classification models were then cross-validated using physician's Vignette B judgments. Cognitive predictor models for Vignette A competency judgments differed across individual physicians, and were related to difficulty of LS and to incompetency outcome rates across LS for AD patients. Measures of semantic knowledge and receptive language predicted judgments under less difficult LS of evidencing a treatment choice (LS1) and making the reasonable treatment choice (LS2). Measures of semantic knowledge, short-term verbal recall, and simple reasoning ability predicted judgments under more difficult and clinically relevant LS of appreciating consequences of a treatment choice (LS3), providing rational reasons for a treatment choice (LS4), and understanding the treatment situation and choices (LS5). Cognitive models for physicians' personal competency judgments were virtually identical to their respective models for LS5 judgments. For AD patients, short-term memory predictors were associated with high incompetency outcome rates (over 70%), a simple reasoning measure was associated with moderately high incompetency outcome rates (60-70%), and a semantic knowledge measure was associated with lower incompetency outcome rates (30-60%). Overall, single predictor models were relatively robust, correctly classifying an average of 83% of physician judgments for Vignette A and 80% of judgments for Vignette B. Multiple cognitive functions predicted physicians' LS and personal competency judgments. Declines in semantic knowledge, short-term verbal recall, and simple reasoning ability predicted physicians' judgments on the three most difficult and clinically most relevant LS (LS3-LS5), as well as their personal competency judgments. Our findings suggest that clinical assessment of competency should include evaluation of semantic knowledge, verbal recall, and simple reasoning abilities.

1017

Hooker, Karen, et al. Does type of disease matter? Gender differences among Alzheimer's and Parkinson's disease spouse caregivers. *The Gerontologist* 40(5):568-573, Oct. 2000.

ALZHEIMER'S DISEASE PATIENTS. CAREGIVERS. GENDER DIFFERENCES. MARITAL RELATIONS. PARKINSON'S DISEASE PATIENTS.

Purpose of study: Mental health outcomes are widely reported among spouse caregivers, with wives generally faring worse than husbands. We hypothesized that gender differences would not be as strong in a cognitively intact group because caring for cognitively intact spouses may involve less severe reciprocity losses. We also examined gender differences in coping strategies within each group. Design and method: 175 spouse caregivers for patients with Alzheimer's disease (AD; $n = 88$) and Parkinson's disease (PD; $n = 87$) were interviewed. Participants completed perceived stress (PSS), depression (CES-D), state anxiety (STAI, Form Y), and coping strategies (WCCL-R) measures. Wives in the AD group reported significantly worse mental health outcomes than husbands, while wives and husbands in the PD group showed no differences. AD caregiving wives were less likely than husbands to use problem-focused coping strategies. There were no significant gender differences in either group for social support or emotion-focused coping. Loss of reciprocity in marital relationships may affect women more negatively than men. Future studies that address underlying mechanisms of gender differences and focus on similar caregiving situations and contexts deserve attention.

1018

Johnson, Mitzi M.S., Sarah B. Wackerbarth, and Frederick A. Schmitt. Revised memory and behavior problems checklist. *Clinical Gerontologist* 22(3/4):87-108, 2000.

BEHAVIORAL DISORDERS. BLESSED-ROTH DEMENTIA SCALE. COGNITIVE IMPAIRMENT. MEMORY DISORDERS. MINI-MENTAL STATE EXAMINATION.

This study sought to examine the usefulness, reliability, and validity of the Revised Memory and Behavior Problems Checklist (Teri et al., 1992). Analyses included data from 952 patients. Cronbachs' alphas for sub-scales ranged from .80 to .99; factor analysis confirmed the structure of scales. Significant correlations with MMSE, parts of the Blessed-Roth Dementia Scale, and ratings of patient and caregiver functioning indicate good construct validity. Differences among mild, moderate and severe staged patients also indicate good validity. However; invariance across follow-up visits may be problematic for those using the scale to measure change due to disease progression, treatments or other interventions.

1019

Marson, Daniel C., et al. Consistency of physicians' legal standard and personal judgments of competency in patients with Alzheimer's disease. *Journal of the American Geriatrics Society* 48(8):911-918, August 2000.

ALZHEIMER'S DISEASE. LEGAL COMPETENCY. PATIENT COMPETENCE. PHYSICIAN JUDGMENT. PHYSICIANS.

This study sought to investigate the consistency of physician judgments of treatment consent capacity (competency) for patients with Alzheimer's disease (AD) when specific legal standards (LS) for competency are used and to identify the LS most clinically relevant to experienced physicians. Control and AD patient participants were videotaped being administered a measure of capacity to consent to medical treatment. Study physicians viewed videotapes of these assessments individually and made competency judgments for each participant under different LS followed by their own personal judgment of competency. The setting for the study was a university medical center. Participants were 10 older controls and 21 patients with AD (10 with mild and 11 with moderate AD). Five physicians with experience assessing the competency of AD patients were recruited from the geriatric psychiatry, geriatric medicine, and neurology services of a university medical center. The 31 participants were videotaped performing on a measure of treatment consent capacity (Capacity to Consent to Treatment Instrument) (CCTI). The CCTI consists of two clinical vignettes (A-neoplasm and B-cardiac) that test competency under five LS. Vignette A and B assessments were videotaped separately for each participant (total videotapes for sample = 62). Each study physician viewed each videotaped vignette individually, made judgments under each of the LS (competent or incompetent), and then made his/her own personal competency judgment. Physicians were blinded to participant diagnosis. Within participant group, consistency of physician judgments was evaluated across LS and personal judgments using percentage agreement and kappa. Agreement between personal and LS judgments for the AD group was evaluated for each physician using logistic regression. As expected, physicians as a group generally demonstrated very high percentage agreement in their LS and personal competency judgments for the control group. For the AD group, mean percentage judgment agreement among physicians ranged from a high of 84% (LS1) (evidencing a treatment choice) to a low of 67% (LS3) (appreciating consequences of treatment choice). Mean percentage agreement for personal competency judgments was 76%. For the AD

sample, kappa analyses for physicians as a group demonstrated significant agreement not attributable to chance for LS5 (understanding treatment situation/choices) (k = 0.57, *P* = .001), LS4 (providing rational reasons for treatment choice) (k = 0.39, *P* = .04), and also for personal judgments (k = 0.48, *P* = .009). Analysis of LS judgment agreement within physician indicated that physicians applied the LS as discrete standards. Within-physician and for the AD sample, personal competency judgments were associated significantly with judgments on LS5 (*P* = .001), LS4 (*P* = .004), and LS3 (*P* < .04).

1020

Massoud, Fadi, et al. The role of routine laboratory studies and neuroimaging in the diagnosis of dementia: a clinicopathological study. *Journal of the American Geriatrics Society* 48(10):1204-1210, Oct. 2000.

DEMENTIA. LABORATORY STUDIES. LONGITUDINAL STUDIES. NEUROIMAGING.

This paper sought to determine the neuropathological diagnoses of longitudinally followed patients with potentially reversible causes of dementia and to examine the results of the "dementia work-up," especially neuroimaging, by comparison with the pathological diagnosis. The design was a neuropathologic series of 61 consecutive patients with review of clinical, laboratory, neuroimaging, and pathological results. Of the 61 patients, 48 (79%) had a clinical diagnosis of probable or possible Alzheimer's disease (AD). Compared with the pathological diagnosis, the sensitivity and specificity of the clinical diagnosis of AD were 96% and 79%, respectively. Of the 61 patients, 9 had abnormal laboratory tests, the correction of which did not improve the subsequent course. These patients were found to have AD and frontotemporal dementia. In two patients, neuroimaging was helpful in the clinical diagnoses of frontotemporal dementia and progressive supranuclear palsy (PSP). Neuroimaging revealed cerebrovascular disease in 18 patients, only 2 of whom were suspected clinically. Pathology confirmed AD in 17 and PSP in 1 of these patients. Sensitivity and specificity for the clinical diagnosis of cerebrovascular disease in comparison with pathology were 6% and 98%, respectively. With the added information from neuroimaging, that sensitivity increased to 59% and specificity decreased to 81%. All cases with abnormal laboratory or neuroimaging results had AD or some other neurodegenerative disease on pathology. The "dementia work-up" did not reveal any reversible causes for dementia in this group of patients. Neuroimaging may have a role, especially in the diagnosis of possible AD with concomitant cerebrovascular disease.

1021

Metitieri, Tiziana, et al. The Itel-MMSE: an Italian telephone version of the Mini-Mental State Examination. *International Journal of Geriatric Psychiatry* (UK) 16(2):166-167, Feb. 2001.

COGNITIVE IMPAIRMENT. IMPAIRED ELDERLY. ITALY. MINI-MENTAL STATE EXAMINATION. TELEPHONE INTERVIEWS.

Method. We compared performance in an Italian telephone version of the Mini-Mental Status Examination (Itel-MMSE) with performance in the standard MMSE administered face to face to 104 inpatients affected by cognitive deficit. Their cognitive ability varied from mildly to severely impaired. Total scores of the two MMSE versions correlated strongly for all patients ($r = 0.85$) and for very mildly ($r = 0.77$), mildly ($r = 0.79$), and moderately ($r = 0.72$) demented. A weak but statistically

significant correlation was observed for severely demented patients ($r = 0.46$). The study establishes the validity and reliability of the Itel-MMSE as well as between rater and test-retest reliability. We calculated a regression equation for use in predicting MMSE scores from Itel-MMSE scores. Data fit a linear regression model.

1022

Pomeroy, Ian M., Christopher R. Clark, and Ian Philp. The effectiveness of very short scales for depression screening in elderly medical patients. *International Journal of Geriatric Psychiatry* (UK) 16(3):321-326, March 2001.

GERIATRIC DEPRESSION SCALES. PREDICTIVE VALIDITY. PSYCHODIAGNOSIS. PSYCHOLOGICAL DEPRESSION. SCREENING TESTS.

This study sought to compare very short scales for screening for depression with longer, widely used scales. Eighty-seven patients over the age of 60 who were admitted to rehabilitation wards or were attending a day rehabilitation facility at a British teaching hospital were screened for depression using the 1-item mental health inventory, and the 4-item, 15-item and 30-item geriatric depression scales. The sensitivity, specificity, and areas under receiver operating characteristic curves were compared, with the diagnostic criteria for research of ICD-10 providing the criterion diagnosis of depressive episode. All the scales had comparable sensitivity (82.4-100%), specificity (60.0-71.4%), and positive predictive values (33.3-42.9%). Comparison of receiver operating characteristic curves for each scale showed no statistically significant difference between them (range 0.80-0.88). The very short scales performed just as well as the widely used longer screening scales in this population. They are worthy of further examination in elderly populations at risk of depression and may be particularly suitable for older adults due to their brevity and ease of use.

1023

Scanlan, James, and Soo Borson. The Mini-Cog: receiver operating characteristics with expert and naïve raters. *International Journal of Geriatric Psychiatry* (UK) 16(2):216-222, Feb. 2001.

COGNITIVE ASSESSMENTS. COGNITIVE IMPAIRMENT. DEMENTIA. MINI-COG. PSYCHODIAGNOSIS. SCREENING TESTS.

As elderly populations grow, dementia detection in the community is increasingly needed. Existing screens are largely unused because of time and training requirements. We developed the Mini-Cog, a brief dementia screen with high sensitivity, specificity, and acceptability. Here we describe the development of its scoring algorithm, its receiver operating characteristics (ROC), and the generalizability of its clock drawing scoring system. A total of 249 multi-lingual older adults were examined. Scores on the three-item recall task and the clock drawing task (CDT-CERAD version) were combined to create an optimal algorithm. Receiver operating characteristics for seven alternatives were compared with those of the MMSE and the CASI using expert raters. To assess the CDT scoring generalizability, 20 naive raters, without explicit instructions or prior CDT exposure, scored 80 randomly selected clocks as "normal" or "abnormal" (20 from each of four CERAD categories). An algorithm maximizing sensitivity and correct diagnosis was defined. Its ROC compared favorably with those of the MMSE and CASI. CDT concordance between naive and trained raters was > 98% for normal, moderately and severely impaired clocks, but lower (60%) for mildly impaired clocks. Recalculation of the MiniCog's performance, assuming that naive raters would score all mildly impaired CDTs in the full sample as

normal, retained high sensitivity (97%) and specificity (95%). The Mini-Cog algorithm performs well with simple clock scoring techniques. The results suggest that the Mini-Cog may be used successfully by relatively untrained raters as a first-stage dementia screen. Further research is needed to characterize the Mini-Cog's utility when population dementia prevalences are low.

1024

Smallwood, Jonathan, et al. Psychometric evaluation of a short observational tool for small-scale research projects in dementia. *International Journal of Geriatric Psychiatry* (UK) 16(3):288-292, March 2001.

DEMENTIA. PREDICTIVE VALIDITY. PSYCHODIAGNOSIS. PSYCHOMETRIC EVALUATION.

Dementia is a degenerating illness and the lack of a reliable measure of self-report in particular presents particular difficulties for research. Often in the later stages of dementia behavioral measurement is the only tool available for the evaluation of treatment techniques. This paper describes and evaluates a short observational tool suitable for clinical assessment purposes. The scale has been shown to have the potential for adequate inter-rater reliability, test-retest reliability, and convergent and divergent validity, if the study limitations reflecting statistical rather than ecological validity, and limitations of sample size are borne in mind.

1025

Wiscott, Richard, Karen Kopera-Frye, and Lauren Seifert. Issues in neuropsychological assessment: older adults with mental retardation. *Clinical Gerontologist* 22(3/4):71-86, 2000.

ASSESSMENT TECHNIQUES. IMPAIRED ELDERLY. MENTAL RETARDATION. NEUROPSYCHOLOGY.

Approximately 7 million individuals in the U.S. have mental retardation (MR), with 10-15% aged 55 years or older (AAMR, 1992). Relevant issues in the neuropsychological evaluation of older adults with MR include: conducting a comprehensive examination, utilizing reliable/valid measures, and awareness of physical and psychological comorbid concerns. Empirical research plus illustrative case studies highlight potential barriers in diagnosing this population. Concerns and recommendations aimed at identifying cognitive decline not associated with MR are discussed. Thorough comprehension of MR, recognizing cognitive impairment not associated with MR, and unique concerns of assessment when MR is present can aid in appropriate treatment planning.

Alzheimer's Disease

1026

Ford, Judith M., et al. Event-related brain potential evidence of spared knowledge in Alzheimer's disease. *Psychology and Aging* 16(1):161-176, March 2001.

ALZHEIMER'S DISEASE. BRAIN. COGNITIVE PROCESSES. EVIDENCE. NEUROPSYCHOLOGY.

The authors recorded event-related brain potentials (ERPs) to picture primes and word targets (picture-name verification task) in patients with Alzheimer's disease (AD) and in elderly and young participants. N400 was more negative to words that did not match pictures than to words that did match pictures in all groups. In the young,

this effect was significant at all scalp sites; in the elderly, it was only at central-parietal sites; and in AD patients, it was limited to right central-parietal sites. Among AD patients pretested with a confrontation-naming task to identify pictures they could not name, neither the N400 priming effect nor its scalp distribution was affected by ability to name pictures correctly. This ERP evidence of spared knowledge of these items was complemented by 80% performance accuracy. Thus, although the name of an item may be inaccessible in confrontation naming, N400 shows that knowledge is intact enough to prime cortical responses.

1027

Lindner, Kirsten, et al. Changes in medication use and functional status of community-dwelling Alzheimer's patients after consultation at a memory clinic. *Clinical Gerontologist* 22(3/4):13-21, 2000.

ALZHEIMER'S DISEASE. COGNITIVE PROCESSES. CONSULTATION. FUNCTIONAL STATE. MEDICATION. MEMORY. MEMORY CLINICS.

Medication use can have adverse effects. This problem is especially relevant to older adults, and maybe more so to older adults who have cognitive impairment. The goal of this study was to determine if a memory clinic could help reduce medication use and improve function in older adults with Alzheimer's disease (AD). Methods: This study used a pre-post design and relied on retrospective chart abstraction of 99 patients with AD. Medication use and function were assessed before and after referral to a university-affiliated memory clinic for assessment. Medication use was reduced from 3.4 prescription and over-the-counter medications prior assessments to 2.9 at follow-up ($p = .016$). Overall cost of medications was reduced by $8.84US per patient per month ($p = .004$), representing a potential yearly saving of more than $10,000US for the sample studied. Decreases in overall medication use were associated with increases in cognition as measured by the Standardized Mini-Mental State Examination ($r = 0.24$, $p = .023$). Interpretation: Memory clinic for AD patients may have health and economic benefits. Further study is required to clarify causal links between the assessment process and outcomes.

1028

Loewenstein, David A., et al. Caregivers' judgments of the functional abilities of the Alzheimer's disease patient: a comparison of proxy reports and objective measures. *Journal of Gerontology: Psychological Sciences* 56B(2):P78-P84, March 2001.

ALZHEIMER'S DISEASE. CAREGIVERS. FUNCTIONAL STATE. RESEARCH TECHNIQUES.

The assessment of functional capacity is essential for the diagnosis of dementia by *DSM-IV* criteria and has important implications for patient intervention and management. Although ratings of functional disability by family or other proxy informants are widely used by clinicians, there have been concerns and empirical evidence that potential reporter biases may result in either overestimation or underestimation of specific functional deficits. In this study, we compared family members' judgments of the functional abilities of seventy-two patients diagnosed with Alzheimer's disease (AD). These judgments were compared to actual objective functional performance on an array of real-world tasks using the Direct Assessment of Functional Status (DAFS) scale. The results indicate that caregivers were extremely accurate in predicting the functional performance of AD patients who were not impaired during objective evaluation. In contrast, caregivers significantly overestimated the ability of impaired AD patients to tell time, to identify currency, to make change for a purchase, and to utilize

eating utensils. Higher patient MMSE scores were associated with caregivers' overestimation of functional capacity, while the degree of caregivers' depressive symptoms, as measured by the CES-D depression scale, was not related to either overestimation or underestimation of patients' functional performance.

Other Dementias

1029

Huffman, Jeff C., and Mark E. Kunik. Assessment and understanding of pain in patients with dementia. *The Gerontologist* 40(5):574-581, Oct. 2000.

ASSESSMENT TECHNIQUES. DEMENTIA. PAIN MANAGEMENT.

The literature on pain in dementia patients is reviewed. A summary of methods for assessment of pain in demented elderly persons and an examination of studies that used such methods are included. In addition, literature theorizing a decrease in affective pain in this population is discussed; management of pain in such patients is not discussed extensively. Research reveals 3 major findings: (a) a moderate decrease in pain occurs in cognitively impaired elderly persons, (b) communicative dementia patients' reports of pain tend to be as valid as those of cognitively intact patients, and (c) assessment scales developed thus far for noncommunicative patients require improvement in accuracy and facility. Many questions about pain in dementia patients remain, and the continued development of valid pain assessment techniques is a necessity.

1030

Snowdon, J., and F. Lane. The prevalence and outcome of depression and dementia in Botany's elderly population. *International Journal of Geriatric Psychiatry* (UK) 16(3):293-299, March 2001.

AGE DIFFERENCES. AUSTRALIA. BOTANY, AUSTRALIA. DEMENTIA. PSYCHOLOGICAL DEPRESSION. YOUNG ADULTS.

Large epidemiological studies of adult populations have reported depression to be less prevalent in old age than among younger adults, whereas studies limited to older persons have reported rates that vary considerably, some showing high rates of depression. There was, therefore, reason to check data from a study that reported high rates and to review evidence in relation to diagnosis and outcome. The method entailed re-examination of data from a 1985 survey of elderly people living at home ($N = 146$). Depression and cognitive impairment were also assessed in a local hostel ($N = 42$) and nursing home ($N = 74$). *DSM* diagnoses were made by an old-age psychiatrist. In the nursing home, 23 other residents could not respond to interview questions but were considered to have severe dementia. Subjects in all three settings were followed up after 4 years. Seven community subjects (4.5%; confidence interval 1.3-8.3%) and three in residential care fulfilled criteria for major depression. The estimated total prevalence of depressive disorders among elderly in Botany was between 13.0 and 13.6% (4.6% major depression, 3.6% dementia with depression, 5.4% other depressive disorders). In 1985, the prevalence of dementia among those living at home was 11%. Four-year mortality in the dementia cases was 60%. Botany has a high prevalence of dementia and depression among elderly people. The recent cross-age Australian study of mental health and well-being provided an inaccurate report concerning the pattern of mental disorders in old age.

Psychological Depression

1031

Aikman, Grace G., and Mary E. Oehlert. Geriatric depression scale: long form versus short form. *Clinical Gerontologist* 22(3/4):63-70, 2000.

GERIATRIC DEPRESSION SCALE. PSYCHOLOGICAL DEPRESSION. PSYCHOLOGICAL MEASURES. VETERANS ADMINISTRATION.

The Long Form and the Short Form of the Geriatric Depression Scale (GDS) were compared in a VA nursing home population. The study had two phases. In the first phase, 86 geriatric male veterans were administered the Long Form of the GDS at intake. The Long Form was rescored on the Short Form and a scatterplot was constructed. The Short Form of the GDS consistently identified 94% of the participants using the Long Form as the standard. In the second phase of the study, 31 veterans were administered both the Long Form and the Short Form of the GDS in alternating order during their intake or annual screening assessment. A scatterplot showed the Short Form to consistently identify 70% of the participants using the Long Form as the standard.

1032

Haynie, Dee A., et al. Symptoms of depression in the oldest old: a longitudinal study. *Journal of Gerontology: Psychological Sciences* 56B(2):P111-P118, March 2001.

CENTER FOR EPIDEMIOLOGIC STUDIES–DEPRESSION SCALE. FRAIL ELDERLY. PSYCHOLOGICAL DEPRESSION. SYMPTOMATOLOGY.

This study examined depressive symptoms in a population-based, longitudinal sample of people aged 80 and older to determine initial prevalence of depressive symptoms and changes over time. Depressive symptomatology was assessed with the Center for Epidemiologic Studies–Depression Scale (CES-D). The sample was drawn from the OCTO-Twin study, which examined 702 Swedish twins over age 80 in which both members of the pair were still surviving. For the present study, one member of each twin pair was randomly selected, resulting in a sample of 351. A comprehensive biobehavioral assessment was conducted at three time points over 4 years. Depressive symptoms were initially relatively low and decreased significantly between Wave 1 and Wave 2. At Wave 3, depressive symptoms increased slightly but not significantly. Participants who received a dementia diagnosis at some point in the study did not differ significantly on initial CES-D scores when compared to those participants who never received such a diagnosis. Lack of well-being, as opposed to negative affect, was the biggest contributor to the overall depression score at each of the three waves of measurement. Predictors of negative affect for this sample included activities of daily living, subjective health, and performance on the cognitive test, block design. None of these predictors were significant for lack of well-being.

1033

Hraba, Joseph, et al. Age and distress in the Czech Republic. *Research on Aging* 23(5):552-585, Sept. 2001.

AGE DIFFERENCES. AGING. CZECH REPUBLIC. ELDERLY. LIFE CYCLE. MIDDLE-AGED ADULTS. PSYCHOLOGICAL STRESS.

