Tackling the Challenges of Global Aging

With advances in technology, economics and health care, people are living longer lives in many parts of the world. By 2050, the world’s population aged 60 and over is projected to increase from 600 million to 2 billion. This change is most notable in developing countries where the aging population will rise to 1.7 billion. However, this achievement poses significant challenges since few countries have adequately oriented their health and social services to meet the needs of their aging populations, or even know how to do so.

To tackle this issue, the Duke Global Health Institute, the Duke Center for the Study of Aging and Human Development, Duke Population Research Institute, International Population and Development Working Group and Nursing in the Caribbean, and others are working to better understand the demographic, genetic, biological and clinical aspects of global aging. Faculty from the Duke Global Health Institute are involved in each of these groups, which allow for more collaboration and exchange of ideas between groups and across disciplines.

Current research by DGHI faculty and affiliate members includes physical activity among the elderly in Shanghai, China; stroke in Kampala, Uganda; demographic studies in Indonesia and Mexico; and health status and caregiving among the elderly in Sri Lanka.

Building New Partnerships to Study Disability-Specific Patterns Of Physical Activity In Shanghai Older Adults

This pilot project from investigators Jama Purser and Pamela Duncan and postdoctoral fellow Qiushi Feng looked at physical activity among elderly in Shanghai. In China, low physical activity increases the risk of most chronic diseases; nearly 20 percent of all deaths over age 35 are attributed to low physical activity. Increasing physical activity is a key strategy recommended for improving health and mortality patterns. Researchers estimate 1.4 million elderly Shanghai adults to be at increased risk of disease and death because of physical inactivity. Yet no comprehensive study of elderly physical activity is available and few providers are trained.

Investigators addressed this important global health problem by building new partnerships with Shanghai University of Finance and Economics (SUFE) to evaluate patterns of disability and physical activity in a random sample of Shanghai elderly. They developed a new survey of patterns of physical activity and activity preferences; used an existing dataset to estimate disability-specific patterns of physical activity; and conducted focus groups and feasibility assessments for future collaborative community-based screening and physical activity promotion programs.

Continues on page 4
The notion that intense or chronic emotional experiences can have consequences for health is supported by a great deal of research.

This research, however, has historically been centered almost entirely on negative emotions, particularly depression, hostility, and anger. Positive emotion has often been viewed simply as the absence of the pathogenic negative emotions. In the past several years, this view has been challenged by an increasingly strong case for the health benefits of positive emotions per se.

Researchers who specialize in the study of emotion have posited that the general functional purpose of positive emotion is to provide a respite from the stress associated with negative affectivity. In addition to providing a respite from negative emotion, positive emotion may serve other important functions. Briefly, one of the principle functions of positive emotions is to “broaden” our thought process, serving to motivate a wide variety of action tendencies that may facilitate personal growth and promote survival. Positive emotions seem to expand behaviors beyond the narrow focus directed by the negative emotions, and as a consequence, this redirection of behavior and cognition may help ‘undo’ the consequences of negative emotion. The experience of positive emotions also leads to increased social support, increased participation in social activities, and expansive behaviors that reflect greater psychological flexibility and resiliency. It is these behaviors, in part, that are believed to confer many of the health benefits of positive emotion.

Having received a pilot grant from the Claude Pepper Older American Independence Center at Duke, my goal was to examine the relationship between positive emotion and physical functioning in older adults. To examine this relation I proposed to use existing longitudinal data sets that contained serial measures of emotion and physical functioning in adults aged 60 and older. One particularly important aspect of this work was that I wanted to examine the effects of positive emotion while statistically controlling for (or removing) the effects of negative emotion. This answers the question, “does positive emotion impact functioning independent of negative affect?”

One of the data sources I used consisted of approximately 1,000 people with cardiac disease. The measure of day-to-day physical functioning was the Duke Activity Status Inventory (DASI), a well-validated assessment that maps onto other measures of aerobic fitness. Positive and negative emotion and physical function measures were gathered while the participants were hospitalized for a cardiac catheterization, and then annually for 3 years after they returned home. The results of my
analysis showed that positive emotion assessed during the time of hospitalization predicted change in physical function in these participants, and that this association was indeed independent of the effects of negative emotion. Specifically, lower levels of positive emotion were associated with accelerated decline in physical function over the 3 year follow-up period. Thus, our findings indicated that the experience of positive emotions, such as happiness, was linked to less decline in day-to-day physical functioning in older individuals following hospitalization for cardiac disease.

Encouraged by these results, I next examined positive emotion as a predictor of physical functioning in a community based sample of approximately 500 people aged 60 and up. Similar to the findings in the participants with cardiac disease, positive emotion at the initial assessment time, as well as the change in emotion over 6 years, predicted change in functional status over the follow-up period—again independent of the effects of negative emotion. Thus, in two independent samples I was able to show that positive emotions were related to better physical functioning over time.