The relationship between age and distress was examined with four-wave panel data from the Czech Republic. Age was positively associated with Czech men's 1999

depression (when the older panel members were compared with the middle-aged members) and negatively with women's problem behavior prior to controls. Age was also associated with changes in men's depression between 1994 and 1999, but not changes in women's problem behavior. The additions of life-course variables, economic experience, and health and social-psychological resources helped explain the relationship between age and changes in men's depression, and this relationship was particularly true for economic experiences and personal resources. The same variables were also related to changes in men's problem behavior and women's depression. Men's problem behavior and women's depression appeared to be distress symptoms but simply not related to age.

1034

Jefferson, Angela L., David V. Powers, and Michaela Pope. Beck Depression Inventory-II (BDI-II) and the Geriatric Depression Scale (GDS) in older women. *Clinical Gerontologist* 22(3/4):3-12, 2000.

BECK DEPRESSION INVENTORY. GERIATRIC DEPRESSION SCALE. RESEARCH TECHNIQUES. WOMEN.

Given the revision of the Beck Depression Inventory (i.e., BDI-II), the purpose of this research was to examine the Geriatric Depression Scale (GDS) and the BDI-II in older women to determine if the BDI changes have altered its efficacy with older adults. Results indicate that the BDI-II positively correlated with the GDS ($r = .71$) and both instruments demonstrated good internal consistency ($r = .85$ and .84, respectively). Nonresponse rates were quantitatively comparable, yet qualitatively different, as a number of participants did not respond to the BDI-11 "sexual interest" question. The results from this study suggest the revisions made to the BDI have not altered its potential use with older adult populations. Nevertheless, clinicians may prefer to use the GDS when assessing depression in older women, as specific questions found on the GDS may be more relevant to that specific population.

1035

Jorm, A.F., et al. The Cognitive Decline Scale of the Psychogeriatric Assessment Scales (PAS): longitudinal data on its validity. *International Journal of Geriatric Psychiatry* (UK) 16(3):261-265, March 2001.

COGNITIVE DECLINE SCALE. LONGITUDINAL STUDIES. PREDICTIVE VALIDITY. PSYCHOGERIATRIC ASSESSMENT SCALES.

The Cognitive Decline scale of the Psychogeriatric Assessment Scales (PAS) uses informant data to assess retrospectively change from earlier in life. Data from a 7 to 8-year longitudinal study were used to assess the validity of this scale against changes in cognitive performance and mortality. Design and measures. PAS data were collected on three occasions, with gaps of 3.6 and 4.1 years between the waves. The Cognitive Decline score at Wave 3 was validated retrospectively against actual change on a brief test of current cognitive status (the PAS Cognitive Impairment scale) over the three waves, while the Cognitive Decline score at Wave 1 was assessed for predictive validity against future mortality and cognitive change. A community survey was conducted in the Australian cities of Canberra and Queanbeyan. Participants were aged 70+ at the beginning of the study. The sample size varied from 729 to 279, depending on the number of waves involved. Participants with scores of 4+ on the Cognitive Decline scale at Wave 3 showed substantial deterioration over the previous 7-8 years. Scores of 4+ at Wave 1 predicted mortality and further cognitive deterioration. The

Cognitive Decline scale allows a valid retrospective assessment of change and has predictive validity for subsequent cognitive deterioration and increased mortality.

1036

Lloyd, A.J., et al. Depression in late life, cognitive decline and white matter pathology in two clinico-pathologically investigated cases. *International Journal of Geriatric Psychiatry* (UK) 16(3):281-287, March 2001

BRAIN. CEREBRAL ATROPHY. COGNITIVE IMPAIRMENT. DEMYELINAZATION. IMPAIRED ELDERLY. PSYCHOLOGICAL DEPRESSION. WHITE MATTER LESIONS.

We report two cases of late life depression who became progressively more resistant to treatment, developed cognitive impairment, and began to exhibit neurological abnormalities and evidence of vascular disease. A discussion of the clinical features of the cases is accompanied by reports of neuropathology and neuroimaging findings. Extensive white matter lesions were present on computed tomography in both patients, and basal ganglia infarcts were seen in one. Neuropathology revealed evidence of cerebral atrophy, demyelination and white matter lesions in addition to cerebrovascular and generalized vascular disease. Neither patient exhibited Alzheimer pathology outside the norm for their age. We believe this to be the first report of neuropathological findings in depression with white matter changes. Literature review. The pathological basis of white matter lesions and their relationship to depression, its age of onset and clinical features is addressed in relation to the cases described. Pathological investigation of white matter lesions has not previously been carried out in depression, and hypotheses regarding their nature in this illness are based on extrapolation from research in a variety of other disorders. The association of depression with vascular risk factors is considered, as is the relationship between depression and cognitive deficits. There is a need for further investigation in this area.

1037

Rao, Rahul, Stephen Jackson, and Robert Howard. Depression in older people with mild stroke, carotid stenosis and peripheral vascular disease: a comparison with healthy controls. *International Journal of Geriatric Psychiatry* (UK) 16(2):175-183, Feb. 2001.

CARDIOVASCULAR DISORDERS. CAROTID STENOSIS. COMPARATIVE ANALYSIS. PSYCHOLOGICAL DEPRESSION. STROKE.

Although depression has a recognized association with stroke, the role of "silent" cerebrovascular pathology associated with carotid stenosis and peripheral vascular disease remains unexplored. Four groups of 25 community residents aged 65 and over were recruited, comprising first anterior circulation stroke, carotid stenosis accompanied by transient ischemic attack, peripheral vascular disease and a nonvascular control group. All participants were interviewed using the Hamilton Rating Scale for Depression [HRSD] (including a modified version) and Geriatric Depression Scale. *DSM IV* criteria for major depression and measures of handicap, social support and physical illness were also administered. Head computerized tomography (CT) scans were performed on stroke patients to examine the relationship between lesion location and depression. One hundred patients were interviewed. Stroke patients were more likely to live in a nursing home and had less social support than other groups.

Mean scores on the modified Hamilton and Geriatric Depression Scales were higher in stroke and carotid stenosis groups than controls. Patients with stroke did not show a higher prevalence of *DSM IV* major depressive disorder than those with carotid stenosis. There was no relationship between the presence of lesions affecting the frontal/subcortical system and prevalence/severity of depression. Small numbers, mortality of stroke patients in hospital, possible selection bias in the control group and use of a previously unvalidated depression rating scale all limit the study. A possible role for carotid stenosis in the pathogenesis of depressive disorder is suggested. Larger studies incorporating brain imaging may be required to examine the mechanism of this association more closely. The use of a shorter version of the HRSD in older people with cerebrovascular disease may warrant further exploration.

1038

Simard, Martine, and Robert van Reekum. Dementia with Lewy bodies in Down's syndrome. *International Journal of Geriatric Psychiatry* (UK) 16(3):311-320, March 2001.

ALZHEIMER'S DISEASE. DEMENTIA. DOWN'S SYNDROME. LEWY BODIES.

The association between Down's syndrome (DS) and Alzheimer's disease is well established. This paper presents a review of the literature, suggesting a possible association between DS and the more recently recognized dementia with Lewy bodies (DLB). Patients with DLB frequently present with changes in affect and behavior, and in particular with psychotic symptoms. The literature suggests a possible role for atypical neuroleptics in the management of psychosis in DLB.

1039

Unützer, Jürgen, et al. Care for depression in HMO patients aged 65 and older. *Journal of the American Geriatrics Society* 48(8):871-878, August 2000.

AGING. HEALTH MAINTENANCE ORGANIZATIONS. PSYCHOLOGICAL DEPRESSION. TREATMENT TECHNIQUES.

This study sought to examine treatment for depression among older adults in a large staff model health maintenance organization (HMO).The design was a 4-year prospective cohort study (1989-1993). The setting comprised four primary care clinics of a large staff model HMO in Seattle, Washington. A total of 2,558 Medicare enrollees aged 65 and older participated. Treatment of depression was defined as primary care visits resulting in depression diagnoses, use of antidepressant medications, or specialty mental health services.The older adults in our sample had low rates of treatment for depression, ranging from 4 to 7% in the entire sample and from 12 to 25% among those with probable depressive disorders. Predictors of treatment included female gender, severity, and persistence of depressive symptoms, and severity of comorbid medical illness. Even when patients were treated for depression, the intensity of treatment was very low. Overall likelihood of treatment for depression increased somewhat from 1989 to 1993, but among those treated, the rate of adequate antidepressant use remained below 30%. There is still considerable need to improve care for older adults with depression in primary care.

Psychoses

1040

Rapoport, Mark J., et al. Relationship of psychosis to aggression, apathy and function in dementia. *International Journal of Geriatric Psychiatry* (UK) 16(2):123-130, Feb. 2001.

AGGRESSIVE BEHAVIOR. APATHY. DEMENTIA. FUNCTIONAL STATE. PSYCHOSIS.

Psychosis has been associated with aggression in dementia, but the nature of this relationship has been unclear. There has been very little research into the relations between apathy and functional status to psychosis in dementia. The purpose of this study is to investigate the relationship between psychosis and aggression, apathy, and functional status in outpatients with dementia. Methods. The presence of psychosis was assessed by clinical interview and two scales: the Neuropsychiatric Inventory and the Columbia University Scale for Psychopathology in Alzheimer's Disease. The maximum likelihood estimation technique was used to determine the best estimate of the presence of psychosis. Aggression, apathy, and functional status (activities of daily living [ADLs]) were measured using structured instruments. Sixty-one subjects were included. The CUSPAD and NPI provided low false positive and negative rates. ANCOVA analyses showed that psychosis was significantly associated with aggression, even when controlling for apathy, depression, and ADLs. Psychosis was related to apathy only when depression was controlled. Hallucinations were related to impaired basic ADLs, even when depression and apathy were controlled. Relationships were found between psychotic symptoms in dementia and aggression as well as apathy and impaired functional status. These relationships suggest pathophysiologic mechanisms and have possible treatment implications.

Alcohol and Drug Abuse

1041

Fingerhood, Michael. Substance abuse in older people. *Journal of the American Geriatrics Society* 48(8):985-995, August 2000.

EPIDEMIOLOGY. RESEARCH TRENDS. SCREENING TESTS. SUBSTANCE ABUSE. TREATMENT TECHNIQUES.

This review presents current information on substance abuse in older people, highlighting recent studies on epidemiology, screening techniques, brief intervention, and treatment issues. Studies show that substance abuse in older people is common but frequently goes undiagnosed. Although alcohol abuse is most common, abuse of narcotic and sedative drugs also occurs. Older adults are particularly susceptible to adverse medical outcomes from substance abuse, and recent studies show that brief interventions by primary care providers can have a major impact on preventing medical morbidity and improving quality of life. Effective treatment modalities for substance abuse in older people exist and should be individualized to optimize success.

1042

Popelka, Michael M., et al. Moderate alcohol consumption and hearing loss: a protective effect. *Journal of the American Geriatrics Society* 48(10):1273-1278, Oct. 2000.

ALCOHOL USE. CROSS-SECTIONAL STUDIES. HEARING LOSS.

This study sought to determine if moderate alcohol consumption is associated inversely with hearing loss in a large population based study of older adults.The design was a cross-sectional population based cohort study. Data were drawn from the 1993-1995 examinations for the population-based Epidemiology of Hearing Loss Study (EHLS) (*N* = 3,571) and the Beaver Dam Eye Study (BDES) (*N* = 3,722). The setting was the midwestern community of Beaver Dam, Wisconsin. Residents of Beaver Dam aged 43 to 84 in 1987/1988 were eligible for the BDES (examinations in 1988-1990 and 1993-1995). During 1993-1995, this same cohort was eligible to participate in the baseline examination for the EHLS. Hearing thresholds were measured by pure tone air and bone conduction audiometry (250-8000 Hz.). History of alcohol consumption in the past year, heavy drinking (ever), medical history, occupation, noise exposure, and other lifestyle factors were ascertained by a questionnaire that was administered as an interview. In multiple logistic regression analyses controlling for potential confounders, moderate alcohol consumption (>140 grams/week) was inversely associated with hearing loss ($PTA_{.5,1,2,4\ >25\ dB\ HL}$; odds ratio [OR] = .71, 95% confidence interval [CI] = .52, .97; where PTA is pure tone average). A similar association was found for moderate hearing loss ($PTA_{.5,1,2,4\ >\ 40\ dB\ HL}$; OR = .49, 95% CI = .32, .74). Alcohol consumption was associated inversely with the odds of having a low frequency hearing loss (OR = .61) or a high frequency hearing loss (OR = .60). These findings did not vary significantly by age or gender. There was an increase in the odds of having a high frequency hearing loss (OR = 1.35, 95% CI = 1.04, 1.75) in those with a history of heavy drinking (≥ 4 drinks/day). Including cardiovascular disease or its related factors did not significantly attenuate the protective effect. There is evidence of a modest protective association of alcohol consumption and hearing loss in these cross-sectional data. This finding is in agreement with a small body of evidence suggesting that hearing loss is not an inevitable component of the aging process.

1043

Reifman, Alan, and John W. Welte. Depressive symptoms in the elderly: differences by adult drinking history. *Journal of Applied Gerontology* 20(3):322-337, Sept. 2001.

ALCOHOL ABUSE. PSYCHOLOGICAL DEPRESSION. SYMPTOMATOLOGY.

How depression in elderly persons is related to their previous drinking over the life span has received little attention. The authors examined this issue from a sample representative of persons aged 60 years and older in Erie County, NY (*N* = 2,325). In one type of analysis, respondents were classified into those who abstained from alcohol through life; drank, but never experienced any alcohol-related problems of symptoms; experienced problems only before age 60; experienced them only after age 60; or experienced them both before and after age 60. Drinkers who never experienced alcohol problems manifested the lowest level of depressive symptomatology; individuals who experienced alcohol problems both before and after age 60 had the highest. Multiple regression analyses further confirmed the possible role of earlier alcohol problems (around ages 20 to 40 years) in predicting elderly depression. Directions for future research and clinical screening of elders' potential alcohol misuse are discussed.

Clinical Practice

1044

Garber, Ken. An end to Alzheimer's? Technology Review 204(2):70-74+, March 2001.

ALZHEIMER'S DISEASE. BETA-SECRETASE. GENE THERAPY.

At Amgen, Bob Vasser, whose mother died after 17 years affliction of Alzheimer's disease, has been designing and implementing a technique of isolating the gene of Alzheimer's disease called beta-secretase, a key factor in the disease. It was, Vassar notes, a high-risk project and there was no guarantee his team could isolate it. Indeed, the group tested 860,000 gene copies before finding beta-secretase and publishing the discovery in late 1999. The discovery of this gene holds the possibility of halting progress of Alzheimer's disease. The gene's role, so far as is known, in Alzheimer's disease is described, and current efforts to improve research on beta-secretase and to finding applications for treatment of Alzheimer's disease are discussed.

1045

Hughes, Jane, et al. Care management and the care programme approach: towards integration in old age mental health services. *International Journal of Geriatric Psychiatry* (UK) 16(3):266-272, March 2001

CARE MANAGEMENT. DEMENTIA. MENTAL HEALTH SERVICES. SERVICES INTEGRATION.

This study sought to examine the relationship between care management arrangements and the Care Programme Approach (CPA) in the context of old age mental health services and, particularly, dementia services. The information reported is from a national study of care management arrangements funded by the Department of Health. A response rate of 77% was obtained from local authority social services departments. In old age mental health services, over half of the respondents reported joint screening arrangements for health and social care, almost four-fifths reported both joint criteria for the allocation of key workers and a clear definition of monitoring responsibilities. Of the latter, over two-fifths were reported as being the same in care management and the CPA. Forty-six percent of respondents provided a specialist service for people with dementia. Three-fifths of respondents reported that they did not apply CPA to people with dementia who were in receipt of care management or did so in less than 20% of cases. Where the CPA was applied it was more likely that a priority would be accorded to care management. A quarter of respondents reported the shared use of assessment documentation for people with dementia. The findings are set in the context of service developments to date and the implementation of the two systems of community based coordinated care for older people with mental health problems. Inter-authority variations are noted and the potential for greater service integration within the current legislative framework assessed.

1046

LoGiudice, Dina, et al. Equity of access to a memory clinic in Melbourne? Non-English speaking background attenders are more severely demented and have increased rates of psychiatric disorders. *International Journal of Geriatric Psychiatry* (UK) 16(3):327-334, March 2001.

COMPARATIVE ANALYSIS. DEMENTIA. ENGLISH SPEAKERS. MELBOURNE. MEMORY CLINICS. MENTAL DISORDERS. NON-ENGLISH SPEAKERS.

The aim of this study was to compare demographic and clinical features of patients from Non-English Speaking Backgrounds (NESB) with those from English Speaking Backgrounds (ESB) who attended a memory clinic in Melbourne, Australia. Data on 556 consecutive patients attending the memory clinic were analyzed retrospectively. All patients were assessed by a geriatrician (Italian speaking) or psychogeriatrician with the aid of Cambridge Examination for Mental Disorders in the Elderly (CAMDEX) interview schedule. Patients were classified into the categories of dementia, functional psychiatric disorder (including depression), cognitive impairment other than dementia and normal, using ICD 10 criteria. Severity of dementia was determined using the Clinical Dementia Rating (CDR) scale. Demographic information and use of community services were also documented. Of those seen, 148 (28.8%) were of NESB, the majority Italian (69, 12.4%). Patients of NESB were younger ($p = 0.001$), less educated ($p = 0.001$) and less likely to live alone ($p = 0.009$) compared to persons of ESB. Those of NESB were more likely present with a functional psychiatric disorder (particularly depression) or normal cognition ($p = 0.001$). Patients of NESB with dementia presented at a later stage of their disease as determined by CDR ($p = 0.003$). Those of NESB scored significantly lower (more impaired) on CAMCOG in all patients seen (including normal and psychiatric groups) ($p = 0.02$). The clinical and demographic features of people of NESB referred to a memory clinic in Melbourne, Australia, differ from their ESB counterparts, with specific groups being under represented. This has implications for equity of assessment, service provision and utilisation for those of ethnically diverse backgrounds.

1047

O'Hara, Barbara. Cognitive-behavioral treatment of anxiety in late life from a schema-focused approach. *Clinical Gerontologist* 22(3/4):23-36, 2000.

ANXIETY. COGNITIVE PROCESSES. COGNITIVE-BEHAVIORAL TREATMENT. TREATMENT TECHNIQUES.

This article discusses a schema-focused approach as a clinical intervention for older adults with anxiety. The author proposes that loss events in late life can activate a maladaptive schema that may be characterized by symptoms of anxiety. These symptoms may be a signal from an older person's body that something in her or his life needs attention. Anti-anxiety medication may interfere with addressing important developmental and contextual issues in late life. A schema-focused approach can help older clients to identify their maladaptive schema; to understand how it relates to current losses, behaviors, and symptoms; and to make changes in their lives.

Psychotropic Medication

1048

Hughes, Carmel M., et al. The impact of legislation on psychotropic drug use in nursing homes: a cross-national perspective. *Journal of the American Geriatrics Society* 48(8):931-937, August 2000.

CROSS-NATIONAL COMPARISON. NURSING HOMES. PSYCHOTROPIC MEDICATION USE. RESEARCH TRENDS.

This study sought to quantify the impact of legislation on nursing home residents, psychotropic drug use, and the occurrence of falls in the U.S. compared with five countries with no such regulation.The design was a retrospective cross-sectional study. The setting comprised nursing homes in five U.S. states and selected nursing homes in Denmark, Iceland, Italy, Japan, and Sweden. Participants were residents in nursing homes in five U.S. states and the aforementioned countries during 1993-1996. The main outcome measures were data collected using the Minimum Data Set; logistic regression provided estimates of the legislative effects on the use of antipsychotics and antianxiety/hypnotics while simultaneously adjusting for potential confounders. The occurrence of falls was evaluated similarly. Prevalence of antipsychotic and/or antianxiety/hypnotic use varied substantially across countries. After adjustment for differences in age, gender, presence of psychiatric/neurologic conditions, and physical and cognitive functioning, residents in Denmark, Italy, and Sweden were at least twice as likely to receive these drugs (Denmark odds ratio (OR) = 2.32; 95% confidence intervals (CI), 2.15-2.51; Italy OR = 2.05; 95% Cl, 1.78-2.34; Sweden OR = 2.50; 95% CI, 2.16-2.90); in Iceland, the risk was increased to greater than 6 times (OR = 6.54; 95% Cl, 5.75-7.44) than that of the U.S. Residents were less likely to fall in Italy, Iceland, and Japan compared with the U.S. despite more extensive use of psychotropic medication, whereas residents in Sweden and Denmark were more likely to fall. Policy has had an impact on the prescribing of psychotropic medication in U.S. nursing homes compared with other countries, but it is unclear if this is translated into better outcomes for residents.

1049

Taragano, Fernando E., et al. A double blind, randomized clinical trial assessing the efficacy and safety of augmenting standard antidepressant therapy with nimodipine in the treatment of "vascular depression." *International Journal of Geriatric Psychiatry* (UK) 16(3):254-260, March 2001.

ANTIDEPRESSANTS. NIMODEPINE. PSYCHOLOGICAL DEPRESSION. VASCULAR DEPRESSION.

Vascular depression may be caused by cerebrovascular disease. Calcium channel blockers, which are putative treatments for cerebrovascular disease, might be expected to improve depression reduction and to prevent recurrence of depression in this patient population. This clinical trial was designed to test these hypotheses. This was a controlled, double blind, randomized clinical trial in which 84 patients with vascular depression (Alexopoulos criteria) were treated with antidepressants at standard doses. Patients were also randomized to nimodipine ($n = 40$) or an inactive comparator, vitamin C ($n = 44$). Treatment outcomes were assessed using the Hamilton Depression Rating Scale (HDRS) regularly up to 300 days after treatment initiation. As expected, depression reduction was successful in most patients. In addition, those

treated with nimodipine plus an antidepressant had greater improvements in depression overall in repeated measures ANCOVA, $F(1,81) = 8.64$, $p = .004$). As well a greater proportion of nimodipine-treated participants (45 vs. 25%) exhibited a full remission (HDRS ≤ 10), $\chi^2(\text{df}, 1) = 3.71, p = .054$). Among those experiencing a substantial response in the first 60 days (50% reduction in HDRS), fewer patients on nimodipine (7.4%) had a recurrence of major depression when compared with those on antidepressants alone (32%), $\chi^2(\text{df}, 1) = 3.59, p = .058$). In treating vascular depression, augmentation of antidepressant therapy with a calcium-channel blocker leads to greater depression reduction and lower rates of recurrence. These findings support the argument that cerebrovascular disease is involved in the pathogenesis and recurrence of depression in these patients.

1050

van Dongen, Martien C.J.M., et al. The efficacy of ginkgo for elderly people with dementia and age-associated memory impairment: new results of a randomized clinical trial. *Journal of the American Geriatrics Society* 48(10):1183-1194, Oct. 2000.

AGING. COGNITIVE IMPAIRMENT. DEMENTIA. GINKGO. IMPAIRED ELDERLY. MEMORY LOSS. RANDOMIZED CONTROL TRIALS.

This study sought to evaluate the efficacy, the dose dependence, and the durability of the effect of the ginkgo biloba special extract EGb 761 (ginkgo) in older people with dementia or age-associated memory impairment.The design was a 24-week, randomized, double-blind, placebo-controlled, parallel-group, multicenter trial. The setting comprised homes for the elderly in the southern part of the Netherlands. Participants were older persons with dementia (either Alzheimer's dementia or vascular dementia; mild to moderate degree) or age-associated memory impairment (AAMI). 214 participants were recruited from 39 homes for the elderly. The participants were allocated randomly to treatment with EGb 761 (2 tablets per day, total dosage either 240 [high dose] or 160 [usual dose] mg/day) or placebo (0 mg/d). The total intervention period was 24 weeks. After 12 weeks of treatment, the initial ginkgo users were randomized once again to either continued ginkgo treatment or placebo treatment. Initial placebo use was prolonged after 12 weeks. Outcomes were assessed after 12 and 24 weeks of intervention. Outcome measures included neuropsychological testing (trail-making speed [NAI–ZVT–G], digit memory span [NAI–ZN–G], and verbal learning [NAIWL]), clinical assessment (presence and severity of geriatric symptoms [SCAG], depressive mood [GDS], self-perceived health and memory status [report marks]), and behavioral assessment (self-reported level of instrumental daily life activities). An intention-to-treat analysis showed no effect on each of the outcome measures for participants who were assigned to ginkgo ($n = 79$) compared with placebo ($n = 44$) for the entire 24-week period. After 12 weeks of treatment, the combined high dose and usual dose ginkgo groups ($n = 166$) performed slightly better with regard to self-reported activities of daily life but slightly worse with regard to self-perceived health status compared with the placebo group ($n = 48$). No beneficial effects of a higher dose or a prolonged duration of ginkgo treatment were found. We could not detect any subgroup that benefited from ginkgo. Ginkgo use was also not associated with the occurrence of (serious) adverse events. The results of our trial suggest that ginkgo is not effective as a treatment for older people with mild to moderate dementia or age-associated memory impairment. Our results contrast sharply with those of previous ginkgo trials.

1051

Verma, Swapna, et al. Tolerability and effectiveness of atypical antipsychotics in male geriatric inpatients. *International Journal of Geriatric Psychiatry* (UK) 16(2):223-227, Feb. 2001.

ANTIPSYCHOTIC MEDICATION. COHEN-MANSFIELD AGITATION INVENTORY. MEDICATION EFFECTIVENESS. MEDICATION TOLERANCE. MEN. OLANSAPINE. RISPERIDONE. VETERANS ADMINISTRATION.

The atypical antipsychotics are gradually becoming the mainstay of treatment for psychosis in the elderly. The present study examines the effectiveness and tolerability of risperidone and olanzapine treatment in 34 matched male patients admitted to a VA Medical Center geriatric inpatient unit. Methods employed were the Positive and Negative Syndrome Scale for Schizophrenia (PANSS), the Cohen-Mansfield Agitation Inventory (CMAI), the Rating Scale for Side-Effects, the Extra-Pyramidal Rating Scale, and the Mini-Mental State Examination were administered at admission and discharge. *t* tests at admission and discharge across groups indicate that the patients as a whole were performing significantly better following their stay on the CMAI, $t(30) = 4.31$, $p = .000$; the GAF, $t(31) = 9.73$, $p = .000$; the PANSS total score, $t(29) = 3.82$, $p = .001$; and the positive symptom portion of the PANSS, $t(28) = 4.29$, $p = .000$. No significant differences were detected between the two groups with regard to length of hospitalization or reduction in scores on the PANSS or CMAI; however, the daily cost of risperidone was 1/3 as much as olanzapine ($p = .00$). The two treatments were comparable in the elderly men evaluated in this study.

PSYCHOLOGY OF AGING

Personality

1052

Lackovic-Grgin, Katica, et al. Some predictors of primary control of development in three transitional periods of life. *Journal of Adult Development* 8(3):149-160, July 2001.

AGING. LIFE CYCLE. LOCUS OF CONTROL. SELF-CONTROL.

In the context of some personal control or mastery theories, primary, secondary, and tertiary personal control of development among subjects in three transitional periods of life were investigated. Results confirmed the expectation that the primary control decreases whereas secondary control increases with age. Tertiary control was the same in all transitional periods. There were some predictors in contribution of predictors of primary control in the early, middle, and late periods of transition. From the variables related to personality traits, optimism proved a good predictor of primary control in the young and middle aged, whereas in older persons who have the lowest primary control, none of the personality traits provide predictive. The importance of goals related to knowledge and competence was a significant predictor in all three age groups.

Life Satisfaction

1053

Hamarat, Errol, et al. Perceived stress and coping resource availability as predictors of life satisfaction in young, middle-aged, and older adults. *Experimental Aging Research* 27(2):181-196, April-June 2001.

AGE DIFFERENCES. COPING BEHAVIOR. ELDERLY. LIFE SATISFACTION. MIDDLE-AGED ADULTS. PSYCHOLOGICAL STRESS. YOUNG ADULTS.

Global satisfaction with life across three age groups (18 to 40 years, 41 to 65 years, and 66 years and above) was investigated. Multiple regressions were computed to examine the separate and joint effects of perceived stress and coping resource availability upon life satisfaction across the three age groups ($N = 189$). Age differences in perceived stress, coping resource availability, and life satisfaction were also investigated. Results of this cross-sectional investigation indicated that self-appraisal measures of perceived stress and coping resource effectiveness served as moderate predictors of global life satisfaction and that for the total sample the combined effects of perceived stress and coping resource effectiveness were better predictors of life satisfaction than either variable considered separately. Perceived stress was found to be a better predictor of life satisfaction for younger adults, and coping resource effectiveness was a better predictor of satisfaction with life for middle-aged and older adults. Significant age differences in life satisfaction, perceived stress, and coping resources were also found. The assessment of perceived stress and coping has important implications for life satisfaction among all age groups and has particular significance to older adults. By identifying age differences in variables associated with satisfaction with life, more effective efforts can be made to promote physical and psychological well-being in late adulthood.

Reminiscence and Life Review

1054

Birren, James E., and Kathryn N. Cochran. Telling the stories of life through guided autobiography groups. Baltimore, MD: Johns Hopkins University Press, 2001, 190 pp., appendices.

AUTOBIOGRAPHIES. GUIDED AUTOBIOGRAPHY GROUPS. LIFE REVIEW. TRAINING TECHNIQUES.

Based on the authors' 25-year experience of conducting autobiography groups, the authors discuss the topics that organizers face when developing programs for adults who wish to recall and write down their life histories. The book is designed to help professionals and trained workshop leaders at community centers, senior centers, schools, and other settings to guide participants in exploring major themes of their lives so that they can organize and write their life stories and share them in a group with others. The authors explain the concept of guided autobiography, discuss the benefits to the group participants, and provide logistical information on the ways to plan, organize, and set up a group. The appendices provide exercises, handouts, and suggested adaptations for specific groups. The book also explains systematic techniques for priming memories, including the history of family and of one's life work; the role of money, health, and the body; and ideas about death.

Value Orientations

1055

Erber, Joan T., Irene G. Prager, and Lenore T. Szuchman. Ain't misbehavin': the effects of age and intentionality on judgments about misconduct. *Psychology and Aging* 16(1):85-95, March 2001.

AGE DIFFERENCES. ELDERLY. INTENTIONALITY. JUDGMENT. MISCONDUCT. YOUNG ADULTS.

In 2-person perception experiments, young and older perceivers read a scenario about a young or old female target who leaves a store without paying for a hat. In Experiment 1, the target claims she forgot she was wearing the hat when questioned by the manager. Perceivers thought the manager would have greater sympathy, less anger, and would recommend less punishment when the target was old. In Experiment 2, the target clearly forgot to pay for the hat, clearly stole it, or had ambiguous intentions. In the ambiguous condition, perceivers attributed the young target's behavior more to stealing and the old target's behavior more to forgetting. In the forget condition, young perceivers had equal sympathy for the young and old targets and held them similarly responsible, but older perceivers had greater sympathy for the forgetful old target and held her less responsible than they did the forgetful young target.

DEMOGRAPHY OF AGING

1056

Koenig, Cynthia, and Walter R. Cunningham. Adulthood relocation: implications for personality, future orientation, and social partner choices. *Experimental Aging Research* 27(2):197-213, April-June 2001.

AGE DIFFERENCES. DEMOGRAPHIC CHARACTERISTICS. ELDERLY. GEOGRAPHICAL RELOCATION. INCOME LEVELS. MIDDLE-AGED ADULTS. PERSONALITY TRAITS. REGIONAL MIGRATION. YOUNG ADULTS.

The purpose of this study was to learn the reasons why individuals relocate and whether relocaters differ from nonrelocaters on demographic, social, and personality factors. One hundred participants from three age groups, 34 to 46 (young/middle-aged), 54 to 66 (young/old), and 69 to 93 (older) years, were designated as relocaters or residents as a junction of months of residence. Relocaters did not differ from residents in age, income, health, or marital status. Reasons provided for relocating revealed the following differences: young/middle-aged moved for employment reasons, young/old moved for reasons of retirement, and older adults relocated to be closer to family members. No differences in network size occurred and older relocaters selected more cards in a social partner selection task. Most interesting was the finding that relocaters scored higher on Openness to Experience and Future Orientation. These data suggest personality may be an important trait that explains why some individuals are more likely to relocate.

1057

Serow, William J. Retirement migration counties in the southeastern United States: geographic, demographic, and economic correlates. *The Gerontologist* 41(2):220-227, April 2001.

DEMOGRAPHIC CHARACTERISTICS. REGIONAL MIGRATION. RETIREMENT. SOUTHEASTERN UNITED STATES.

This article is a brief empirical attempt to identify rural areas in the Southeast United States that have consistently attracted older migrants since 1950 and to ascertain the social, demographic, and geographic characteristics of these areas of destination that differentiate them from otherwise (initially) similar areas. These counties are followed over the successive censuses from 1950 through 1990, identifying those that have consistent experienced elderly in migration at a rate substantially greater than the overall level. These retirement counties are concentrated in Florida, on the fringes of or adjacent to metropolitan areas or in mountain and coastal locations. The article presents regression analysis of geographic, demographic, and economic/structural correlates of migration. This analysis suggests that retirees are attracted to coastal locations whose existing populations have consistently achieved some measure of prosperity and are not dissimilar from the retirees themselves.

PRIMARY RELATIONS

Family Relations

1058

Bernard, Miriam. Continuity and change in the family and community life of older people. *Journal of Applied Gerontology* 20(3):259-278, Sept. 2001.

FAMILY RELATIONS. UNITED KINGDOM. URBAN AREAS.

This study examined the family and community networks of elderly persons living in the following three urban areas of England: Bethnal Green (an inner-city area of London), Wolverhampton (a metropolitan borough in the West Midlands), and Woodford (a northeastern suburb of London). These were the locations for landmark community-based studies in the 1940s and 1950s. This study shows that although most older people still have kinship-based networks, the ways in which kinship is experienced—especially concerning the interchange of care and support—are different. Relationships between the generations have altered, with support more often being located within a framework of equality and mutual reciprocity. Retirement is now more common, with leisure activities being much more central to the lives of older individuals. The study raises questions about the ways policy and practice now need to respond to what is a much more complex and dynamic experience of the family and community lives of older individuals.

1059

Szinovacz, Maximiliane E., and Adam Davey. Retirement effects on parent-adult child contacts. *The Gerontologist* 41(2):191-200, April 2001.

ADULT CHILDREN. PARENT-CHILD RELATIONS. RETIREMENT.

Purpose: This study examined whether parents' retirement influences their contacts (visits, telephone/letter) with adult children outside the household. Design and Methods: The study relied on data from the National Survey of Families and

Households. The sample consisted of parent-adult child dyads where parents were aged 55-75 at time 2 and adult children resided outside the household at both waves (N = 2,153 parent-adult child dyads, based on reports from 792 parents). Generalized estimating equations (GEE) with robust standard errors were used. Retirement has no significant effect on telephone contacts. Retired parents maintain frequent visits with children. For children living within 10 miles, mothers' retirement is associated with fewer and fathers' retirement with more visits. This trend varies by number of children, length of retirement, and child's gender. For children living more than 10 miles away, retired mothers decrease visits with childless children, whereas retired fathers increase visits with childless children. We attribute these findings to the gender-specific salience of child contacts for retirees and suggest that future research address children's and parents' expectations for postretirement contacts.

Grandparent-Grandchild Relations

1060

Fuller-Thomson, Esme, and Meredith Minkler. American grandparents providing extensive child care to their grandchildren: prevalence and profile. *The Gerontologist* 41(2):201-209, April 2001.

CHILD CARE. DEMOGRAPHIC CHARACTERISTICS. GRANDPARENT-GRANDCHILD RELATIONS. RESEARCH TRENDS.

Purpose: This study sought to determine the prevalence and profile of grandparents providing extensive care for a grandchild (grandparents who provide 30+ hours per week or 90+ nights per year of child care, yet are not the primary caregiver of the grandchild). Design and methods: Secondary analysis of the 3,260 grandparent respondents in the 1992-94 National Survey of Families and Households (NSFH). Extensively caregiving grandparents were compared with custodial grandparents (those with primary responsibility for raising a grandchild for 6+ months), noncaregivers, occasional caregivers (< 10 hours per week), and intermediate caregivers using chi-square tests, one-way analysis of variance tests, and logistic regression analyses. Close to 7% of all grandparents provided extensive caregiving, as did 14.9% of those who had provided any grandchild care in the last month. Extensive caregivers most closely resembled custodial caregivers and had least in common with those grandparents who never provided child care. Areas for future research, policy, and practice are highlighted, including the potential impact of welfare reform legislation on extensively caregiving grandparents.

Family Caregivers and Caregiving

1061

John, Robert, et al. Toward the conceptualization and measurement of caregiver burden among Pueblo Indian family caregivers. *The Gerontologist* 41(2):210-219, April 2001.

CAREGIVER BURDEN. NATIVE INDIANS. PUEBLO INDIANS. RESEARCH TECHNIQUES.

Purpose: The purpose of this study was to evaluate burden experienced by a group of American Indian primary family caregivers and to determine if caregiver burden is a multidimensional concept. Design and Methods: This analysis is based on the results of a survey questionnaire administered to 169 Pueblo primary family caregivers in New Mexico. Analysis of the items composing the Caregiver Burden scale indicated that caregiver burden is multidimensional and consists of several types of

burden. Caregiver burden, as identified in this sample, is composed of four dimensions: role conflict, negative feelings, lack of caregiver efficacy, and guilt. Investigations of caregiver burden should consider the multidimensionality of this experience and evaluate burden accordingly. By identifying the specific type of burden that a caregiver experiences, interventions can be targeted more accurately to support family caregiving.

1062

Thomas, Philippe, et al. Family, Alzheimer's disease and negative symptoms. *International Journal of Geriatric Psychiatry* (UK) 16(2):192-202, Feb. 2001.

ALZHEIMER'S DISEASE. FAMILY RELATIONS. PSYCHODIAGNOSIS. SYMPTOMATOLOGY.

The aim of this study is to look at the correlation between the presence of apathy measured by Marin's scale and family complaints related to withdrawal and the loss of motivation or depression. The multicentre study was performed on 58 non-demented elderly people, 132 outpatients with Alzheimer's-type dementia, as well as their main caregiver. After agreement of the patients and the family, the patients were assessed using different scales: Cornell's for depression, Marin's for apathy, MMS for cognitive disorders, and IRG for dependence. At the same time, two self-administered questionnaires were given to the patients' families: one concerning a list of complaints scored from 1 to 4 relating to various disorders and the other addressing the boundary ambiguities translated from Boss' questionnaire. The 58 non-demented people were 81.20 years old ± 13.75. One hundred and thirty-two demented patients were included: 39 men and 93 women. The mean age was 79.47 years ± 9.03. The first family complaint relates to the loss of motivation (65%). Apathy and depression occur more frequently in dementia, in particular when the MMS is degraded. Depression and apathy attracted a high complaint score. In our study, the score of boundary ambiguity is higher among patients with a weak cognitive status. A high level of ambiguity is accompanied by a high score of family complaints. When the family complaint concerning the loss of motivation is present, apathy is significantly more common. Family complaints about withdrawal and loss of motivation are frequently present and are congruent with the actual presence of apathy in the patient. It bears witness to the distress felt by families faced with the loss of ability noted in the demented person. The family's difficulties are increased by the patient's depression.

1063

Whitlatch, Carol J., et al. The stress process of family caregiving in institutional settings. *The Gerontologist* 41(4):462-473, June 2001.

CAREGIVER STRESS. FAMILY RELATIONS. NURSING HOMES. SKILLED NURSING FACILITIES. STRESS PROCESS MODEL.

This study adapts the Stress Process Model (SPM) of family caregiving to examine the predictors of depression in a sample of caregivers ($N = 133$) with demented relatives residing in suburban skilled nursing facilities. The authors interviewed family caregivers of family members residing in these facilities, using a variety of measures to assess primary stressors, secondary strain, nursing home stressors, and caregiver depression. The authors used blockwise regression analysis to determine the predictors of caregivers. The results indicated that positive resident adjustment to placement was best predicted by the closeness of the resident-caregiver relationship and nursing home stressors. Caregiver strain, resident adjustment, and nursing home stressors best

predicted caregiver adjustment. In turn, the best predictors of caregiver depression included caregiver age, caregiver adjustment to the nursing home, and nursing home stressors.

MIDDLE AGE

Physiological Changes

1064

Watkins, Rebecca A., et al. Informants' knowledge of reproductive history and estrogen replacement. *Journal of Gerontology: Medical Sciences* 56A(3):M176-M179, March 2001.

ALZHEIMER'S DISEASE. ESTROGEN REPLACEMENT. HEALTH SELF-CARE. REPRODUCTIVE HISTORY. WOMEN.

There has been much interest in assessing estrogen use in healthy older women and those with Alzheimer's disease. However, data for the women with Alzheimer's disease must be obtained from an informant. The aim of this study was to better understand what informants are likely to know about reproductive history and estrogen use. Reproductive history data from informants of Alzheimer's patients were modeled by comparing responses from 40 cognitively healthy older women with that of a designated informant. The designated informants were similar in demographics to informants for patients with Alzheimer's disease. Informant data regarding reproductive history was likely to be accurate, when known. However, 30% of the subjects did not identify an informant who had personal knowledge of them. Of those informants who had personal knowledge of the subject, accuracy for those who reported that they knew the information varied depending on the aspect of reproductive history assessed (age of menarche, 29%; age of menopause, 20%; pregnancies, 63%; live births, 92%; hysterectomy, 92%; and postmenopausal estrogen use, 82%). Daughters served as the most likely and most accurate informants in this study. This study demonstrates that information obtained from informants for patients with Alzheimer's disease is likely to be accurate for some but not all aspects of reproductive history. Of concern for such studies will be the 30% of patients who do not have an informant with personal knowledge about them.

Personality Changes

1065

Lewchanin, Shari, and Louise A. Zubrod. Choices in life: a clinical tool for facilitating midlife review. *Journal of Adult Development* 8(3):193-196.

LIFE REVIEW. MIDDLE-AGED ADULTS. MIDLIFE REVIEW.

A critical developmental task of midlife involves reviewing one's past as well as preparing for one's future. The ability to identify past choices, take responsibility for them, and use developing patterns in future decision making is seen as a critical component of continued adult development. Presented here is Choicemap, a structured clinical tool designed to guide a midlife review. Engaging in this process assists adults in developing choice-making skills and provides a powerful clinical intervention.

WORK AND RETIREMENT

Age Discrimination

1066

Firbank, Oscar. Human rights enforcement agencies and the protection of older workers against discrimination. *Journal of Aging and Social Policy* 12(3):65-86, 2001.

AGE DISCRIMINATION. EMPLOYMENT DISCRIMINATION. HUMAN RIGHTS AGENCIES. LAW ENFORCEMENT.

This article seeks to provide insight into the ways a human rights enforcement agency, the Quebec Human Rights Commission, implements legal dispositions prohibiting age discrimination in employment. Drawing on data from claims filed before the commission, the article established a quantitative profile of cases and examines the factors that are involved in the decisions made by the commission. It is argued that (1) the commission's approach in investigating age discrimination and (2) the burden of proof placed on respondents are main contributing factors to a very limited number of cases being validated. Nevertheless, despite apparent shortcomings, the commission still fulfills an important role in defining and promoting older workers' rights. Its overall impact can be addressed only in connection with other social and employment policies geared for older workers. In conclusion, some recommendations to improve the functioning of the commission are made.

1067

Segrave, Kerry. Age discrimination by employers. Jefferson, NC: McFarland, 2001, 313 pp.

AGE DISCRIMINATION. ECONOMIC HISTORY. EMPLOYMENT DISCRIMINATION. LABOR HISTORY. SOCIAL HISTORY.

In 1907, the editor of the *New York Times* set the tone for age discrimination in employment: "Employers naturally look to the young. A man or woman of advanced years is apt to be given to old fashioned ways of doing things, and open to suspicion of having the unforgivable fault, in modern business, of slowness." Age discrimination, the author notes, has existed throughout the 20th century, sometimes in public and other times not. This volume examines the employment sector and its part in age discrimination in the United States: treatment of the issue by the media, the extent of age bias, how the older workers have been viewed in the past and present, the rationales that businesses present for refusing to hire older workers or for dismissing them, and the response of several levels of government to this issue. Foreign data are used for comparison.

Workplace Task Performance

1068

Morrow, Daniel G., et al. The influence of expertise and task factors on age differences in pilot communication. *Psychology and Aging* 16(1):31-46, March 2001.

AGE DIFFERENCES. AIR CONTROL COMMUNICATION. AIRCRAFT PILOTS. ELDERLY. EXPERTISE. MIDDLE-AGED ADULTS. TASK ANALYSIS. TASK PERFORMANCE. YOUNG ADULTS.

The influence of expertise and task factors on age differences in a simulated pilot-Air Traffic Control (ATC) communication task was examined. Young, middle-aged, and older pilots and nonpilots listened to ATC messages that described a route through an airspace, during which they referred to a chart of this airspace. Participants read back each message and then answered a probe question about the route. It was found that pilots read back messages more accurately than nonpilots, and younger participants were more accurate than older participants. Age differences were not reduced for pilots. Pilots and younger participants also answered probes more accurately, suggesting that they were better able to interpret the ATC messages in terms of the chart in order to create a situation model of the flight. The findings suggest that expertise benefits occur for adults of all ages. High levels of flying experience among older pilots (as compared with younger pilots) helped to buffer age-related declines in cognitive resources, thus providing evidence for the mediating effects of experience on age differences.

ECONOMIC ISSUES

Economic Conditions

1069

Quandt, Sara A., et al. Meaning and management of food security among rural elders. *Journal of Applied Gerontology* 20(3):356-376, Sept. 2001.

FOOD SECURITY. NORTH CAROLINA. POVERTY. RURAL AREAS.