It is my hope that these findings might encourage health care professionals to focus not only on negative emotions, but to consider the potential importance of positive emotions as well. Clinicians may find it helpful to measure positive emotion in their patients to help them identify the potential for physical decline. Results of an interesting new study has shown that positive emotion interventions are successful at increasing well-being, and also seem to be most effective in older individuals.

CONTINUED FROM PAGE 2

Positive Emotion Leads to Better Health

Hall Elected To Head ESPO

Katherine S. Hall, PhD, a Post-Doctoral Fellow at the Durham VA Geriatric Research, Education, and Clinical Center, has been elected to be the incoming chair-elect of the Emerging Scholar and Professional Organization (ESPO) of the Gerontological Society of America (GSA).

Upon accepting this office, Dr. Hall begins her three-year tenure as an active leader within both the ESPO and GSA. Since its inception, ESPO has functioned as the official forum within the GSA for students, post-doctoral fellows and trainees, and individuals transitioning into professional status. As such, the ESPO is charged with promoting GSA’s commitment to fulfilling the needs of its junior members, most notably by providing structured opportunities for professional development, mentoring, ESPO-sponsored scientific presentations, and education about funding sources at the GSA annual meetings.

Dr. Hall received her PhD in Kinesiology with a focus in Exercise/Behavioral Medicine and Aging from the University of Illinois at Champaign-Urbana. She joined the Durham VA in 2009 as a post-doctoral fellow where she continues to work with Dr. Miriam Morey. As a behavioral scientist, Dr. Hall’s primary research interests include studying physical activity, function, and quality of life in older adults.

More recently, Dr. Hall has focused on studying the added burden of psychological comorbidities, such as posttraumatic stress disorder, on behavioral and functional outcomes in older veterans. Dr. Hall noted that she is looking forward to this opportunity to promote opportunities within GSA that will benefit her junior colleagues both at the Durham VA and the Duke Aging Center.
in Shanghai. Outcomes from this work continue to be tracked.

**The Mexican Family Life Survey**
The Mexican Family Life Survey (MxFLS) is a multi-thematic and longitudinal database which collects a wide range of information on socioeconomic indicators, demographics and health indicators on the Mexican population. Helmed by investigator and DGHI faculty member Duncan Thomas, MxFLS is the first Mexican survey with national representation to track the Mexican population for long periods of time regardless of migration decisions. The goal of the survey is to study the dynamics of economy, demographics, epidemiology and population migration over a 10-year period. The surveys continue to shed light on economic well-being, resources and preferences, as well as extensive biomarker information.

**Sri Lankan Aging Study**
The Sri Lankan population is aging rapidly, but little is known about the health, quality of life, and physical and cognitive functioning among the elderly. In this project, investigator and DGHI affiliate Truls Ostbye and Duke-NUS faculty member Angelique Chan are analyzing data from a World Bank-sponsored national survey to explore this population’s health status, prevalence of depression, and prevalence of and concerns relating to informal caregiving. Results from this study can inform policy for caring for the elderly in Sri Lanka.

**Uganda Stroke Research Planning Grant**
Mulago National Referral Hospital, Makerere University and Duke University Medical Center were awarded an NIH planning award to establish a research training program in stroke prevention. The grant helped the institutions identify common research goals and the means to accomplish them, while also gaining a better understanding of research infrastructure and various training opportunities. Ugandan trainee Martin Kaddumukasa received short-term research training at Duke. Under the mentorship of Pam Duncan, Larry Goldstein and John Bartlett, he designed a research proposal to provide preliminary data on stroke and stroke-related risk factors at Mulago National Referral Hospital. Martin has completed study enrollment and is working on data analysis with plans to submit an abstract on his work.

These programs are just the start of what we can accomplish together to address this growing and challenging issue that is so prominent around the world. For more details on these and other research efforts under way, go to: www.globalhealth.duke.edu/research

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**Duke Global Health Institute: Tackling the Challenges of Global Aging**

Four Center faculty have been named by *U.S. News & World Report* as among the top 10% of doctors in their field: Dan Blazer, MD, PhD; Kenneth Lyles, MD; Kenneth Schmader, MD; and James Tulsky, MD. These doctors were nominated by their peers as those who they believe are the most worthy of referral.

Blazer is a Senior Fellow at the Center for the Study of Aging, J.P Gibbons Professor of Community and Family Medicine, and a specialist in the area of depression among older patients. Lyles and Schmader are Professors of Medicine in Geriatrics. Tulsky is Professor of General Internal Medicine.
Two posters and a paper by Duke faculty and students were presented at the Alzheimer’s Association International Conference in Paris during July 16-21.