Food security is the limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable food in socially acceptable ways. This study uses fixed response and textual data obtained through in-depth interviews with adults 70 years or older from a multiethnic population in rural North Carolina to examine the incidence of food insecurity and how older adults experience food insecurity and maintain food security. The authors interviewed 145 elders up to five times during the course of 1 year. Responses to standard food insecurity questions indicate that only 12% of older adults experience food insecurity. Nevertheless, analysis of textual data reveal common themes concerning food insecurity that suggest that these questions may underestimate the number of rural elders who are food insecure and may not tap the potential vulnerability of others who are dependent on precarious nutritional self-management strategies to meet their needs.

Income and Wealth

1070

Ballantyne, Peri, and Victor W. Marshall. Subjective income security of (middle) aging and elderly Canadians. *Canadian Journal on Aging/La Revue du vieillissement* 20(2):151-173, Summer 2001.

AGE DIFFERENCES. CANADA. ELDERLY. INCOME LEVELS. INCOME SATISFACTION. MIDDLE-AGED ADULTS.

The authors examine subjective income security among Canadians age 45 years or more, using quantitative data. They examine the relationship between demographic, socioeconomic, and sociopsychological variables and income security measured in multivariate analyses as the likelihood of dissatisfaction with current and expected future income. The authors' discussion is focused on several unexpected findings related to the effects of age, marital status, and gender on subjective income security. Five social-psychological theories—aspiration theory, reference group theory, equity theory, life review, and socialization/identity theory—may help to explain these findings. Although the theories cannot be tested using these data, they do provide directions for future research in this area. The authors conclude that subjective evaluations of income adequacy should not be the means by which social policies on income redistribution are determined.

1071

Ozawa, Martha N., and Yat-Sang Lum. Taking risks in investing in the equity market. *Journal of Aging and Social Policy* 12(3):1-22, 2001.

EQUITY MARKETS. INVESTMENT. PRIVATIZATION. RISK ANALYSIS. SOCIAL SECURITY.

Some policy makers and policy analysts have proposed that Social Security should be privatized to enable participants to achieve higher returns through investment in the stock market. How well individual retirees would fare financially under a privatized system largely depends on their decision to invest in the equity market rather than in other types of investment vehicles. For that reason, it is important to investigate the degree to which minority people are currently investing in this market. This article presents the findings of a study that compared the investment behavior of Blacks and Latinos aged 51 to 61 years with the investment behavior of their White counterparts. The major findings indicate that Blacks and Latinos are (1) less likely to invest in the equity than are Whites and (2) tend to invest smaller percentages of their assets in the equity market. Implications for policy are discussed.

Benefits

1072

Dietz, Tracy L. The Mexican American elderly and Supplemental Security Income: reasons and characteristics associated with nonuse. *Journal of Applied Gerontology* 20(3):292-306, Sept. 2001.

MEXICAN AMERICANS. SERVICE UTILIZATION. SUPPLEMENTAL SECURITY INCOME.

Using a national data set, this study examined the underutilization of formal services by older ethnic minorities. Specifically, the project revealed that older Mexican Americans, although likely to report income below the official poverty line, report low utilization rates of Supplemental Security Income (SSI). Analysis further

revealed that among older Mexican Americans who are eligible to receive SSI, those participants who had used another formal program the previous year had at least some formal education, lived with others, and/or reported that too many medical bills was a problem were statistically less likely to use SSI. Furthermore, the most common reasons for not using SSI were lack of knowledge and previous feelings of discrimination or mistreatment by SSI representatives and other formal providers.

Inheritance

1073

Legge, Varoe, and Kate O'Loughlin. The balance of benefit: a review of intergenerational transfers in Australia. *The Gerontologist* 40(5):605-611, Oct. 2000.

AGING. AUSTRALIA. BENEFITS. INTERGENERATIONAL RELATIONS. INTERGENERATIONAL TRANSFERS.

This article reviews the financial and nonfinancial transfers taking place intergenerationally and between older people and the community. Design and Method: Secondary data were used in the analysis and discussion to provide an overview of the Australian context. Within the public arena, governments provide major financial contributions through money transfers and the provision of residential support. Older people provide considerable community support by undertaking voluntary services. This article concludes that the balance of benefit is difficult to determine; however, in terms of public expenditure, older people are major recipients. Within the family, the balance of benefit is reversed. Older people are major monetary contributors to adult children and their families in the transition to an independent status. Older people are also the principal carers of their frail-aged partners, thus reducing both the burden of care on their adult children and government institutions. The analysis reported here has major implications for the development of policy and structural change and for reducing negative stereotypes of dependency in old age.

SOCIETY AND THE ELDERLY

Sociology of Aging: General Issues

1074

McMullin, Julie Ann. Diversity and the state of sociological aging theory. *The Gerontologist* 40(5):517-530, Oct. 2000.

AGING. INCOME INEQUALITY. SOCIOECONOMIC STATUS. SOCIOLOGY OF AGING. THEORETICAL ORIENTATIONS.

In the literature on aging there have been almost simultaneous calls for researchers to make more explicit links between theory and research and for researchers to incorporate diversity in their work. Although gerontologists have begun to document diversity, theory is often absent from this research. In this article, the author examines sociological aging theories of inequality and argues that this absence of theory may not be due to an oversight on the part of researchers. Rather, aging theories need to be rethought to be better suited for diversity research.

Automobile Driving and Mobility

1075

Foley, Daniel J., et al. Driving cessation in older men with incident dementia. *Journal of the American Geriatrics Society* 48(8):928-930, August 2000.

AUTOMOBILE DRIVING. DEMENTIA. DRIVING ABILITY.

This study sought to determine the prevalence and cessation of driving among older men with incident dementia in the Honolulu–Asia Aging Study.The design was a retrospective cohort data from a community-based study of incident dementia. The setting was the Honolulu Heart Program and the Honolulu–Asia Aging Study. A total of 643 men were evaluated for the incidence of Alzheimer's disease or other dementia between the fourth and the fifth examination of the Honolulu Heart Program. Driving history, diagnosis of dementia, grip strength, walking speed, standing balance test, interviewer's rating of vision status, and the neurologist's notes on mentions of driving behavior from informal interviews with a caregiver or family informant.The prevalence of driving declined dramatically with level of cognitive functioning. Among 162 men evaluated and found to have normal cognitive functioning, 78% still drove, compared with 62% of 287 men with poor cognitive functioning but no clinical dementia, 46% of 96 men with a new diagnosis of very mild dementia (Clinical Dementia Rating [CDR] = 0.5), and 22% of 98 men with a new diagnosis of mild dementia (CDR = 1). Only one of 23 men diagnosed with moderate or more severe staged incident dementia (CDR > 1) was driving. About 10% of the 59 demented persons still driving relied on co-pilots, and only one driver was reported as involved in a crash according to a review of the neurologists' notes. Incident dementia is a major cause of driving cessation. Based on these data, we estimate that approximately 4% of male drivers aged 75 years and older nationwide (about 175,000 men) have dementia. This number will increase with the projected growth of drivers aged 75 years and older.

1076

Sims, Richard, et al. Mobility impairments in crash-involved older drivers. *Journal of Aging and Health* 13(3):430-438, August 2001.

AUTOMOBILE ACCIDENTS. AUTOMOBILE DRIVING. MOBILITY IMPAIRMENT. PHYSICAL DISABILITIES. SELF-REPORTS.

This study sought to evaluate potential associations of impairment in physical function with motor vehicle crash involvement in older drivers. Case participants were randomly selected residents of Mobile County, AL, aged 65 years or older, who has sustained an at-fault motor vehicle accident in 1996. Similarly selected accident-free controls were frequency matched to cases on gender and age. Self-report data on demographic variables, medical conditions, medications, driving exposure, and function were collected by telephone interviewers. Findings indicated that, relative to accident-free subjects, accident-involved drivers were significantly more likely to report difficulty walking one fourth of a mile and moving outdoors. Marginally significant associations were observed for difficulty in carrying a heavy object 100 yards and for the occurrence of falls the preceding year. Increasing numbers of functional limitations were directly related to the odds of accident involvement. Therefore, in comparison to accident-free controls, accident-involved older drivers were more likely to report other mobility-related impairments, possibly including falls.

Status and Role

1077

Litwin, Howard. Social network type and morale in old age. *The Gerontologist* 41(4):516-524, June 2001.

DEMOGRAPHIC CHARACTERISTICS. HEALTH STATUS. ISRAEL. MORALE. SOCIAL NETWORKS.

The aim of this study was to derive network types among an elderly population and to examine the relationship of network type to morale. Secondary analysis of data compiled by the Israeli Central Bureau of Statistics ($N = 2,079$) was employed and network types were derived through K-means cluster analysis. Respondents' morale scores were analyzed using regression techniques on network types, controlling for background and health variables. Five network types were derived. Respondents in diverse or friends networks reported the highest morale. Those in exclusively family or restricted networks had the lowest. Multivariate regression analysis underscored that certain network types were second among the study variables in predicting respondents' morale, preceded only by disability level. Implications are reviewed.

Ethnicity and Cross-Cultural Relations

1078

Ajrouch, Kristine J., Toni C. Antonucci, and Mary R. Janevic. Social networks among Blacks and Whites: the interaction between race and age. *Journal of Gerontology: Social Sciences* 56B(2):S112-S118, March 2001.

AGING. BLACKS. RACIAL DIFFERENCES. SOCIAL NETWORKS. WHITES.

This study examined the main and interactive effects of age and race on the core characteristics of social networks including size, frequency of contact, geographical proximity, and composition of network. Respondents were drawn from a stratified probability sample of people aged 20-93 in the greater Detroit metropolitan area. Approximately 30% of the sample were African American, and people aged 60 and older were oversampled ($N = 1,382$). The authors used hierarchical regression analysis to estimate the influence of race and age on each component of social network, controlling for marital status, gender, and education. An interaction term (Race $\times$ Age) was added to explore the extent to which age moderates any detected race differences. Older age was associated with smaller, less frequently seen, and less proximal networks that had a higher proportion of kin. Blacks and Whites were similar with regard to proximity, but Blacks had smaller networks, more contact with network members, and more family members in their networks. Race differences in frequency of contact and proportion of kin were moderated by age, such that the differences in these variables diminished with increasing age. A systematic analysis of how age, race, and their interaction influence the characteristics of social networks furnishes important empirical knowledge about social networks among diverse groups. Such data may provide a context for how, and some explanation for why, support exchanges occur.

1079

Kabir, Zarina Nahar, et al. Influence of sociocultural and structural factors on functional ability: the case of elderly people in Bangladesh. *Journal of Aging and Health* 13(3):355-378, August 2001.

ACTIVITIES OF DAILY LIVING. FUNCTIONAL STATE. INSTRUMENTAL ACTIVITIES OF DAILY LIVING. SOCIAL STRUCTURE. SOCIOCULTURAL SYSTEMS.

This study sought to describe and contextualize the functional status of elderly persons aged 60 years or older living in Bangladesh by relating the status to gender, region, and socioeconomic status. In this community-based study ($N = 696$), functional status was described through assessment of activities of daily living (ADL) and instrumental activities of daily living (IADL). Information was obtained on type of help used for ADLs and IADLs and reasons for nonperformance of IADLs. Findings indicate differential performance in ADLs and IADLs by gender and region. Socioeconomic status is found to influence IADLs only. Empirical evidence regarding type of help used and reason for not performing a task enables understanding of sociocultural and structural influence on functional ability. The underlying assumption of ADL and IADL instruments that an individual will perform an activity given physical or cognitive ability is questioned. It is suggested that sociocultural and structural factors are strong determinants of task performance.

SOCIAL PATHOLOGY AND THE ELDERLY

Abuse and Neglect

1080

Dyer, Carmel B., et al. The high prevalence of depression and dementia in elder abuse or neglect. *Journal of the American Geriatrics Society* 48(2):205-208, Feb. 2000.

DEMENTIA. ELDER ABUSE. ELDER NEGLECT. PSYCHOLOGICAL DEPRESSION.

The risk factors for mistreatment of older people include age, race, low income, functional or cognitive impairment, a history of violence, and recent stressful events. There is little information in the literature concerning the clinical profile of mistreated older people. This study sought to describe the characteristics of abused or neglected patients and to compare the prevalence of depression and dementia in neglected patients with that of patients referred for other reasons. The design was a case control study. Setting: Baylor College of Medicine Geriatrics Clinic at the Harris County Hospital District (Houston, Texas). Subjects were 47 older persons referred for neglect and 97 referred for other reasons. The intervention was a comprehensive geriatric assessment. The measurement comprised standard geriatric assessment tools. There was a statistically significant higher prevalence of depression (62% versus 12%) and dementia (51% versus 30%) in victims of self-neglect compared to patients referred for other reasons. This is the first primary data study that highlights a high prevalence of depression as well as dementia in mistreated older people. Geriatric clinicians should rule out elder neglect or abuse in their depressed or demented patients.

1081

Livermore, Patrick, Robert Bunt, and Katrina Biscan. Elder abuse among clients and carers referred to the Central Coast ACAT: a descriptive analysis. *Australian Journal on Aging* 20(1):41-47, March 2001.

AUSTRALIA. CAREGIVERS. ELDER ABUSE.

This study sought to examine elder abuse on the Central Coast of New South Wales by focusing on the prevalence, types of abuse, victim and abuser characteristics, recommended interventions and the identification of abuse at the time of referral for clients and carers referred to the Central Coast Aged Care Assessment Team (ACAT). The method used was a descriptive study of elder abuse within the population referred to the Central Coast ACAT (Wyong and Gosford Local Government Areas, New South Wales) between November 1996 to November 1997. Clients were identified retrospectively from Area Health records for three months and prospectively for nine months. The methodology was derived from research conducted by Kurrle et al. in 1997. The data indicated an elder abuse prevalence of 5.4%. The prevalence identified prospectively was more than double that identified retrospectively. Psychological abuse was the most common type of abuse. 75% of cases were identified as client abuse and 25% identified as carer abuse. The type of abuse and abuser characteristics differed markedly between cases where the client was abused and cases where the carer was abused. Differences in abuser characteristics were also apparent when comparing financial abuse cases with non-financial abuse cases. These results in relation to prevalence and types of abuse are comparable to those found in previous Australian research based around ACAT populations. The study indicates that there are differences between cases where the client is abused and cases where the carer is abused and that differences also exist between cases of financial abuse and non-financial abuse. The authors consider that an examination of these differences provides further insight into the complex and diverse nature of elder abuse. The study confirms elder abuse as a significant issue of concern and indicates the need for a coordinated response to the issue.

1082

Lowenstein, Ariela, and Pnina Ron. Adult children of elderly parents who remarry: etiology of domestic abuse. *Journal of Adult Protection* (UK) 2(4):22-32, Nov. 2000.

ADULT CHILDREN. DOMESTIC VIOLENCE. ELDER ABUSE. ELDERLY. REMARRIAGE.

This research paper from Israel examines damaging family reactions to later-life remarriage. It describes a study based on qualitative data from interviews with 17 children of elderly parents who had remarried and later reported their adult children to the social service agencies as abusers. An analysis of the interviews shows that the main cause of the abuse was financial and involved matters of inheritance, wills and the distribution of assets. The dynamics which lay behind this pattern of family behavior are explored.

1083

Shemmings, David. Adult attachment theory and its contribution to an understanding of conflict and abuse in later-life relationships. *Journal of Adult Protection* (UK) 2(3):40-49, Sept. 2000.

ADULT PROTECTION. ATTACHMENT BEHAVIOR. CAREGIVER ABUSE. ELDER ABUSE. ELDERLY. MARITAL CONFLICT.

This article considers some of the implications of research findings into relational conflict and couple violence and suggests links with elder abuse. An outline of a research design to study elder abuse from an attachment perspective is discussed.

Ageism

1084

Kalavar, Jyotsna M. Examining ageism: do male and female college students differ? *Educational Gerontology* 27(6):507-513, July/August 2001.

AGEISM. COLLEGE STUDENTS. FRABONI SCALE OF AGEISM. GENDER DIFFERENCES.

Two hundred undergraduate college students were surveyed regarding their preferences for the ages of 13 different service provides. Furthermore, the construct of ageism as measured by the Fraboni Scale of Ageism (FSA) was used for assessment with this sample. Results suggest that the mean age preference cited by respondents for all 13 service providers was below 40; the lowest mean age (26.5 years) was cited for the position of telephone operator, and the highest mean age (39.8 years) for the position of congressional representative. Except for the position of barber/beautician, gender differences for age preference for the remaining 12 service providers did not show statistical significance. Results from the FSA suggest that male college students displayed more ageist attitudes than female college students. Age was negatively correlated with FSA.

1085

Ragan, Amie, and Anne M. Bowen. Improving attitudes regarding the elderly population: the effects of information and reinforcement for change. *The Gerontologist* 41(4):511-515, June 2001.

AGEISM. ATTITUDES TOWARD AGING. BEHAVIORAL MODIFICATION. COLLEGE STUDENTS.

Altering negative attitudes associated with ageism may be possible by giving people accurate information about older people in conjunction with reinforcement change. For this study, 91 college students (35 men, 63 women; mean age = 20 years) participated in one of the following three groups: information only, information plus an innocuous discussion group, and information plus a reinforcement-to-change group. The participants' attitudes toward elderly persons were measured before, immediately after the intervention, and at a 1-month follow-up study. Changes across groups and time were analyzed using a analysis of variance (ANOVA) and *t* tests. Results indicated that information alone produced initial improvement in attitudes in all groups; however, only the group members who received additional reinforcement for change maintained positive attitudes at the 1-month follow-up study. Implications are considered.

Gambling

1086

Bazargan, Mohsen, Shahrzad H. Bazargan, and Mahfuja Akanda. Gambling habits among aged African Americans. *Clinical Gerontologist* 22(3/4):51-62, 2000.

BLACKS. CROSS-SECTIONAL STUDIES. GAMBLING. SENIOR CENTERS.

In a cross-sectional study we investigated the correlates of gambling habits among a sample of 80 independently living African American elderly persons. The participants were selected from two senior citizen centers that provide inexpensive or free pleasure trips from Los Angeles, California to gambling sites in Nevada. The data for this study were collected through face-to-face interviews conducted by three trained female middle-aged African American interviewers in October and November 1998. Our data identified 64% of this sample as non- or occasional gamblers, 19% as light to moderate gamblers and 17% as heavy to pathological gamblers. Our data document a statistically significant relationship between gambling behaviors and psychological well-being, anxiety, obsessive-compulsive symptoms, perceived health status, health locus of control, religiousness, and stressful life events. Results of this study point to an urgent need for (1) publicizing the potentially lethal physical and mental consequences of gambling among elderly persons, (2) developing educational programs and interventions to prevent gambling addiction from developing among the elderly, and (3) providing primary care practitioners with training to facilitate early detection and treatment of gambling problems among at-risk aged persons.

Poverty

1087

Lee, Jung Sun, and Edward A. Frongillo, Jr. Factors associated with food insecurity among U.S. elderly persons: importance of functional impairments. *Journal of Gerontology: Social Sciences* 56B(2):S94-S99, March 2001.

COGNITIVE IMPAIRMENT. ELDERLY. FOOD INSECURITY. IMPAIRED ELDERLY. NUTRITIONAL STATUS.

The authors examined factors associated with the food insecurity of elderly persons in the United States and particularly how functional impairments were associated with food insecurity. Data were from the Third National Health and Nutrition Examination Survey (1988-94) and the Nutrition Survey of the Elderly in New York State (1994). The authors used multiple logistic regression and a hierarchical logistic regression analyses to examine how functional impairments as well as sociodemographic and economic factors contributed to food insecurity in elderly persons. Low income, low education, minority, status, food assistance program participation, and social isolation were significantly related with food insecurity. Functional impairments were significantly related with food insecurity among elderly persons even after those factors were controlled. Food security in elderly persons is associated with functional impairments, suggesting that food insecurity in elderly persons comprises not only limited food affordability, availability, and accessibility but also altered food use. Food-insecure elderly persons experience multiple problems that prevent them from achieving nutritional well-being and seeking food assistance programs. Nutrition services should recognize and provide services to cover those needs.

GOVERNMENT, LAW, AND POLICY

1088

Iecovich, Esther. Pensioners' political parties in Israel. *Journal of Aging and Social Policy* 12(3):87-107, 2001.

ELECTIONS. ISRAEL. PENSIONERS' PARTIES. POLITICAL PARTIES. VOTING BEHAVIOR.

Involvement and participation of older persons in politics and political systems reflect the extent to which they are integrated into their society. During the last two decades, political parties have emerged in several countries, including Israel, and have run candidates in national elections. If only 10% of those aged 65 and older had voted for pensioners' parties in Israel, they would have qualified for two pensioners seats in the Knesset (Israel's parliament). However, they suffered complete defeat, as has been the case in most other countries. This article first describes the phenomenon of pensioners' political parties, examines the circumstances around their emergence, and presents their goals. Second, it identifies and analyzes the causes of their political defeat. Third, it discusses alternatives to political parties to promote the interests of the older population. Finally, implications for further research are raised.

HOUSING

Living Arrangements

1089

Wilmouth, Janet M. Living arrangements among older immigrants in the United States. *The Gerontologist* 41(2):228-238, April 2000.

IMMIGRANTS. INTERNATIONAL MIGRATION. LIVING ARRANGEMENTS. UNITED STATES.

This analysis uses data from the 1990 5% Public Use Microdata Sample (PUMS) to identify the individual-level characteristics that influence residential dependence among immigrants age 60 and older in the United States. Particular attention is given to differences among 11 immigrant groups. Separate models are shown by gender and marital status. The results indicate that Hispanic and most Asian immigrants, particularly those from Mexico, Central or South America, India, and the Pacific Islands, are at a greater risk of living with family than non-Hispanic White immigrants. Although resource, need, and demographic characteristics influence the risk of living with family, these individual-level characteristics do not explain the observed differences across the immigrant groups. These findings suggest that preferences that are shaped by the immigrant's experience as well as cultural background are an important determinant of immigrant living arrangements in later life.

Residence Relocation

1090

Lutgendorf, Susan K., et al. Effects of housing relocation on immunocompetence and psychosocial functioning in older adults. *Journal of Gerontology: Medical Sciences* 56A(2):M97-M105, Feb. 2001.

ELDERLY. FUNCTIONAL STATE. HOUSING. HOUSING RELOCATION. IMMUNOLOGICAL STATUS.

The psychological and physical response to moderate life stressors among older adults has not been well characterized. This research examines effects of voluntary housing relocation on distress and immune function in healthy older adults as a model for studying the effects of moderate life stress. Thirty older adults moving to congregate living facilities were assessed 1 month premove, 2 weeks postmove, and 3 months postmove. Twenty-eight nonmoving control subjects were assessed at similar time points. Subjects completed psychosocial questionnaires and had early morning blood draws in their homes. Blood samples were assayed for natural killer cell cytotoxicity (NKCC), interleukin-6 (IL-6), and IgG antibody titers to the Epstein Barr virus (EB V) viral capsid antigen. Movers demonstrated decreased vigor and elevated thought intrusion 1 month premove and 2 weeks postmove. By the 3-month follow-up, vigor increased, and intrusion decreased to levels commensurate with the controls. Averaged across all time points, movers showed lower NKCC than controls; however, post-hoc analyses indicate that by the 3-month follow-up time point, these differences were no longer significant. There were no differences between groups in IL-6 or in EBV antibody titers. Independent of the effects of group, higher levels of vigor were associated with greater NKCC at all assessments and with lower EBV titers at 2 weeks postmove. Findings suggest that in general, healthy older adults recover well psychologically from moderate, temporary life stressors such as moving. Whereas movers showed generally lower NKCC than controls, IL-6 and EBV antibody titers appeared not to be strongly affected by the stress of moving.