Jennifer Shaffer, FC Sheldon, MD MacCarthy, KR Choudhury, VD Calhoun, PM Doraiswamy, and JR Petrella presented a poster on “Predicting future cognitive decline in MCI subjects using CSF, Whole-Brain MRI, and FDG-Pet Biomarker Data from ADNI.” They concluded that a combination of cognitive tests, genetics, FDG-PET, MRI and CSF protein biomarkers was better than any individual marker in predicting conversion from MCI to dementia.

Mathew MacCarthy, FC Sheldon, JL Shaffer, VD Calhoun, PM Doraiswamy, and JR Petrella presented a poster on “Predicting cognitive decline in normal elderly using multivariate analysis of MRI and FDG-PET.” They concluded that MRI may contribute predictive information about cognitive decline among normal elderly beyond that of routine cognitive tests.

Murali Doraiswamy, and R. Edward Coleman reported the results of a multicenter trial that showed that the presence or absence of amyloid detected by 18F-Florbetapir PET scan may help identify individuals at increased risk for future cognitive decline or progression to Alzheimer’s.

The data for the posters were derived from the Alzheimer’s Disease Neuroimaging Initiative (ADNI). ADNI was begun in 2003 with the goal of developing improved biomarkers and methods of studying people at risk for Alzheimer’s disease. All of the above studies were done through the Duke Departments of Radiology and Psychiatry. Shaffer & MacCarthy are Duke medical students.

New Duke Faculty Support Staff Member

Bobbi G. Matchar, MSW, MHA, has joined the Duke Center For Aging Family Support Program. She received her MSW from Hunter College School of Social Work and her MHA from the UNC School of Public Health. She has worked in the Aging Program of Jewish Family Services of Durham & Chapel Hill, as well as in the Geriatrics Division of the Durham Veterans Administration. Bobbi will work on our NC Division of Aging and Adult Services contract responding to individual and group requests for information from NC families and professionals with questions about Alzheimer’s and family care. She will share responsibility with Lisa Gwyther, MSW, for the Duke Employee Elder Care Consultation Service. In addition, Bobbi will co-lead, with Cornelia Poer, MSW, the monthly evening Alzheimer’s Family Support Group, and she will lead the monthly Daughters Concerned for Aging Relatives group. Welcome Bobbi!
Three Center authors have recently published new books at Kindle as eBooks:

**Erdman Palmore, PhD**, published *Older Can Be Bolder: 101 answers to your questions about aging*. Each answer is introduced with a relevant quotation or joke. The Preface lists 45 advantages of growing older. This eBook is now also available in hard copy from Amazon.

**Murali Doraiswamy, MD**, and **Lisa Gwyther, MSW**, published *Living Well After a Diagnosis of Alzheimer’s*. This is a mini-book that answers common questions family members of Alzheimer’s patients deal with.

The books can be downloaded for $1.99 from Amazon and read on any eBook reader such as Kindle or “Kindle for your PC” or Nook. The low price is intended to make the books widely available. The eBooks can be sent to relatives or friends as gifts.

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**Where Are They Now?**

When they leave Duke our Post-Doctoral Fellows tend to get excellent positions at prestigious institutions. Here is the contact information for several recent examples.

**Nancy Dennis, Ph.D.**
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**Duke GERI in Top Five**

*US News & World Report* has ranked Duke Geriatrics as number 5 in the nation this year. This ranking is based on a combination of subjective and objective indicators such as the Division’s reputation with specialist, the survival rate for patients, success in keeping patients safe, patient volume, nurse staffing, and patient services.

Duke Geriatrics has been ranked among the top 10 “Best in the Nation” for several years. It is also the highest ranked program at the Duke Medical Center.

It is a great honor to be ranked so high for so long.
Coming Events

**October 21–23**
“New Directions for Aging,” joint 4th Pan American Congress of Gerontology and Geriatrics of the International Association of Gerontology and Geriatrics (IAGG) and 40th Annual Scientific and Educational Meeting of the Canadian Association on Gerontology. Ottawa, Ontario, Canada. Take advantage of this opportunity to meet colleagues from North America, Latin America, and the Caribbean in Canada’s capital. Visit the Canadian Association on Gerontology’s website, [http://www.cagacg.ca](http://www.cagacg.ca).

**November 16–18**
9th International Reminiscence and Life Review Conference. Boston, MA. Visit [www.reminiscenceandlifereview.org](http://www.reminiscenceandlifereview.org) or contact jkunz@uwsuper.edu.

**November 18–22**

**April 19–22, 2012**
33rd Annual Meeting of the Southern Gerontological Society, Nashville, TN. Contact Lora Gage at 239-541-2011 or LGage4SGS@aol.com.