1091

Mirotznik, Jerrold, and Lenore Los Kamp. Cognitive status and relocation stress: a test of the vulnerability hypothesis. *The Gerontologist* 40(5):531-539, Oct. 2000.

COGNITIVE PROCESSES. IMPAIRED ELDERLY. NURSING HOMES. RELOCATION STRESS. VULNERABILITY HYPOTHESIS.

Purpose: This study investigated whether cognitively impaired nursing home residents are at particular risk of experiencing harmful effects during a mass, intra-institutional, interbuilding relocation. Design and Methods: A pretestpost-test experimental-comparison group design was used. Data on cognitive status, functional capacity, psychosocial health status, physical health status, and mortality were abstracted from the Minimum Data Set Plus and were analyzed using continuous and discrete survival analyses, controlling for covariates as well as baseline status of outcome variables. None of the Relocation × Cognitive Status interaction effects were significant. Relocation main effects indicated that movers in general were more likely than nonmovers to decline in physical health status. Evidence also emerged for a positive long-term effect of moving on psychosocial health status. These findings suggest cognitively impaired residents are not at unusual risk of harmful effects as a consequence of mass, interbuilding transfer. Given the significant relocation main effects, though, caution

must be taken in moving cognitively impaired residents, as it should be in moving any residents.

PHYSICAL ACTIVITIES AND RECREATION

1092

Haydar, Ziad R., et al. The relationship between aerobic exercise capacity and circulating IGF-1 levels in healthy men and women. *Journal of the American Geriatrics Society* 48(2):139-145, Feb. 2000.

AEROBIC EXERCISE. BALTIMORE LONGITUDINAL STUDY OF AGING. GENDER DIFFERENCES. HEALTH STATUS.

This study sought to determine whether aerobic capacity is associated independently with insulin-like growth factor-I (IGF-1) levels in healthy community-dwelling men and women. The setting was the Baltimore Longitudinal Study on Aging (BLSA). The design was a cross-sectional analysis of data from the population-based cohort of the Baltimore Longitudinal Study of Aging (BLSA). The authors studied 181 men and 92 women aged 20 to 93 years, volunteers in the Baltimore Longitudinal Study on Aging (BLSA). Subjects were free of endocrine, renal, hepatic, gastrointestinal, or cardiac diseases, and they were taking no medications known to interfere with the growth hormone-IGF-1 axis. All subjects underwent a single measurement of serum IGF-1 in the fasting state, as well as peak Vo^2 determinations during maximal treadmill exercise testing performed within one visit of the IGF-1 determination. Dual energy X-ray absorptiometry (DEXA) scans were performed in a subset of 171 subjects (64 women and 107 men) for determination of fat free mass (FFM). In the pooled group of women and men, univariate regression analysis revealed that age was correlated strongly with decreasing IGF-1 levels ($r = -0.53$, $p < .001$) and with peak Vo^2 ($r = –0.56$, $p < .001$). IGF-1 levels were also significantly correlated with peak Vo^2 ($r = 0.29$, $p < .001$). There were no significant gender-related differences in these relationships. On multivariate analysis, age ($r = –0.54$, $p < .001$), but not peak Vo^2 ($r = –0.01$, $p = .840$), remained strongly associated with IGF-1 levels. After adjustment of peak Vo^2 for FFM in subjects with DEXA scans, results were similar. These findings indicate that although both peak aerobic capacity and circulating IGF-1 levels decline with age, aerobic capacity is not independently related to circulating IGF-1 in healthy men and women across the adult life span.

1093

Messier, Stephen P., et al. Long-term exercise and its effects on balance in older, osteoarthritic adults: results from the fitness, arthritis, and seniors trial (FAST). *Journal of the American Geriatrics Society* 48(2):131-138, Feb. 2000.

AEROBIC EXERCISE. FITNESS, ARTHRITIS, AND SENIORS TRIAL. OSTEOARTHRITIS. PHYSICAL EXERCISE.

This study sought to examine the effects of 18-month aerobic walking and strength training programs on static postural stability among older adults with knee osteoarthritis. The design was a randomized, single-blind, clinical trial of therapeutic exercise. The study was both center-based (university) and home-based. Participants were a cohort of 103 older adults (age = 60 years) with knee osteoarthritis who were participants in a large ($N = 439$) clinical trial and who were randomly assigned to undergo biomechanical testing. The intervention consisted of an 18-month center- (3 months) and home-based (15 months) therapeutic exercise program. The subjects

were randomized to one of three treatment arms: (1) aerobic walking; (2) health education control; or (3) weight training. Measurements used consisted of force platform static balance measures of average length (Rm) of the center of pressure (COP), average velocity (Vel) of the COP, elliptical area (Ae) of the COP, and balance time (T). Measures were made under four conditions: eyes open, double- and single-leg stances and eyes closed, double- and single-leg stances. In the eyes closed, double-leg stance condition, both the aerobic and weight training groups demonstrated significantly better sway measures relative to the health education group. The aerobic group also demonstrated better balance in the eyes open, single-leg stance condition. Our results suggest that long-term weight training and aerobic walking programs significantly improve postural sway in older, osteoarthritic adults, thereby decreasing the likelihood of larger postural sway disturbances relative to a control group.

1094

Schmidt, Julia A., et al. Attrition in an exercise intervention: a comparison of early and later dropouts. *Journal of the American Geriatrics Society* 48(8):952-960, August 2000.

EXERCISE PROGRAMS. FRAIL ELDERLY. PHYSICAL EXERCISE. PROGRAM DROPOUTS.

This study sought to identify reasons for dropout and factors that may predict dropout from an exercise intervention aimed at improving physical function in frail older persons. This was an 18-month randomized controlled intervention in a community setting. The intervention comprised 2 groups: class-based and self-paced exercise. Participants were 155 community-dwelling older persons, mean age 77.4, with mildly to moderately compromised mobility. The primary outcome measure was dropout. Dropouts were grouped as: D0, dropout between baseline and 3-month assessment, and D3, dropout after 3-month assessment. Measurements of demographics, health, and physical performance included self-rated health, SF-36, disease burden, adverse events, PPT-8, MacArthur battery, 6-minute walk, and gait velocity. There were 56 dropouts (36%), 31 in first 3 months. Compared with retained subjects (R), the D0 group had greater disease burden ($p = .011$), worse self-perceived physical health ($p = .014$), slower usual gait speed ($p = .001$), and walked a shorter distance over 6 minutes ($p < .001$). No differences were found between R and D3. Multinomial logistic regression showed 6-minute walk ($p < .001$) and usual gait velocity ($p < .001$) were the strongest independent predictors of dropout. Controlling for all other variables, adverse events after randomization and 6-minute walk distance were the strongest independent predictors of dropout, and self-paced exercise assignment increased the risk of dropout. We observed baseline differences between early dropouts and retained subjects in disease burden, physical function, and endurance, suggesting that these factors at baseline may predict dropout. Improved understanding of factors that lead to and predict dropout could allow researchers to identify subjects at risk of dropout before randomization. Assigning targeted retention techniques in accordance with these factors could result in decreased attrition in future studies. Therefore, the results of selective attrition of frailer subjects, such as decreased heterogeneity, restricted generalizability of study findings, and limited understanding of exercise effects in this population, would be avoided.

COMMUNITY SERVICES

Social Services

1095

Goins, R. Turner, and Gerry Hobbs. Distribution and utilization of home- and community-based long-term care services for the elderly in North Carolina. *Journal of Aging and Social Policy* 12(3):23-42, 2001.

HOME HEALTH CARE. LONG-TERM CARE. SERVICE UTILIZATION. SOCIAL SERVICES.

Provision of home- and community-based long-term care is a growing concern at the national, state, and local levels. As more persons age, the need for these services is expected to rise. This analysis examines the distribution and utilization of three home- and community-based long-term care programs in North Carolina for each of the state's 100 counties. Maps were generated to examine how counties differed in respect to service utilization among the elderly. Great variability was found in the number of elderly using the services across the state as well as the percentage of Medicaid and/or age-eligible persons who used the program. Multivariate modeling for associations to service utilization was only possible for one of the long-term care programs. Results indicated that living alone, being non-White, and having a mobility and self-care limitation were all positively related to utilization. Percentage of persons 85 years of age or older and the ratio of institutional long-term care beds were negatively associated with utilization. The conclusion was drawn that states must engage in concerted efforts to ensure equity in access as home- and community-based long-term care.

1096

McCusker, Jane, et al. Use of community services by seniors before and after an emergency visit. *Canadian Journal on Aging/La Revue du vieillissement* 20(2):193-209, Summer 2001.

EMERGENCY DEPARTMENTS. HOSPITALIZATION. SERVICE UTILIZATION. SOCIAL SERVICES.

Using data from a cohort of 1,353 community-dwelling seniors visiting hospital emergency departments (EDs), the authors investigated (1) the prevalence (prior to the ED visit) and incidence (during a 3-month follow-up study) of use of publicly funded community services and (2) factors related to the use of services. Data were collected by face-to-face interviews in the ED and by telephone during the follow-up study. Prior to the ED visit, 59.8% of patients had some disability in activities of daily living (ADL); 16.8% of disabled patients received community services. Among patients who were not previously receiving these services, 45.4% developed one or more new ADL disabilities, only 23.5% of whom began to receive community services. Controlling for measures of need, patients admitted to the hospital were significantly more likely to receive services during the follow-up period than those released from the ED. There may be significant unmet needs for community services in this population.

1097

Shibusawa, Tazuko, Hisanori Ishikawa, and Daisaku Maeda. Determinants of service awareness among the Japanese elderly. *Journal of Applied Gerontology* 20(3): 279-291, Sept. 2001.

JAPAN. KINSHIP. KNOWLEDGE OF SERVICES. SERVICE UTILIZATION. SOCIAL SERVICES.

Although considerable research has been conducted on service awareness among older adults in the United States and Canada, little data are available on service awareness among the elderly in other nations. This study examined service awareness among 474 randomly selected elders in Japan. Awareness of four services mandated under the newly implemented Gold Plan was examined. The majority of elders were aware of in-home support services, whereas only half were aware of day care and respite services. Although close-kin networks have been found to inhibit service awareness among elders in the United States, logistic regression analysis revealed that gender and social support networks were the strongest predictors of overall service awareness among Japanese participants. Cultural implications of the findings are discussed.

1098

Tiamiyu, Mojisola F., and Lisa Bailey. Human services for the elderly and the role of university-community collaboration: perceptions of human service agency workers. Educational Gerontology 27(6):479-492, August 2001.

EDUCATIONAL PARTNERSHIPS. SOCIAL SERVICES. UNIVERSITIES.

Funding agencies have encouraged university-community collaboration in human services for many years. However, none of the studies reviewed for this paper has addressed the need for the type of university-community collaboration addressed in this study, namely, university-community agency collaboration. In particular, this study investigates human service agency workers' perceptions of the availability, accessibility, and adequacy of services to the elderly in northwest Ohio and how collaboration with a university can improve human delivery to consumers. The findings of the study provide a general indication of trends, experiences, and problems common to these agencies. The findings also suggest that agency workers do not necessarily have a negative perception of university-community agency collaboration; rather, many do not understand how such collaborations will improve services to consumers. Recommendations for enhancing university-community collaboration are made.

1099

Warnes, Anthony M., and Maureen A. Crane. The achievements of a multiservice project for older homeless people. *The Gerontologist* 40(5):618-626, Oct. 2000.

HOMELESSNESS. HOUSING. LOGISTIC REGRESSION ANALYSIS. PROGRAM EVALUATION. RESIDENTIAL CARE FACILITIES. SOCIAL SERVICES.

This report of the achievements of an experimental multiservice center in London for older street people begins with reviews of the types of long-term accommodation available for resettlement and the work of its outreach team, 24-hour open access rooms, and residential, assessment, and resettlement services. Two outcomes are examined: whether users returned to the streets and whether they were resettled in long-term housing. Those with alcohol dependency were most difficult to resettle. Logistic regression analyses of the factors influencing the two outcomes indicate that the duration of residence in the center was the predominant influence.

Professional Training

1100

Lowenstein, Ariela. The multidimensionality of education, research, and training in social gerontology—the Israeli experience. *Educational Gerontology* 27(6):493-508, July/August 2001.

ISRAEL. PROFESSIONAL EDUCATION. RESEARCH TRENDS. SOCIAL GERONTOLOGY. SOCIAL GERONTOLOGY EDUCATION.

The author examines the multidimensionality of education, research, and training in gerontology through a discussion of the significance and implications of developments in this area based on the Israeli scene. The discussion focuses on the issue of whether gerontology is an academic discipline based on the development of specialized knowledge, along with education and training, in a distinct academic framework or whether it constitutes part of professional training in a variety of academic fields. The article begins with a presentation of milestones in the development of gerontology in Israel, focusing mainly on social gerontology. It then offers a definition of an academic discipline and of a profession and distinguishes between them by examining the development of curricula in the field of aging in the following two contexts: social work studies on one hand, and specialization in gerontology toward a master's degree in this area at Haifa and Ben-Gurion Universities on the other. A model is presented that examines the mutuality among the evolutions in technology, demography, and information and their significance in the development of standards in education, training, and the dissemination of gerontological knowledge.

1101

Norman, Suzanne, et al. Continuing education needs in clinical geropsychology: the practitioners' perspective. *Clinical Gerontologist* 22(3/4):37-50, 2000.

CLINICAL GERIATRIC PSYCHOLOGY. CONTINUING EDUCATION. THERAPIST EDUCATION.

Presently, older adults are under-served by psychologists. This reflects a lack of psychologists proficient in clinical geropsychology to provide appropriate treatment. The present study provides information gathered from practitioners for planning continuing education programs in clinical geropsychology. The findings describe the characteristics of clinicians pursuing additional training to work with older adults, and their topical preferences and training needs to guide future continuing education offerings. In addition, the practitioners' opinions regarding a possible credential recognizing competence in clinical geropsychology are discussed.

1102

Reyes-Ortiz, Carlos A., and Carlos H. Moreno-Macias. Curricular strategies for geriatrics education in a medical school. *Educational Gerontology* 27(6):515-523, July/August 2001.

CURRICULUM DESIGN. GERIATRIC EDUCATION. GERIATRIC MEDICINE. MEDICAL EDUCATION. SPAIN.

Geriatric education at the University of Valle Medical School uses many teaching strategies in undergraduate and postgraduate programs. These include improving communication with older patients, accepting one's own aging, teaching human values, providing experiences with well elderly, and participating in an interdisciplinary

team. There are common curricular areas in geriatrics education for health care disciplines that include medicine, dentistry, nursing, speech therapy, physiotherapy, and occupational therapy. However, each discipline also has specific curricular components. There is a curricular program for family medicine and internal medicine residents. A curriculum design was approved for a new geriatrics fellowship program that is in the process of development. Finally, the progression of the curriculum runs according to the learning needs of each level of education among medical students, residents, and fellows.

Volunteer Services

1103

Warburton, Jeni, et al. Differences between older volunteers and nonvolunteers: attitudinal, normative, and control beliefs. *Research on Aging* 23(5):586-605, Sept. 2001.

ATTITUDES. AUSTRALIA. BRISBANE. DEMOGRAPHIC CHARACTERISTICS. SELF-CONCEPT. VOLUNTEERS.

It has been suggested that older persons constitute a rich potential source of volunteers, inasmuch as prior literature has highlighted the benefits and rewards of volunteering later in life. This article examines differences between volunteers and nonvolunteers in a ransom sample of older persons residing in Brisbane, Australia. Drawing on the theory of planned behavior as a framework, the article focuses on the beliefs that distinguish those who volunteer from those who do not. Findings from the study allowed for an assessment of both the costs and the benefits associated with volunteering; beliefs about the support of others, including the broader community, to volunteer; and beliefs about the barriers that might prevent volunteering. The implications of these findings to a country with an aging population are discussed.

Caregiver Support Services

1104

Burgio, Louis, et al. Judging outcomes in psychosocial interventions for dementia caregivers: the problem of treatment implementation. *The Gerontologist* 41(4):481-489, June 2001.

CAREGIVERS. DEMENTIA. PSYCHOSOCIAL TREATMENT. RESPITE SERVICES. TREATMENT OUTCOMES. TREATMENT TECHNIQUES.

In published dementia caregiver intervention research, there is widespread failure to measure the level at which treatment was implemented as intended, thereby introducing threats to internal and external validity. This article seeks to discuss the importance of inducing and assessing treatment implementation strategies in caregiving trials and to propose Lichstein's TI model as a potential guide. The efforts of a large cooperative research study of caregiving interventions, Resources for Enhancing Alzheimer's Caregiver Health (REACH), illustrates induction and assessment of the following three components of TI: delivery, receipt, and enactment. The approaches taken in REACH vary with the intervention protocols and include using treatment manuals, training and certification of interventionists, and continuous monitoring of actual implementation. Implications are discussed.

Formal and Informal Caregiving

1105

Atienza, Audie, et al. Gender differences in cardiovascular response to dementia caregiving. *The Gerontologist* 41(4):490-498, June 2001.

CARDIOVASCULAR DISORDERS. CAREGIVERS. DEMENTIA. GENDER DIFFERENCES.

This study examines gender differences in cardiovascular responses to laboratory-based stress as well as in ambulatory hemodynamic (i.e., blood pressure and heart rate) functioning among caregivers of persons with dementia. Participants in the study were 25 men and 25 women caregivers, matched by age, type of care recipient's dementia, and relationship to the care recipient. After cardiovascular reactivity to a laboratory-based caregiving stress was assessed, the ambulatory hemodynamic functioning levels of caregivers were measured in caregivers' natural environments. Findings revealed that female caregivers displayed greater systolic and diastolic blood pressure reactivity to a laboratory-based stress task (i.e., discussing caregiving difficulties) compared with male caregivers. In contrast, no gender differences were found for ambulatory hemodynamic functioning when aggregated overall or when in the presence of the care recipient. Practice implications of the findings are set forth.

1106

Cohen, Marc A., Jessica Miller, and Maurice Weinrobe. Patterns of informal and formal caregiving among elders with private long-term care insurance. *The Gerontologist* 41(2):180-187, April 2001.

CAREGIVERS. FORMAL CAREGIVING. INFORMAL CAREGIVING. LONG-TERM CARE INSURANCE. PRIVATE SECTOR.

The purpose of this report is to provide basic descriptive information on community-dwelling, disabled, private long-term care (LTC) insurance policyholders who have accessed policy benefits. We focus on how benefits are used, whether claimants feel they are getting appropriate value from their policies, and what the patterns are of formal and informal service use. Data were obtained from a nationally representative sample of 693 LTC insurance claimants who were receiving benefits while living in the community and 424 of their informal caregivers. Eight of the largest LTC insurance companies representing about 80% of the market participated in the study. LTC insurance benefits are well targeted; they serve those truly dependent on ongoing care. The vast majority of claimants are satisfied with their policies, understand their coverage, and find it easy to file claims. Because of their LTC benefits, substantial numbers of disabled elderly individuals report that they are able to remain at home instead of being forced to seek institutional care. The availability of LTC benefits reduces stress among informal caregivers. For most claimants, formal care did not replace informal caregiving. As the LTC insurance market continues to grow and mature, there will be changes in the profile of claimants, the service delivery system, and the design of policies. Expansions in the private market will be associated with a greater number of disabled elderly remaining in their homes with a maintenance of and enhanced resiliency of informal support networks.

1107

Laprise, Réjeanne, Francine Dufort, and Francine Lavoie. Construction and validation of a consultation measurement scale for caregivers of aged persons. *Canadian Journal on Aging/La Revue du vieillissement* 20(2):211-232, Summer 2001.

CAREGIVERS. CONSULTATION MEASUREMENT SCALE. PREDICTIVE VALIDITY.

This study sought to establish the reliability and construct validity of the Consultation Expectation Scale for caregivers of elderly persons on the basis of Gerald Caplan's mental health consultation model. The reliability was determined by the Cronbach alpha coefficient ranging from .89 to .95 and the item-total correlation varying between .63 and .75. The content validity was demonstrated by an intraclass coefficient of .92 on all items evaluated by the judges. The internal consistency was determined by the correlations between the global scale and the subscales ranging from .67 to .91. The convergent validity relied on the positive and moderate correlations between the consultation expectations on one hand, and the need for support and psychological distress on the other. This scale demonstrated good psychometric qualities. Its utilization should permit the consultants to keep the caregiver's point of view in mind, which will enable them to become more effective in their work.

1108

Roberge, Danièle, et al. Caregiver perceptions of care and service quality in geriatric long-term care units: development and validation of a measurement tool. *Canadian Journal on Aging/La Revue du vieillissement* 20(2):251-269, Summer 2001.

CAREGIVERS. PREDICTIVE VALIDITY. QUALITY OF CARE. RESEARCH TECHNIQUES.

This study sought to develop and validate a tool for measuring perceptions of caregivers of the quality of care and services in geriatric assessment units. It was designed to reproduce the notion of quality for caregivers. The validation of the tool was based on analyses of responses provided by caregivers ($N = 274$) to questions of perceived quality and to a certain number of questions necessary for the evaluation of its metric qualities. The measurement scale developed included 25 items and it demonstrated good internal consistency. Cronbach's alpha coefficients are 0.95 for the global index, and they range from 0.88 to 0.91 on the subscales. The various analysis supported a three-dimensional structure of the notion of quality for caregivers, explaining 66% of the total variance. The dimensions include the following: exchanges with professional's on the relative's condition, care given to a loved one, and planning the discharge. The authors hope that this tool will promote the inclusion of the points of view of caregivers in the process of quality improvement and assessment.

1109

Shifren, Kim. Early caregiving and adult depression: good news for young caregivers. *The Gerontologist* 41(2):188-190, April 2001.

CAREGIVING. MIDDLE-AGED ADULTS. PSYCHOLOGICAL DEPRESSION. YOUNG ADULTS.

Purpose: Limited information is available on the effects of caregiving experiences on the adult development of caregivers under 21 years old in the United States. The current study provided an examination of the effects of youthful caregiving on the mental health of these persons when adults. Design and Methods: Twelve individuals, 23 to 58 years old, were given brief phone interviews with semistructured questions, and then they completed questionnaires on their early caregiving experiences and

current mental health. To be included, respondents must have provided primary caregiving assistance (i.e., bathing, dressing, feeding, etc.) for at least one parent when the caregiver was under 21 years old. The findings showed that individuals were young caregivers for parents with a number of problems, ranging from dementia to drug abuse. Individuals reported more positive mental health than negative mental health, and only two individuals had scores indicative of clinical depressive symptoms. It appears that early caregiving experiences may not result in universally negative consequences in the adulthood of young caregivers.

INSTITUTIONAL AND NONINSTITUTIONAL CARE

General Issues in Long-Term Care

1110

Finlayson, Marcia, and Betty Havens. Changes over time in long-term care use, ADL and IADL among the oldest-old participants of the aging in Manitoba longitudinal study. *Canadian Journal on Aging/La Revue du vieillissement* 20(2):271-290, Summer 2001.

ACTIVITIES OF DAILY LIVING. CANADA. FRAIL ELDERLY. INSTRUMENTAL ACTIVITIES OF DAILY LIVING. LONGITUDINAL STUDIES. LONG-TERM CARE. MANITOBA. SERVICE UTILIZATION.

By the year 2031, the oldest old (85 years and older) could well make up 4% of the total Canadian population. This article reports on changes in long-term-care use, activities of daily living (ADLs), and instrumental activities of daily living (IADLs) experienced by the oldest-old participants in the Aging in Manitoba Longitudinal Study. Of the participants, 38.4% did not use long-term care over the periods of interests. Some 75% to 88% of participants were able to continue to eat, move around the house, and get in and out of bed without the assistance of another person. For IADLs, the proportion of people not requiring assistance over time ranged from 3% (doing household repairs) to 58% (making a cup of tea or coffee). The findings of these analyses point to the heterogeneity of functional abilities among the oldest old and contribute additional knowledge to the growing literature on this special population.

Home Care

1111

Cestari, Laura, and Eileen Currier. Caring for the homebound elderly: a partnership between nurse practitioners and primary care physicians. *Home Health Care Management and Practice* 13(5):356-360, August 2001.

HOME HEALTH CARE. NURSES. PHYSICIANS. PRIMARY CARE.

Access to primary care and case management is an increasing challenge for growing numbers of homebound elderly. Physicians, nurse practitioners, nurses, and patients are affected by constraints of the health care system. Collaborative models incorporating the expertise of nurse practitioners may be useful to address the unique need of homebound elders who chose to remain in the community. Home visits by physicians, nurse practitioners, and nurses each address various components of the complex needs of elderly homebound patients. In combination, their expertise can provide access, ensure quality, and promote cost-effective primary care and case management. This article describes an innovative partnership between physicians and

nurse practitioners addressing barriers to primary care for homebound elders in the Boston area.

1112

Dubuc, Debra. Wound management in home care: optimizing outcomes with APRNs. *Home Health Care Management and Practice* 13(5):361-366, August 2001.

ADVANCED PRACTICE REGISTERED NURSES. HOME HEALTH CARE. WOUND TREATMENT.

With the financial ramification of the prospective payment systems, many home care agencies are turning to advance practice registered nurses (APRNs) who specialize on wound care to help provide the most up-to-date and efficient wound treatment possible. Individual patient consultation, educational programs for staff, clinical record audits, and committee memberships are but a few of the ways that wound care APRNs can be beneficial to home health agencies. This has positive outcomes for the patients, whose healing is accelerated, and for the home health agency, which reduces costs and provides clinical support for staff.

1113

Hall, Ruth, and Peter Coyte. Determinants of home care utilization: who uses home care in Ontario? *Canadian Journal on Aging/La Revue du vieillissement* 20(2):175-192, Summer 2001.

CANADA. HOME HEALTH CARE. ONTARIO. SERVICE UTILIZATION.

The Ontario household sample of the 1994-1995 National Population Health Survey (NPHs) Health File was linked to the Ontario Home Care Administrative System database to explore the relationship between individual survey respondent characteristics and home care utilization in the year following the survey to evaluate the relevant predictors of home care utilization. The prevalence of home care use among study subjects was 4.3%. The factors independently associated with an increased probability of future home care use included being aged 75 years or older, experiencing limitations in Activities of Daily Living/Instrumental Activities of Daily Living, having poor health status, and having had prior home care use. Further work is needed to better understand the factors associated with utilization to better define the goals of home care and assist in the development of home care funding models.

1114

Kellogg, F. Russell, and Philip W. Brickner. Long-term home health care for the impoverished frail homebound aged: a twenty-seven-year experience. *Journal of the American Geriatrics Society* 48(8):1002-1011, August 2000.

FRAIL ELDERLY. HOME HEALTH CARE. LOW-INCOME GROUPS. POVERTY.

The Chelsea Village Program (CVP) is a long-term home health care program for a largely isolated and impoverished frail homebound aged population based at Saint Vincent's Hospital in New York City. Since January 1973, our CVP teams of physicians, nurses, and social workers have cared for the homebound aged over the long term. Twenty-seven years later, we have made 42,866 home visits to 2,264 persons in lower Manhattan, an area of New York City housing a high concentration of older people. Our purpose is to help our patients remain in their own homes and community at the maximum possible level of personal control and to maintain the best attainable health. Additionally, the program is a valuable component of the hospital's Primary

Care Adult Medicine residency program. It also serves as a laboratory for the study of health problems faced by the homebound aged and the solutions to these problems. The program, a medical-social model, has required modest philanthropic investments, dedicated service by physicians, nurses, and social workers, and the support of a hospital with a strong charitable mission. The CVP experience has encouraged the creation of other long-term home health care programs across the country, including the Medicaid-supported Nursing Home Without Walls program that spans New York. Thus, the CVP can be viewed as a model rather than an idiosyncratic nonreplicable phenomenon. As such, the program has established that multidisciplinary health care teams, in collaboration with a teaching hospital, can provide long-term home health care to homebound older people in the local community. Moreover, such a practice is mutually beneficial.

1115

Milone-Nuzzo, Paula. Advanced practice nurses in home care: is there a role? *Home Health Care Management and Practice* 13(5):349-355, August 2001.

ADVANCED PRACTICE NURSES. HEALTH HOME CARE. RESEARCH TRENDS.

The current challenges affecting home health care make the environment ripe for the development of new models of advanced practice nursing in home care. This article explores the barriers and benefits of advance practice nursing in home care and describes the changes needed to fully integrate the advanced practice nurse into the home care delivery system.

1116

Murray, Rebecca R. The nurse practitioner and home care of the diabetic patient: the role of clinician and educator. *Home Health Care Management and Practice* 13(5): 367-374, August 2001.

DIABETES MELLITUS. HOME HEALTH CARE. NURSES.

Coordination of care for the elderly, homebound patient with diabetes and numerous comorbid medical problems has become increasingly challenging for the home care nurse. Complex treatment plans, exploding technology, and myriad new pharmacological agents can be overwhelming for even the most experienced nurse. Nurse practitioners, who are advanced practice nurses, have the ability to do in-depth physical examinations, order diagnostic tests, make a diagnosis based on their assessment, and order medications and other medical interventions as needed. Overall, the nurse practitioner can provide timely, coordinated, and cost-effective care to the patient and can also be an educational resource for the home care nurse and other care providers in planning case management.

1117

Pierson, Cheryl. APN elder home care: a successful model. *Home Health Care Management and Practice* 13(5):375-379, August 2001.

ADVANCE PRACTICE NURSING. HOME HEALTH CARE.

Advanced practice nursing (APN) can play an important role in home care and particularly in elder care with the complexity of issues that exists. The author chronicles the care of an elderly female patient living in suboptimal conditions in an urban environment. By employing accurate assessments, appropriate intervention, and collaborative approaches, a model of care evolved that allows for an elder to remain

safely in his or her home, avoid hospitalization, and delay placement in a long-term care facility. Quality of life and quality of care are both positively affected with advance practice nursing in elder care.

1118

Stuart, Mary, and Michael Weinrich. Home and community-based long-term care: lessons from Denmark. *The Gerontologist* 41(4):474-480, June 2001.

CROSS-NATIONAL COMPARISON. DENMARK. HOME HEALTH CARE. LONG-TERM CARE.

Denmark is cited as a model in the development of home- and community-based systems for the frail elderly. The authors examined the results of this experiment and considered implications for U.S. policy. The authors used international comparative policy analysis, including site visits and semi-structured interviews with Danish leadership in conjunction with a review of published literature, reports, and administrative data from Denmark and the United States. Findings revealed that, after 12 years of implementing integrated systems for home- and community-based services in 275 municipalities, growth in Danish long-term care expenditures has leveled off. Expenditures appear to be decreasing for the population and have dropped as a percentage of the gross domestic product. Access to and quality of long-term care services appear to remain generally satisfactory. During this period, comparable expenditures in the United States and deficits in access and quality persist. Policy implications are considered.

Hospitals

1119

Covinsky, Kenneth E., et al. Functional status before hospitalization in acutely ill older adults: validity and clinical importance of retrospective reports. *Journal of the American Geriatrics Society* 48(2):164-139, Feb. 2000.

ACUTE DISEASES. FUNCTIONAL STATE. HOSPITALIZATION. RETROSPECTIVE REPORTS.

Retrospective reports of patients' functional status before hospital admission are often used in longitudinal studies and by clinicians caring for hospitalized patients. However, the validity of these reports has not been established. Our aim was to examine the validity of retrospective reports by testing hypotheses about the relationships these measures would have with other clinical measures if they were valid. The design was a prospective cohort study. A total of 2,877 older patients (mean age 81, 36% women) hospitalized on the general medical service at two hospitals. For 1,953 of the subjects, the patient was the primary respondent, whereas for 924 subjects, a surrogate was the primary respondent. Shortly after hospital admission, patients or surrogates reported whether the patient was independent in each of five activities of daily living (ADLs) on admission and at baseline 2 weeks before admission. Outcome measures included reported independence in each ADL 3 months after the hospitalization and survival to 1 year. Patients' retrospective reports of their ADL function 2 weeks before admission had a clinically plausible relationship with ADL function at the time of admission, in that patients independent in an ADL on admission rarely reported they were dependent in that ADL 2 weeks before admission (range 2-6%). Surrogates were somewhat more likely than patients to report that patients independent on

admission were dependent 2 weeks before admission (range 5-14%). Retrospective reports of prehospitalization ADL function demonstrated strong evidence of predictive validity for both patients' and surrogates' reports. For example, among patients dependent in bathing on admission, patients who were reported as independent 2 weeks before admission were much more likely than those reported as dependent 2 weeks before admission to be independent 3 months after hospitalization (68% versus 20%, $p < .001$ for patient respondents; 30% versus 5%, $p < .001$ for surrogate respondents). Similarly, among patients dependent in bathing on hospital admission, survival 1 year after hospitalization was much higher in patients who were independent in bathing 2 weeks before admission than patients who were dependent 2 weeks before admission (76% versus 59%, $p < .001$ for patient respondents; 60% versus 45%, $p < .001$ for surrogate respondents). Results were similar for each of the other four ADLs. In a logistic regression model controlling for the number of ADLs reported as dependent on admission, the number of ADLs reported as dependent 2 weeks before admission was significantly associated with 1-year mortality among both patient (odds ratio [OR] = 1.39 per dependent ADL, 95% confidence interval [CI] = 1.26-1.54) and surrogate (OR = 1.14, 95% CI = 1.06-1.24) respondents. Hospitalized patients' assessments of their ability to perform ADLs before their hospitalization have evidence of face and predictive validity. These measures are strong predictors of important health outcomes such as functioning and survival. In particular, among patients dependent in ADL function on hospital admission, these results highlight the prognostic importance of inquiring about the patient's functional status before the onset of the acute illness.

1120

Desbiens, Norman A., et al. Stress in caregivers of hospitalized oldest-old patients. *Journal of Gerontology: Medical Sciences* 56A(4):M231-M235, April 2001.

CAREGIVER STRESS. CAREGIVERS. FRAIL ELDERLY. HOSPITALIZATION.

Stress in caregivers of elderly patients is a well-recognized health care problem. However, little has been published about the stress in caregivers of the oldest-old patients, the most rapidly growing segment of our population. Methods. A prospective cohort study was conducted in four teaching hospitals. Questionnaires were administered to patients 80 years of age and older and their surrogates (the person who would make decisions if the patient were unable to—usually a family member) who identified themselves as the primary caregivers for the patients. Data were abstracted from medical records. Caregivers tended to be female and 50 years of age or older. About one in five described her own health as fair or poor; nearly half of them lived with the patient. About one quarter spent at least 8 h/d caring for the patient, and they had few persons available to help them with care. Most of the caregivers reported mild to moderate levels of stress. After adjustment, higher stress scores were associated with female caregivers, poorer caregiver health, more hours per day spent caring for the patient, and the presence of patient depression and hearing impairment. Conclusion. Stress is common in caregivers of the hospitalized oldest-old patients. Women who are in poor health and spend 8 or more hours every day caring for relatives aged 80 and over are at high risk for caregiver stress. Treatment of patient depression and hearing impairment may ameliorate caregiver stress.

1121

Huang, Benjamin Y., et al. Impact of depressive symptoms on hospitalization risk in community-dwelling older persons. *Journal of the American Geriatrics Society* 48(10):1279-1284, Oct. 2000.

HOSPITALIZATION. PSYCHODIAGNOSIS. PSYCHOLOGICAL DEPRESSION. SYMPTOMATOLOGY.

This study sought to determine whether depressive symptoms in older adults are associated with an increased risk for hospitalization. The design was a 6 month cohort study. Five counties in northern Piedmont of North Carolina from the Duke University site of the Established Populations for Epidemiological Studies of the Elderly project were included in this study. The sample included 3,486 community-dwelling adults, aged 65 and older. Crude risk ratios for the effect of depressive symptoms on 6 month risk for hospitalization were calculated, followed by a multivariable analysis controlling for demographics and health status. Three hundred participants were hospitalized during the 6-month follow-up period. The crude risk ratio for the effect of depressive symptoms on hospitalization was 1.95 (95% CI = 1.47-2.58). Subgroup analysis showed significant positive risk ratios for men aged 65 to 74 and women aged 65 to 74. After a multivariable analysis, however, these associations remained significant only among men ≥ 75 (RR = 3.43; 95% CI = 1.33-8.86). Depressive symptoms were independently associated with a more than threefold increased risk for hospitalization among men aged 75 or older. This result reflects differences in the effects of depressive symptoms across age and gender groups and emphasizes that symptoms of depression influence overall health and medical utilization among, at the very least, the oldest subset of men.

1122

Johnson, Jerry C., et al. Nonspecific presentation of pneumonia in hospitalized older people: age effect or dementia? *Journal of the American Geriatrics Society* 48(10):1316-1320, Oct. 2000.

AGE DIFFERENCES. AGING. DEMENTIA. NURSING HOMES. PNEUMONIA.

Older adults, when presenting with pneumonia, are often thought to present with nonspecific symptoms instead of more suggestive symptom(s). However, studies designed to determine whether age is associated with nonspecific presentations have yielded contradictory results. Many studies have not distinguished between the effects of preexisting cognitive impairment that result from dementia and the effects of age. The aim of this study is to determine whether there are significant differences in the presentation of pneumonia in demented versus nondemented patients across two age groups. We hypothesized that the nonspecific presentation of pneumonia in older people is due to dementia rather than to chronological age. The design compared retrospectively nonspecific (weakness, decreased appetite, urinary incontinence, falls, and delirium) and specific (cough, sputum production, dyspnea, and chest pain) symptoms of pneumonia in 148 hospitalized adult subjects from two urban, general medical teaching hospitals. When the subjects with dementia were included in the analysis, two (falls and delirium) of the five nonspecific symptoms were associated with older age and one other symptom (weakness) showed a trend toward statistical significance. However, when we excluded the demented subjects, nonspecific presenting

symptoms were similar in old and young adults with the exception of an increased frequency of delirium on presentation. Similarly, when demented subjects were excluded, we found a stronger association of younger age with the classic specific symptoms than were seen when the demented subjects were included. We conclude that age differences in the presentation of pneumonia are largely due to the presence of dementia.

1123

Lichtenberg, Peter A., Susan E. MacNeill, and Benjamin T. Mast. Environmental press and adaptation to disability in hospitalized live-alone older adults. *The Gerontologist* 40(5):549-556, Oct. 2000.

ACTIVITIES OF DAILY LIVING. COGNITIVE DISABILITIES. ENVIRONMENTAL RESEARCH. HOSPITALIZATION. INSTRUMENTAL ACTIVITIES OF DAILY LIVING. LONE RESIDENTS. PSYCHOLOGICAL ADJUSTMENT.

This study examined the ability of personal competency variables at the time of hospital discharge to predict primary instrumental activities of daily living (IADLs) and secondary outcomes (living arrangements) in a sample of 194 urban, live-alone, older adults who had a new onset disability. Consecutively admitted medical rehabilitation patients, 72% women and 85% African American, participated in the study. Using path analysis, three of the four competency variables collected at the time of hospitalization (cognition, medical burden, activities of daily living) predicted IADLs at 3 and 6 months after hospitalization (e.g., cooking, telephone use, money management). IADLs, in turn, predicted living arrangements at 3 and at 6 months after hospitalization. The findings provided strong support for the importance of assessing a broad range of competency variables when investigating adaptation to disability. The increased understanding of adaptation in live-alone older adults with a new-onset disability is particularly timely given the increase in live-alone older adults and the dire consequences associated with change in living arrangement (i.e., mortality and morbidity) in this group.

1124

Muramatsu, Naoko, Shoou-Yih Daniel Lee, and Jeffrey A. Alexander. Hospital provision of institutional long-term care: pattern and correlates. *The Gerontologist* 40(5):557-567, Oct. 2000.

HOSPITALS. LONG-TERM CARE FACILITIES. RESEARCH TRENDS.

Purpose: This study examined the pattern and correlates of institutional long-term care provision among U.S. community hospitals, differentiating two categories of services: (1) skilled nursing and rehabilitation (SN-R) and (2) other long-term care (O-LTC). Design and methods: Multinomial logistic regression analysis was used to examine the associations of hospital and community characteristics with the pattern of long-term care provision (SN-R only, O-LTC only, both SN-R and O-LTC, and none) among 3,842 hospitals. The pattern of long-term care provision was significantly associated with hospitals' mission (for-profit and teaching status) and their internal and external resources. Results suggest the importance of considering hospital and community characteristics in predicting the impact of policy changes and in envisioning the role of hospitals in long-term care.

1125

Saliba, Debra, et al. Appropriateness of the decision to transfer nursing facility residents to the hospital. *Journal of the American Geriatrics Society* 48(2):154-163, Feb. 2000.

DECISION MAKING. FACILITY TRANSFERS. HOSPITALS. NURSING HOME RESIDENTS.

This study sought to develop and test a standardized instrument, the purpose of which is to assess (1) whether skilled nursing facilities (SNFs) transfer residents to emergency departments (ED) inappropriately, (2) whether residents are admitted to hospitals inappropriately, (3) and factors associated with inappropriate transfers. The design was a structured implicit review (SIR) of medical records. Using nested random sampling in eight community SNFs, we identified SNF and hospital records of 100 unscheduled transfers to 1 of 10 hospitals. Measurements involved seven trained physician reviewers assessed appropriateness using a SIR form designed for this study (2 independent reviews per record, 200 total reviews). We measured interrater reliability with kappa statistics and used bivariate analysis to identify factors associated with assessment that transfer was inappropriate. In 36% of ED transfers and 40% of hospital admissions, both reviewers agreed that transfer/admit was inappropriate, meaning the resident could have been cared for safely at a lower level of care. Agreement was high for both ED (percent agreement 84%, kappa .678) and hospital (percent agreement 89%, kappa .779). When advance directives were considered, both reviewers rated 44% of ED transfers and 45% of admissions inappropriate. Factors associated with inappropriateness included the perceptions that: (1) poor quality of care contributed to transfer need, (2) needed services would typically be available in outpatient settings, and (3) the chief complaint did not warrant hospitalization. Inappropriate transfers are a potentially large problem. Some inappropriate transfers may be associated with poor quality of care in SNFs. This study demonstrates that structured implicit review meets criteria for reliable assessment of inappropriate transfer rates. Structured implicit review may be a valuable tool for identifying inappropriate transfers from SNFs to EDs and hospitals.

1126

Schraeder, Cheryl, Paul Shelton, and Mark Sager. The effects of a collaborative model of primary care on the mortality and hospital use of community-dwelling older adults. *Journal of Gerontology: Medical Sciences* 56A(2):M106-M112, Feb. 2001.

AGING. HOSPITALIZATION. MORTALITY RATES. PRIMARY CARE.

This study evaluates the ability of a model of collaborative primary care practice to reduce mortality and hospital use in community-dwelling elderly persons. Four rural and four urban clinic sites in east central Illinois were randomized to form treatment and comparison clinics from which patients were enrolled and followed prospectively for 2 years. Patients from the practices of participating physicians were eligible if they were aged 65 and older, were living in the community, and had at least one risk factor as determined prior to the study. Medicare hospital data were obtained from the Health Care Financing Administration. Demographic and health status measures were obtained by telephone interview every 12 months throughout the study. The treatment group experienced a 49% reduction in all-cause mortality during the second year of the study (odds ratio, 0.51, 95% confidence interval, 0.29-0.91, $p = .02$). There were no significant differences between treatment and comparison patients in percentage of persons hospitalized, hospital length of stay, or Medicare payments. Although measures of health status indicated that the treatment group was significantly

sicker at baseline at the end of 1 year, these differences disappeared by the end of 2 years. The collaborative primary care model evaluated in this study significantly reduced mortality in the second year, without increasing hospital use. These findings suggest that a collaborative primary care team that enhances primary care practice can result in better patient outcomes.

Institutionalization and Long-Term Care

1127

Aarsland, Dag, et al. Predictors of nursing home placement in Parkinson's disease: a population-based, prospective study. *Journal of the American Geriatrics Society* 48(8):938-942, August 2000.

PARKINSON'S DISEASE. POPULATION AGING. RESEARCH TRENDS.

This study sought to examine the rate and predictors of nursing home placement in patients with Parkinson's disease. The design was a four-year prospective study. The setting was a population in western Norway. Participants were 178 community-dwelling subjects with Parkinson's disease. Main outcome measure was the time from baseline to nursing home admission. Baseline evaluation of motor symptoms (Unified Parkinson's Disease Rating Scale, UPDRS), cognition (clinical dementia interview, Gottfries, Brdne & Steen Dementia Scale, and Mini-Mental State Examination), depression (clinical interview and the Montgomery & Asberg Depression Rating Scale), and psychotic symptoms (UPDRS Thought Disorder item) were performed. Forty-seven patients (26.4%) were admitted to a nursing home during the 4-year study period. Institutionalized patients were older, had more advanced Parkinson's disease with more severe motor symptoms and impairment of activities of daily living, cognitively more impaired, more often living alone, and had more hallucinations than those who continued to live at home. Duration of disease, levodopa dose, and gender distribution did not differ between the two groups. A Cox proportional hazards linear regression analysis showed that old age, functional impairment, dementia, and hallucinations were independent predictors of nursing home admission. Both motor and neuropsychiatric symptoms contributed to institutionalization, but the presence of hallucinations was the strongest predictor. This fording indicates it is possible that effective treatment of hallucinations may reduce the need for institutionalization in patients with Parkinson's disease.

1128

Arling, Greg, Arthur R. Williams, and Donna Kopp. Therapy use and discharge outcomes for elderly nursing home residents. *The Gerontologist* 40(5):587-595, Oct. 2001.

DEMOGRAPHIC CHARACTERISTICS. DISCHARGE OUTCOMES. NURSING HOME RESIDENTS. PSYCHOTHERAPY.

This study examines therapy use and discharge outcomes (community discharge, mortality, or remaining in the facility) over a 90-day period for 1,419 elderly, post-acute care nursing home admissions in South Dakota. Subjects met criteria as rehabilitation candidates (i.e., absence of serious behavioral or medical conditions that would limit rehabilitation potential). Receipt of therapies was related significantly to age (younger), Medicare coverage, hip fracture or stroke diagnosis, absence of cancer diagnosis, and resident or staff expectations for functional improvement. Therapy use was related positively to community discharge and negatively to mortality when controlling for covariates such as age, marital status, payment source,

functional status, cognitive status, and major diagnoses. Also, community discharge was related positively to the facility's volume of therapy provision and percentage of Medicare-covered stays.

1129

Berlowitz, Dan R., et al. Are we improving the quality of nursing home care? The case of pressure ulcers. *Journal of the American Geriatrics Society* 48(1):59-62, Jan. 2000.

NURSING HOMES. PRESSURE ULCERS. QUALITY OF CARE.

There are widespread concerns regarding the quality of nursing home care and whether care is improving. We evaluated a large provider of nursing home care to determine whether risk-adjusted rates of pressure ulcer development have changed. We used the Minimum Data Set to study National HealthCare Corporation nursing homes from 1991 through 1995. Rates of pressure ulcer development were calculated for successive 6-month periods by determining the proportion of residents initially ulcer-free having a stage 2 or larger pressure ulcer on subsequent assessments. Rates were risk-adjusted for patient characteristics. The proportion of new ulcers that were deep (stages 3 or 4) were also calculated. We examined risk-adjusted rates of pressure ulcer development based on 144,379 observations of 30,510 residents at 107 nursing homes. The number of observations per 6-month period ranged from 11,041 to 15,805. Between 1991 and 1995, there was a significant ($p < .05$) rate decline of more than 25%. Additionally, the proportion of new ulcers that were stages 3 or 4 declined from 30 to 22% ($p < .01$). Nursing homes showed significant improvement in the quality of pressure ulcer preventive care from 1991-1995.

1130

Bowers, Barbara J., Barbara Fibich, and Nora Jacobson. Care-as-service, care-as-relating, care-as-comfort: understanding nursing home residents' definitions of quality. *The Gerontologist* 41(4):539-545, June 2001.

DEFINITIONS OF CARE. NURSING HOME QUALITY. NURSING HOME RESIDENTS. NURSING HOMES.

This study explored the ways in which nursing home residents define quality of care. Data were collected through in-depth interviews and were analyzed using grounded dimensional analysis. Residents defined quality in the following three ways: (1) Care-as service residents focused on instrumental aspects of care; they assessed quality using the parameters of efficiency, competence, and value. (2) Care-as-relating residents emphasized the affective aspects of care, defining quality as care that demonstrated friendship and allowed them to show reciprocity with their caregivers. (3) Care-as comfort residents defined quality of care that allowed them to maintain their physical comfort, a state that require minute and often repetitive adjustments in response to their bodily cues. Implications for practice are considered.

1131

Burgio, Louis, et al. Come talk with me: improving communication between nursing assistants and nursing home residents during care routines. *The Gerontologist* 41(4):449-460, June 2001.

COMMUNICATION SKILLS. NURSING HOME RESIDENTS. NURSING HOME STAFF.

The authors examined the effects of communication skills training and the use of memory books by certified nursing assistants (CNAs) on verbal interactions between

CNAs ($n = 64$) and nursing home residents ($n = 67$) during care routines. CNAs were taught to use communication skills and memory books during their interactions with residents with moderate cognitive impairments and intact communication abilities. A staff motivational system was used to encourage performance and maintenance of these skills. Formal measures of treatment implementation were included. Results were compared with those for participation on no-treatment control units. Trained CNAs talked more often, used positive statements more frequently, and tended to increase the number of specific instructions given to residents. Changes in staff behavior did not result in an increase in total time giving care to residents. Maintenance of CNA behavior change was found 2 months after research staff exited the facility Although an increase was found in positive verbal interactions between CNAs and residents on intervention units, other changes in resident communication were absent. Implications of these findings are discussed.

1132

Castle, Nicholas G. Innovation in nursing homes: which facilities are the early adopters? *The Gerontologist* 41(2):161-172, April 2001.

LOGISTIC REGRESSION ANALYSIS. NURSING HOMES. ORGANIZATIONAL CHANGE. TECHNOLOGICAL INNOVATION.

Purpose: This study examined organizational and market factors associated with nursing homes that are most likely to be early adopters of innovations. Early adopter institutions, defined as the first 20% of facilities to adopt an innovation, are important because they subsequently facilitate the diffusion of innovations to others in the industry. Design and Methods: Two groups of innovations were examined, special care units and subacute care services. I used discrete time logistic regression analysis and nationally representative data from 13,162 facilities at risk of being early adopters of innovations during twelve 6-month intervals from 1992 to 1997. Organizational factors that increase the likelihood of early innovation adoption are larger bed size, chain membership, and high levels of private-pay residents. Four market factors that increase the likelihood of early innovation adoption are: a retrospective Medicaid reimbursement methodology, a more competitive environment, higher average income in the county, and a higher number of hospital beds in the county. This analysis shows that organizational and market characteristics of nursing homes affect their propensity toward early adoption of innovations. Some of the results may be useful for nursing home administrators and policy makers attempting to promote innovation.

1133

Cuijpers, Pim. Mortality and depressive symptoms in inhabitants of residential homes. *International Journal of Geriatric Psychiatry* (UK) 16(2):131-138, Feb. 2001.

MORTALITY RATES. THE NETHERLANDS. NURSING HOME RESIDENTS. PSYCHOLOGICAL DEPRESSION.

It has been hypothesized that there is a relationship between depression and mortality rates. Some earlier studies have confirmed this relationship, but others have not. In the present study the association was examined between depressive symptoms and mortality in the inhabitants of ten residential homes for the elderly in the Netherlands. Four hundred and twenty-four subjects who were not cognitively impaired, and who participated in an intervention study, were included. One year after the initial interview, they were contacted again and it was found that 69 (16.3%) had died. In the

initial interview, depressive symptoms and psychological distress were assessed with the Geriatric Depression Scale and the mental health subscale of the MOS-SF-20. The following correlates of depression were assessed: functional impairment, earlier depression, pain, social support, loneliness, and the presence of seven common chronic illnesses. In bivariate analyses no significant relationship was found between depression and mortality while controlling for living in an experimental or control home. In logistic regression analyses with mortality as the dependent variable and depressive symptoms, demographic variables, and correlates of depression as predictors, no significant relationship between depression and mortality was found either. It is concluded that no evidence was found in this population for a significant relationship between depression and mortality. Mortality was related to measures of social support, to activities of daily living, and to the presence of chronic non-specific lung disease.

1134

Faulks, J. Todd, et al. A serious outbreak of parainfluenza type 3 on a nursing unit. *Journal of the American Geriatrics Society* 48(10):1216-1218, Oct. 2000.

EPIDEMICS. NURSING HOMES. PARAINFLUENZA. SKILLED NURSING FACILITIES.

The aim of this paper is to report on a serious outbreak of respiratory illness in a nursing home, with isolation of parainfluenza type 3 in four cases. The design entailed analyzing viral respiratory cultures from a sample of symptomatic residents and retrospective chart review. The setting was a 50-bed nursing unit/floor in a skilled nursing facility. Participants were all residents of the nursing unit. Measurements involved respiratory viral cultures and clinical chart review. Twenty-five of 49 residents developed new respiratory symptoms between September 2 and September 25, 1999. Ten cases (40%) had a tympanic temperature of 100°F or greater. Eighteen (72%) had a chest X ray with 11 (44%) new infiltrates. Sixteen (64%) were treated with antibiotics. Three cases were hospitalized, and four died (16%) within 1 to 9 days after onset of symptoms. Four of 10 viral cultures yielded parainfluenza type 3. Parainfluenza type 3 may cause outbreaks complicated by pneumonia and fatal outcome. Clinicians should consider uniform secretion precautions to contain all viral URIs in nursing homes.

1135

Fries, Brant E., et al. Pain in U.S. nursing homes: validating a pain scale for the minimum data set. *The Gerontologist* 41(2):173-179, April 2001.

AUTOMATIC INTERACTION DETECTION. MICHIGAN. MINIMUM DATA SET. NURSING HOMES. PAIN MANAGEMENT. QUALITY CONTROL. VISUAL ANALOGUE SCALE.

Purpose: The aim of this study was to validate a pain scale for the Minimum Data Set (MDS) assessment instrument and examine prevalence of pain in major nursing home subpopulations, including type of admission and cognitive status. Design and Methods: This study considered validation of the MDS pain items and derivation of scale performed against the Visual Analogue Scale (VAS) using Automatic Interaction Detection. The derivation data describe 95 postacute care nursing home patients who are able to communicate. The scale is then used in retrospective analysis of

34,675 Michigan nursing home residents. A four-group scale was highly predictive of VAS pain scores (variance explanation 56%) and therefore quite valid in detecting pain. In the prevalence sample, only 47% of postacute patients compared to 63% of postadmission patients reported no pain, and these percentages rose with increasing cognitive impairment. Pain is prevalent in nursing home residents, especially in those with cognitive dysfunction, and often untreated.

1136

Grabowski, David C. Does an increase in the Medicaid reimbursement rate improve nursing home quality? *Journal of Gerontology: Social Sciences* 56B(2):S84-S93, March 2001.

MEDICAID. MEDICAID REIMBURSEMENT. NURSING HOMES. QUALITY CONTROL.

Numerous studies have documented poor nursing home quality over the last 3 decades. Previous research has questioned the effectiveness of Medicaid reimbursement policy in improving quality in the presence of certificate-of-need (CON) and construction moratoria regulation. This study evaluated how the Medicaid reimbursement rate may influence a home's decision to provide quality under CON and moratoria. Linking national data from the On-Line Survey Certification and Reporting System, the Area Resource File, and aggregate reimbursement information, the author examined the effect of Medicaid reimbursement on a range of quality measures in the context of CON and moratoria. An increase in Medicaid reimbursement improved quality as measured by professional staffing, but there was not a statistically significant effect when quality was measured by nonprofessional staffing, various procedural measures, or regulatory deficiencies. However, this study did not support previous research showing a negative effect of Medicaid reimbursement on nursing home quality in the context of CON laws. This study supports recent trends suggesting that nursing home CON laws may be lessening in importance for the nursing home market. Nevertheless, further work is necessary to determine the quality returns to increased Medicaid reimbursement.

1137

Menon, A. Srikumar, et al. Relationship between aggressive behaviors and depression among nursing home residents with dementia. *International Journal of Geriatric Psychiatry* (UK) 16(2):139-146, Feb. 2001.

AGGRESSIVE BEHAVIOR. NURSING HOME RESIDENTS. PHYSICAL AGGRESSION. PSYCHOLOGICAL DEPRESSION. VERBAL AGGRESSION.

Verbal and physical aggression are common behavior problems among nursing home residents with dementia. Depression among nursing home residents is also a common but underdiagnosed disorder. Data were collected on 1,101 residents with dementia, newly admitted to a sample of 59 nursing homes across Maryland, and were analyzed to determine if there was a relationship between depression and physical and verbal aggression. Residents with dementia who manifested physical or verbal aggression had a higher prevalence of depression than those without such behaviors. Our findings suggest that nursing home residents with aggressive behaviors should be screened for depression and treated.

1138

Meyer, Madonna Harrington. Medicaid reimbursement rates and access to nursing homes. *Research on Aging* 23(5):532-551, Sept. 2001.

MEDICAID. MEDICAID REIMBURSEMENT. NURSING HOME ADMISSION. NURSING HOME RESIDENTS.

Medical reimbursement rates vary widely around the country and at times amount to only 70% to 80% of the prevailing private pay rates. These differences may create economic incentives for nursing homes to discriminate against Medicaid applicants. The 1997 National Nursing Home Survey of Current Residents provides the opportunity to develop a ratio of Medicaid to private pay rates for a nationally representative sample of 6081 residents. Logistic regression modeling shows that even when controlling for sex, race, marital status, and functional level, residents are less likely to be on Medicaid at admission when the ratio is small than when it is close to 1.0. Older Blacks and Latinos and older unmarried persons are more likely to be on Medicaid; therefore, they are more likely to face delay or denial of admission. A possible policy resolution comes from Minnesota, where an equalization law requires nursing home and welfare state officials to work together to set rates, making discriminatory practices against vulnerable groups illegal.

1139

Mezey, Mathy, et al. Decision-making capacity to execute a health care proxy: development and testing of guidelines. *Journal of the American Geriatrics Society* 48(2):179-187, Feb. 2000.

DECISION MAKING. HEALTH POLICY. HEALTH SERVICES.

This study sought to evaluate the reliability and validity of guidelines to determine the capacity of nursing home residents to execute a health care proxy (HCP). The design was a cross-sectional study. Setting: A 750-bed not-for-profit nursing home located in New York City. Participants were a randomly selected sample of 200 nursing home residents (average age, 87; 99% White; 83% female; average length of stay, 3.05 years; mean Mini-Mental State Exam (MMSE) score, 15.9). The measurements were demographic characteristics (Minimum Data Set [MDS]), function and cognitive status (Institutional Comprehensive Assessment and Referral Evaluation [INCARE]), Reisberg Dementia Staging, MMSE, Minimum Data Set–Cognitive Performance Scale [MDS–COGS]), and an investigator-developed measure of a nursing home resident's capacity to execute a health care proxy (Health Care Proxy [HCP] Guidelines). The internal consistency of the decision-making scales in the HCP guidelines, paraphrased recall and recognition, reached acceptable levels, alphas of .85 and .73, respectively. Interrater reliability estimates were .92 and .94, respectively, for the recall and recognition scales; test-retest reliability estimates were .83 and .90. The discriminant validity of these scales is promising. For example, the MMSE correlation was .51 with the Recall scale and .57 with the Recognition scale. Of residents with severe cognitive impairment (MMSE < 10), 71 completed 50% or more of the scaled items in the HCP guidelines and 95% consistently named a proxy. Seventy-three percent of testable residents, approximately three-quarters of whom were cognitively impaired, evidenced sufficient capacity to execute an HCP. Of residents with severe cognitive impairment, the HCP guidelines are potentially useful in identifying those with the capacity to execute a HCP. The guidelines are more predictive than the MMSE in identifying residents able to execute a HCP.

1140

Mullan, Joseph T., and Charlene Harrington. Nursing home deficiencies in the United States: a confirmatory factor analysis. *Research on Aging* 23(5):503-531, Sept. 2001.

CONFIRMATORY FACTOR ANALYSIS. NURSING HOMES. QUALITY OF CARE.

This article provides a confirmatory factor analysis (CFA) of deficiencies in nursing homes obtained from the On-line Survey Certification and Reporting System (OSCAR), a financial database on nursing home quality maintained by the U.S. Health Care Financing Administration (HCFA). One of the major goals was to identify a core set of items that would reliably reflect a meaningful set of dimension of problems in the quality of care. The analysis suggests that it is reasonable to posit a model comprising eight underlying factors to which state surveyors are responding as they assign deficiencies to nursing homes. Forty items are robust indicators of the eight dimensions of problems in quality of care. The data contain considerable random and probably systematic error worth understanding. Establishing that the data contain systematic variability is crucial because OSCAR data are a potentially valuable source of quality of care information for researchers, policy makers, and consumers.

1141

Naughton, Bruce J., Joseph M. Mylotte, and Ammar Tayara. Outcome of nursing home-acquired pneumonia: derivation and application of a practical model to predict 30 day mortality. *Journal of the American Geriatrics Society* 48(10):1292-1299, Oct. 2000.

MORTALITY RATES. NURSING HOME-INDUCED DISEASE. NURSING HOMES. PNEUMONIA.

This study sought to derive a prediction model of 30 day mortality for nursing home-acquired pneumonia (NHAP) based on factors that can be readily identified by nursing home staff at the time of diagnosis and to apply the model to management issues related to NHAP including clarifying the importance of prepneumonia functional status as a predictor of outcome of NHAP. The design was a retrospective chart review of 378 episodes of NHAP treated in the nursing home or hospital during two periods: November 1997 to April 1998 and November 1998 to April 1999. The setting comprised 11 nursing homes in the greater Buffalo, NY region. Participants were nursing home residents with radiographically proven pneumonia who had at least one of the following signs/symptoms: cough, fever, purulent sputum, respiratory rate ≥ 25 breaths/minute, localized auscultatory findings, or pleuritic pain. Measurements consisted of the status (alive or dead) of each resident at 30 days (30 day mortality) after diagnosis of NHAP was the dependent variable. Factors predicting 30 day mortality were identified by logistic regression analysis. A scoring system was developed based on the results of the logistic model. Each episode of NHAP in the derivation cohort was scored using the model and the cohort was stratified by the model score into six categories or risk for mortality (0-5). The predictability of the model in the derivation cohort was measured using receiver operator characteristics curve analysis. Of 378 episodes of NHAP, 74% were treated initially in the nursing home and 26% were hospitalized initially for treatment. The overall 30 day mortality was 21.4%; however, the mortality rate was significantly higher for those treated initially in the hospital (29.6% versus 16.6%; $p = .012$). Logistic regression analysis identified four predictors of 30 day mortality: (1) respiratory rate > 30 breaths/ minute (2 points), (2) pulse > 125 beats/minute (1 point), (3) altered mental status (1 point), and (4) a history of

dementia (1 point). Applying the scoring system to each episode in the derivation cohort demonstrated increasing mortality with increasing score. The c statistic for the model in the derivation cohort was .74. Based on the severity of NHAP, model episodes treated initially in the hospital were more acutely ill than those who were treated initially in the nursing home, and episodes treated with a parenteral antibiotic in the nursing home were more acutely ill than those who were treated with an oral agent. Functional status was not a predictor of 30 day mortality although there was a trend of higher mortality in the most dependent group ($p = .065$). The severity of NHAP model was able to define low and high risk mortality groups within a functional status category. A severity of NHAP model was derived from a large cohort of episodes in multiple facilities. The model had reasonable discriminatory power in the derivation cohort. The model may aid clinicians in making treatment decisions in the nursing home setting and in making hospitalization decisions. Although prepneumonia functional status provides a reasonable estimate of NHAP severity and prognosis, the severity of NHAP model permitted further refinement of these estimates. The severity of NHAP model requires validation before it can be recommended for general use.

1142

Pot, Anne Margriet, Dorly J.H. Deeg, and Cees P.M. Knipscheer. Institutionalization of demented elderly: the role of caregiver characteristics. *International Journal of Geriatric Psychiatry* (UK) 16(3):273-280, March 2001.

CAREGIVER CHARACTERISTICS. CAREGIVER COMMITMENT. CAREGIVER STRESS. DEMENTIA. NURSING HOME ADMISSION. PERSONALITY TRAITS.

Three sets of caregiver characteristics were examined with respect to their explanatory value for institutionalization of demented elderly people: commitment to the caregiving relationship, psychological distress, and personality traits. Logistic regression was used to test whether these caregiver characteristics were risk factors for institutionalization of demented elderly people in the first year after baseline measurement ($N = 138$). Control variables were caregivers' sex, age and education. The results showed the importance of commitment to the caregiving relationship, indicated by type of relationship between caregiver and care recipient. Demented people cared for by non-spouses were more likely to be institutionalized as compared to those cared for by spouses. For non-spouse caregivers, being more extravert increased the likelihood of institutional placement, whereas for spouse caregivers, perceiving more pressure from informal increased this likelihood. These findings are in agreement with the assumption that non-spouses are less strongly committed to the caregiving relationship as compared to spouses. Results were independent from elders' impairment in cognitive functioning and instrumental activities of daily living. Caregivers' psychopathology was not a risk factor at all, which is a matter of concern, regarding the consequences for caregivers' own health and health-care utilization, but also for their treatment of the demented elder.

1143

Rantz, Marilyn J., et al. Randomized clinical trial of a quality improvement intervention in nursing homes. *The Gerontologist* 41(4):525-538, June 2001.

NURSING HOME QUALITY. NURSING HOMES. QUALITY OF CARE. RANDOMIZED CONTROL TRIALS.

This study sought to determine whether simply providing nursing facilities with comparative quality and education about quality improvement would improve

clinical practices and subsequently improve resident outcomes, or whether a stronger intervention, expert clinical consultation with nursing facility staff, is needed. Nursing facilities ($N = 113$) were randomly assigned to one of three groups: workshop and feedback reports only, workshop and feedback reports with clinical consultation, and control. Minimum Data Set (MDS) Quality Indicator (QI) feedback reports were prepared and sent quarterly to each facility intervention groups for a year. Clinical consultation by a gerontological clinical nurse specialist (GCNS) as offered to those in the second group. With the exception of MDS QI (little or no activity), no significant differences in resident assessment measures were detected between the groups of facilities. However, outcomes of residents in nursing homes that actually took advantage of the clinical consultation of the GCNS demonstrated trends in improvements in QIs measuring falls, behavioral symptoms, little or no activity, and pressure ulcers (overall and for low-risk residents). Policy and practice implications are discussed.

1144

Schreiner, Andrea S. Aggressive behaviors among demented nursing home residents in Japan. *International Journal of Geriatric Psychiatry* (UK) 16(2):209-215, Feb. 2001.

AGGRESSIVE BEHAVIOR. DEMENTIA. JAPAN. NURSING HOME RESIDENTS.

This study investigates the frequency of aggressive behaviors in a sample of elderly nursing home residents with dementia in Japan. Behavioral data were collected on 391 residents using the Cohen–Mansfield Agitation Inventory (C–MAI). Data were also gathered on residents' age, sex, and ability to perform self-care. Another scale was used to code the degree of resistance that each resident manifested during bathing, toileting, dressing and eating. In addition, qualitative data were collected from caregivers regarding their main caregiving problems with dementia residents. Findings show that 45.4% of the sample manifested aggressive behavior during the 2-week study period. Men were significantly more likely to manifest physically aggressive behavior, but there was no gender difference for verbal aggression. Age had no relationship to aggressive behavior. Residents who were most dependent in self-care had significantly higher frequencies of aggressive behaviors. Caregivers reported that most aggressive behavior took place during personal care. The majority of caregivers identified verbal agitation rather than physical aggression as their main caregiving problem. This study represents the first time that the C–MAI has been translated and used in Japan and the first time empirical data has been collected on the behavior of dementia patients in Japanese nursing homes.

1145

Silverblatt, Fredric J., et al. Preventing the spread of vancomycin-resistant enterococci in a long-term care facility. *Journal of the American Geriatrics Society* 48(10):1211-1215, Oct. 2000.

ENTEROCOCCI. LONG-TERM CARE FACILITIES. TREATMENT-RESISTANT DISEASE. VANCOMYCIN.

This study sought to test the hypothesis that infection control practices can prevent the spread of vancomycin-resistant enterococci (VRE) to residents of along-term care facility (LCF) from an affiliated acute care facility with a high endemic rate of colonization.The design was a point prevalence study of the rate of rectal colonization. The settings comprised a state-supported veterans nursing home and an acute care veterans hospital. Participants were residents in a state veterans home. The measurement

entailed identification of patients with rectal colonization by VRE before transfer to the state veterans home, contact isolation for colonized veterans, use of oral bacitracin to eliminate colonization. Measurements were rectal swab and culture for VRE, review of clinical records and recording of presumptive risk factors for VRE colonization. The risk factors were age, gender, length of stay at nursing home, treatment with vancomycin or oral antibiotics, prior hospitalization at the acute care facility during the prior year, use of indwelling urethral catheters, presence of diarrhea, and fecal or urinary incontinence. Sixty-nine of 200 residents were cultured in the first study (1996) and 130 of 230 residents were cultured in the second study (1998). Residents who consented to culture differed from those who did not only with regards to gender (2 versus 7, $p = .012$). In neither study were any residents found to be colonized with VRE who had not already been identified as positive on admission. Adherence to infection control practices by the patient care staff of the LTCF was associated with the absence of transmission of VRE colonization among its residents. The presence of rectal colonization with VRE in an acute care patient should not be a barrier to acceptance in a nursing home.

1146

Simmons, Sandra F., and David Reuben. Nutritional intake monitoring for nursing home residents: a comparison of staff documentation, direct observation, and photography methods. *Journal of the American Geriatrics Society* 48(2):209-213, Feb. 2000.

ASSESSMENT TECHNIQUES. NURSING HOME RESIDENTS. NUTRITIONAL INTAKE MONITORING. OBSERVATION. PHOTOGRAPHY. STAFF DOCUMENTATION.

The current approach to assessing nutritional intake requires nursing home (NH) staff to document total percentage of food and fluid consumed at each meal. Because NH staff tend to significantly overestimate total food intake, methods need to be developed to improve the accuracy of food intake measurement. The study sought to compare three methods of assessing the nutritional intake of NH residents. The design was a validation Study. Subjects were 56 NH residents in one facility. Total percentage of food and fluid intake of each resident for each of nine meals, or all three meals for three consecutive days, was assessed by: (1) Nursing home staff chart documentation, (2) Research staff documentation according to direct observations, and (3) Research staff documentation according to photographs of residents' trays before and after each meal. Research staff documentation of total intake and intake of all individual food and fluid items was similar for the direct observation and photography methods. In comparison with these two methods, NH staff documentation reflected a significant overestimate (22%) of residents' total intake levels. In addition, NH staff failed to identify the more than half (53%) of those residents whose intake levels were to equal to or below 75% for most meals. The photography method of nutritional assessment yielded the same information as direct observations by research staff, and both of these methods showed the intake levels of NH residents to be significantly lower than the intake levels documented by NH staff. The photography method also has several advantages over a documentation system that relies on an observer to be present to record food and fluid intake levels.

1147

Sørensen, L., et al. Determinants for the use of psychotropics among nursing home residents. *International Journal of Geriatric Psychiatry* (UK) 16(2):147-154, Feb. 2001.

ANATOMICAL THERAPEUTICAL ANTIDEPRESSANTS. BENZODIAZEPINES. CHEMICAL CLASSIFICATION INDEX. NEUROLEPTICS. NURSING HOME RESIDENTS. PERSONALITY TRAITS. PSYCHOTROPIC MEDICATION.

This study sought to characterize the prescription pattern of psychotropics in Danish nursing homes and to identify diagnostic, behavioral, cognitive and performance characteristics associated with prevalent psychotropic drug use.

Methods. Prescribed daily medication was recorded from nurses' files. Based on the Anatomical Therapeutical Chemical (ATC) classification index, psychotropics were categorized into neuroleptics, benzodiazepines and antidepressants. Two hundred and eighty-eight residents were diagnosed using the GMS–AGECAT. One hundred and eighteen staff members were interviewed about the residents's Activities of Daily Living (ADL), behavioral problems (Nursing Home Behavior Problem Scale), orientation, communication skills and if the resident had any psychiatric disorder. Multiple logistic regression was used to select the items that determined the use of psychotropics. Fifty-six percent of the residents received a psychotropic, 21% received neuroleptics, 38% received benzodiazepines and 24% received antidepressants. In the multivariate analysis, staff assessment of the resident's mental health was a determinant for the use of all types of specific psychotropics, whereas a GMS–AGECAT diagnosis only determined the use of neuroleptics. Behavioral problems were a determinant for the use of neuroleptics and the use of benzodiazepines irrespective of the psychiatric diagnosis of the resident. Use of antidepressants was associated with male gender and increasing age. Staff perceptions of psychiatric morbidity and norms may have a greater impact on the prescription of psychotropics than standardized clinical criteria.

1148

Warshaw, Gregg, Shahla Mehdizadeh, and Robert A. Applebaum. Infections in nursing homes: assessing quality of care. *Journal of Gerontology: Medical Sciences* 56A(2):M120-M123, Feb. 2001.

EMERGENCY MANAGEMENT. INFECTION. NURSING HOMES. QUALITY OF CARE.

Each year more than 25% of nursing home patients are taken to the hospital emergency room or hospitalized for the evaluation and treatment of infections. These transfers may have an adverse impact on the quality and the cost of patient care. Using both Medicare and Medicaid records from a sample of dually eligible elderly people in Ohio, we identified patients receiving antibiotic prescriptions in the nursing home and measured the frequency of nursing home physician visits and the hospital transfer rate. Among the study sample ($N = 1306$), two thirds experienced a total of 3685 episodes of infections. Just under 5% of the sample were hospitalized as a result of the infection. In one third of the episodes, physicians saw the resident in person within 5 days (before or after) of the initiation of the medication. The hospital transfer rate was slightly higher (7% vs. 3.5%) for those patients directly evaluated by a physician before receiving the prescription. A majority of prescriptions were written without direct physician examination, raising key questions about practice patterns and the effect on patient care and costs.

1149

Zadeh, Mina M., et al. Influenza outbreak detection and control measures in nursing homes in the United States. *Journal of the American Geriatrics Society* 48(10):1310-1315, Oct. 2000.

ANTIVIRAL MEDICATION. INFLUENZA. INFLUENZA VACCINE. NURSING HOMES.

This study sought to evaluate the use of influenza vaccine, rapid influenza testing, and influenza antiviral medication in nursing homes in the US to prevent and control outbreaks. Survey questionnaires were sent to 1017 randomly selected nursing homes in nine states. Information was collected on influenza prevention, detection and control practices, and on outbreaks during three influenza seasons (1995-1998).The survey response rate was 78%. Influenza vaccine was offered to residents and staff by 99% and 86%, respectively, of nursing homes. Among nursing homes offering the influenza vaccine, the average vaccination rate was 83% for residents and 46% for staff. Sixty-seven percent of the nursing homes reported having access to laboratories with rapid antigen testing capabilities, and 19% reported having a written policy for the use of influenza antiviral medications for outbreak control. Nursing homes from New York, where organized education programs on influenza detection and control have been conducted for many years, were more likely to have reported a suspected or laboratory-confirmed influenza outbreak (51% versus 10%, $p = .01$), to have access to rapid antigen testing for influenza (92% versus 63%, $p = .01$), and to use antivirals for prophylaxis and treatment of influenza A for their nursing home residents (94% versus 55%, $p = .01$) compared with nursing homes from the other eight states. Influenza outbreaks among nursing home residents can lead to substantial morbidity and mortality when prevention measures are not rapidly instituted. However, many nursing homes in this survey were neither prepared to detect nor to control influenza A outbreaks. Targeted, sustained educational efforts can improve the detection and control of outbreaks in nursing homes.

DEATH AND BEREAVEMENT

Ethics, Life, and Death

1150

Lee, Melinda A., et al. Physician orders for life-sustaining treatment (POLST): outcomes in a PACE program. *Journal of the American Geriatrics Society* 48(10):1219-1225, Oct. 2000.

DO-NOT-RESUSCITATE ORDERS. PHYSICIAN ORDERS FOR LIFE-SUSTAINING TREATMENT. TERMINAL PATIENT CARE.

This study sought to evaluate whether terminal care was consistent with Physician Orders for Life-Sustaining Treatment (POLST), a preprinted and signed doctor's order specifying treatment instructions in the event of serious illness for CPR, levels of medical intervention, antibiotics, IV fluids, and feeding tubes. The design was a retrospective chart review. The setting of the study was ElderPlace, a Program of All-Inclusive Care for the Elderly (PACE) site in Portland, Oregon. Participants were all ElderPlace participants who died in 1997 were eligible ($N = 58$). Reasons for exclusion were no POLST (1), missing POLST (1), and insufficient documentation of

care (2). POLST instructions for each participant and whether or not each of the treatments addressed by the POLST was administered in the final 2 weeks of life. The POLST specified "do not resuscitate" for 50 participants (93%); CPR use was consistent with these instructions for 49 participants (91%). "Comfort care" was the designated level of medical intervention in 13 cases, "limited interventions" in 18, "advanced interventions" in 18, and "full interventions" in 5. Interventions administered were at the level specified in 25 cases (46%); at a less invasive level in 18 (33%), and at a more invasive level in 11 (20%). Antibiotic administration was consistent with POLST instructions for 86% of 28 subjects who had infections in the last 2 weeks of life, and less invasive for 14%. Care matched POLST instructions in 84% of cases for IV fluids and 94% for feeding tubes. POLST completion in ElderPlace exceeds reported advance directive rates. Care matched POLST instructions for CPR, antibiotics, IV fluids, and feeding tubes more consistently than previously reported for advance directive instructions. Medical intervention level was consistent with POLST instructions for less than half the participants, however. We conclude that the POLST is effective for limiting the use of some life-sustaining interventions, but that the factors that lead physicians to deviate from patients' stated preferences merit further investigation.

Terminal Patient Care

1151

Baer, Wendy M., and Laura C. Hanson. Families' perception of the added value of hospice in the nursing home. *Journal of the American Geriatrics Society* 48(8):879-882, August 2000.

FAMILY CLIENTS. HOSPICES. NURSING HOMES. TERMINAL PATIENT CARE.

This study sought to determine if family members perceive that hospice improves the care of dying nursing home residents during the last 3 months of life. The design was a mailed survey. Participants were family members for all nursing home hospice enrollees in North Carolina during a 6-month period. After residents' deaths, family members answered questions about the quality of care for symptoms before and after hospice, the added value of hospice, the effect of hospice on hospitalization, and special services provided by nursing home staff or by hospice staff.A total of 292 (73%) of 398 eligible family members completed surveys. The average age of the nursing home residents who had received hospice was 79.5 years; 50% had cancer and 76% were dependent for self-care. In their last 3 months, 70% of decedents had severe or moderate pain, 56% had severe or moderate dyspnea, and 61% had other symptoms. Quality of care for physical symptoms was rated good or excellent by 64% of family before hospice and 93% after hospice (p .001). Dying residents' emotional needs included care for moderate or severe depression (47%), anxiety (50%), and loneliness (35%). Quality of care for emotional needs was rated good or excellent by 64% of family before hospice and 90% after hospice ($p < .001$). Fifty-three percent of respondents believed hospice prevented hospitalizations. Family estimated the median added value of hospice to be $75 per day and described distinct special services provided by hospice and by nursing home staff. Family members believe that nursing home hospice improves quality of care for symptoms, reduces hospitalizations, and adds value and services for dying nursing home residents.

1152

Heeren, Oscar, et al. Religion and end of life treatment preferences among geriatric patients. *International Journal of Geriatric Psychiatry* (UK) 16(2):203-208, Feb. 2001.

ADVANCE DIRECTIVES. END-OF-LIFE DECISION MAKING. TERMINAL PATIENT CARE.

The purpose of this study was to determine if religious preference and religiosity influenced choosing end of life treatments in medically ill geriatric patients. The sample consisted of 374 males 60 years of age or older, hospitalized on the acute medical service at the Baltimore Veterans Affairs Medical Center. Choices for end of life treatment preferences were CPR, medical ventilation, tube feeding and IV fluids within six different illness scenarios. Patients indicated how often they attended religious services, how much strength and comfort they got from religion and how religious they would describe themselves. Analyses of variance were performed using as the dependent variables the summation scores across the six scenarios of a willingness to undergo each of the four life saving procedures. The religious preference, race and religiosity scores served as the independent variables. Only tube feeding showed a significant ($p < 0.05$) relationship, with Catholics less willing to undergo this procedure than other Christians. The same trend was found for the other life saving procedures, but was not statistically significant.

1153

Travis, Shirley S., et al. Hospitalization patterns and palliation in the last year of life among residents in long-term care. *The Gerontologist* 41(2):153-160, April 2001.

HOSPICES. HOSPITALIZATION. LONG-TERM CARE. NURSING HOME RESIDENTS. PALLIATIVE CARE.

Purpose: This study compared patterns of care, including hospitalization, during the last year of life for a group of residents in institutional long-term care. These subjects were either implicitly or explicitly in palliative care modes versus those who remained in active treatment or blended care. Design and Methods: The study used a retrospective chart review and both quantitative and qualitative methods of data collection and analysis to examine in depth the end-of-life experiences of 41 nursing home residents who died in the nursing care unit of one large continuing care retirement community during an 18-month period. Most residents die in palliative care modes, but their movement into palliation with comfort care and symptom management is often slowed by indecision or inaction on the part of key decision makers, interrupted by aggressive acute care, or delayed until the last few days of life. Transitions from active curative care to palliative care are important for residents in permanent long-term care placements. Improved end-of-life care requires more attention to these transitions and to the decisions that residents, their families, and care teams are called upon to make.

Death and Dying

1154

Anstey, Kaarin J., et al. Demographic, health, cognitive, and sensory variables as predictors of mortality in very old adults. *Psychology and Aging* 16(1):3-11, March 2001.

COGNITIVE PROCESSES. DEMOGRAPHIC CHARACTERISTICS. FRAIL ELDERLY. HEALTH STATUS. MORTALITY RATES. PREDICTIVE VALIDITY.

Cognitive and sensorimotor predictors of mortality were examined in the Australian Longitudinal Study of Ageing, controlling for demographic and health variables. A stratified random sample of 1,947 males and females aged 70 and older were interviewed, and 1,500 were assessed on measures of health, memory, verbal ability, processing speed, vision, hearing, and grip strength in 1992 and 1994. Analyses of incident rate ratios for mortality over 4- and 6-year periods were conducted using Cox hierarchical regression analyses. Results showed that poor performance on nearly all cognitive variables was associated with mortality, but many of these effects were explained by measures of self-rated health and disease. Significant decline in hearing and cognitive performance also predicted mortality as did incomplete data at Wave 1. Results suggest that poor cognitive performance and cognitive decline in very old adults reflect both biological aging and disease processes.

1155

Leff, Bruce, Kimberly P. Kaffenbarger, and Robin Remsburg. Prevalence, effectiveness, and predictors of planning the place of death among older persons followed in community-based long term care. *Journal of the American Geriatrics Society* 48(8): 943-948, August 2000.

DEATH. LONG-TERM CARE. PLACE OF DEATH. PREDICTIVE VALIDITY. TERMINAL PATIENT CARE.

Little is known about whether patients plan for the site of their death and whether such planning is effective. This study sought to determine the prevalence, effectiveness, and predictors of planning the place of death among older homebound persons followed in a community-based, physician-led house call program.The design was a retrospective chart review. The setting was a geographically defined catchment area in southeast Baltimore, Maryland. The subjects were 125 patients who died between July 1995 and November 1998 who were followed in a physician-led house call program. Presence of a plan to die in a specific place and concordance between planned and actual place of death. Eighty patients (64%) made a plan to die in a specific place, and these plans were executed successfully in 73 cases (91%). The median time between formulating a plan to die in a specific place and death was 36 days. In logistic regression analysis, making a plan to die in a specific place was positively associated with an advance directive of Do Not Resuscitate (DNR) (odds ratio [OR] 11.7, confidence interval [CI] 3.7, 32.5) and negatively associated with the lack of an identifiable main medical problem other than being homebound (OR 0.17; CI, 0.02-0.88). Among a group of frail older persons living in the community, planning to die in a particular place was common and implemented successfully most of the time. Providing physician care at home may facilitate improved end-of-life care for older persons.

Suicide and Suicidal Behavior

1156

De Leo, Diego, et al. Attempted and completed suicide in older subjects: results from the WHO/EURO Multicentre study of suicidal behavior. *International Journal of Geriatric Psychiatry* (UK) 16(3):300-310, March 2001.

CROSS-NATIONAL COMPARISON. EUROPEAN UNION. SUICIDE. SUICIDE ATTEMPTS. WORLD HEALTH ORGANIZATION.

The authors present an analysis of findings for the 65 years and over age group from the WHO/EURO Multicentre Study of Suicidal Behaviour (1989-93). Multinational data on non-fatal suicidal behavior is derived from 1518 subjects in 16 European centers. Local district data on suicide were available from 10 of the collaborating centers. Stockholm (Sweden), Pontoise (France) and Oxford (UK) had the highest suicide attempts rates. In most centers, the majority of elderly who attempted suicide were widow(er)s, often living alone, who used predominantly voluntary drug ingestion. Non-fatal suicidal behavior decreased with increasing age, whereas suicide rates rose. The ratio between fatal and non-fatal behaviors was 1:2, that for males/females almost 1:1. In the years considered, substantial stability in suicide and attempted suicide rates was observed. As their age increased, suicidal subjects displayed only a limited tendency to repeat self-destructive acts. Moreover, there was little correlation between attempted suicide and suicide rates, which carries different clinical implications for non-fatal suicidal behavior in the elderly compared with younger subjects in the same WHO/EURO study.

1157

Harwood, Daniel, et al. Psychiatric disorder and personality factors associated with suicide in older people: a descriptive and case-control study. *International Journal of Geriatric Psychiatry* (UK) 16(2):155-165, Feb. 2001

AUTOPSY. CASE CONTROL STUDIES. MENTAL DISORDERS. PERSONALITY TRAITS. SUICIDE.

This study sought to determine the rates of psychiatric disorder and personality variables in a sample of older people who had committed suicide and to compare the rates in a subgroup of this sample with those in a control group of people who died from natural causes. Descriptive psychological autopsy study, including interviews with informants, of psychiatric and personality factors in 100 suicides in older people. Case-control study using subgroup of 54 cases and matched control group. Four counties and one large urban area in central England, UK. Individuals 60 years old and over at the time of death who had died between 1 January 1995 and 1 May 1998, and whose deaths had received a coroner's verdict of suicide (or an open or accidental verdict, where the circumstances of death indicated probable suicide). The control group was an age-and sex-matched sample of people dying through natural causes in the same time period. The main outcome measures were ICD-10 psychiatric disorder, personality disorder and trait accentuation. Seventy-seven percent of the suicide sample had a psychiatric disorder at the time of death, most often depression (63%). Personality disorder or personality trait accentuation was present in 44%, with anankastic or anxious traits the most frequent. Depression, personality disorder, and personality trait accentuation emerged as predictors of suicide in the case-control analysis. Personality factors as well as depression, are important risk factors for suicide in older people.

1158

Uncapher, Heather, and Patricia A. Areán. Physicians are less willing to treat suicidal ideation in older patients. *Journal of the American Geriatrics Society* 48(2):188-192, Feb. 2000.

PHYSICIANS. SUICIDAL BEHAVIOR. TREATMENT TECHNIQUES.

Older adults have the highest rate of suicide of any age group, and reducing the number of late-life suicides has become a national priority. The objective of this study was to determine if an age bias exists among primary care physicians when they contemplate treating suicidal patients. Primary care providers were mailed one of the two case vignettes of a suicidal, depressed patient. The only difference between the two vignettes was the age of the patient (38 or 78 years old) and employment status (employed versus retired as a factory worker). A questionnaire was included to determine provider recognition of suicidal ideation, and a scale was designed to detect willingness to treat the vignette patient. Physicians were selected randomly from the University of California, San Francisco physician roster and invited to participate in the study. A total of 342 physicians (63% response rate), including specialists, responded to the mailings. For this study, the responses of 215 primary care physicians were analyzed. The randomly assigned experimental group received a vignette of a geriatric, retired patient who was depressed and suicidal (n = 100 participants). The control group received an identical but younger, employed patient (n = 115 participants). A 21-item Suicidal Patient Treatment Scale measured willingness to treat the suicidal patient. The physicians in this study recognized depression and suicidal risk in both the adult and the geriatric vignette, but they reported less willingness to treat the older suicidal patient compared with the younger patient. The physicians were more likely to feel that suicidal ideation on the part of the older patient was rational and normal. They were less willing to use therapeutic strategies to help the older patient, and they were not optimistic that psychiatrists or psychologist could help the suicidal patient. This study suggests that primary care physicians are capable of recognizing suicidal ideation but are less willing to treat it if the patient is older and retired. Future research needs to determine etiologic factors for this age bias.

1159

Wittkowski, Joachim. The construction of the Multidimensional Orientation Toward Dying and Death Inventory (MODDI–F). *Death Studies* 25(6):479-495, Sept. 2001.

DEATH. GERMANY. MULTIDIMENSIONAL ORIENTATION TOWARD DYING AND DEATH INVENTORY. PSYCHOLOGICAL ADJUSTMENT.

This article describes the development of a questionnaire for the multidimensional assessment of both the fear of dying and death and the acceptance of dying and death. The Multidimensional Orientation Toward Dying and Death Inventory (MODDI–F) is based on a 2×4 dimensional a priori structure. It consists of a factor analytically constructed version with 47 items in 8 subscales. In a German sample (N = 944; 426 men, 513 women), the internal consistency of the subscales range from .82 to .92. With the exception of one subscale, test-retest reliability is satisfactory. Construct validity has been demonstrated. The influence of social desirability is small in women and moderate in men. The available data suggest that MODDI–F provides a comprehensive, differentiated, reliable, and valid measurement of various orientations toward dying and death.

Bereavement

1160

Danforth, Marion M., and J. Conrad Glass, Jr. Listen to my words, give meaning to my sorrow: a study in cognitive constructs in middle-age bereaved widows. *Death Studies* 25(6):513-519, Sept. 2001.

BEREAVEMENT. COGNITIVE PROCESSES. MIDDLE-AGED ADULTS.

This research examined how women widows in midlife give meaning to the experiences of loss in the process of grief resolution following the first year of bereavement. Qualitative data were gathered from women between the ages of 51 and 56 years through interviews guided by critical reflection. The following six themes emerged in the meaning-making process: emotional dissonance, identification of previously held assumptions, reflections on current life experiences—testing the assumptions, identification of self as survivor, changes in sense of self and ways of knowing, and changes in perspectives. Findings indicated that the crisis of loss challenged basic assumption about self, relationships, and life options and initiated a need to find new perspectives that would incorporate loss and provide for meaningful life direction. Perspective transformation began to occur after the first year following loss, when the initial crisis of survival and anguish had abated, and was most effectively achieved several years after the death. Implications are presented for the bereaved, practitioners who assist the bereaved, adult educators, and researchers.

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