



the Center Report

Rates of Regular Physical Exercise Among Chinese Older Adults with Disability

China is a very interesting country for anyone interested in global health and global aging. First, it has the world's largest population of older adults, so that chronic conditions with even rare prevalence often pose major social and economic challenges due to the sheer magnitude of the population. Second, China is undergoing some of the most rapid rates of urbanization and economic growth ever observed in a developing country, along with a consequent epidemiologic transition away from infectious diseases and acute conditions toward more chronic conditions, such as cardiovascular disease, Type 2 diabetes, hypertension, cancer, pulmonary disease, and obesity.

Social policies have had a major impact on aging; in particular China's one-child policy has had the undesirable consequence of decreasing the number of caregivers available to take care of older adults, which is projected to drastically in-

crease old-age dependency ratios in the coming decades. While many older adults say they would prefer to live with or near their children as they age, it is more likely that many will not have this support available due to the unavailability of children to fulfill this need. Thus, maintaining health, physical activity, and independence will likely become more important factors in optimizing quality of life and healthy aging. Yet little information currently exists to inform disability-prevention and physical activity promotion programs in Chinese elderly, where 62% of those age 65 and older report that they do not engage in regular physical exercise.

The purpose of our recent studies have been to examine rates of regular physical exercise and its impact on three-year survival, as well as habitual and leisure time physical activity in Chinese older adults across different disability states. We used the Chinese Longitudinal Healthy

Longevity Survey (CLHLS) to classify four increasingly severe subtypes of disability, and characterized the rates and impact of regular physical exercise in nondisabled older adults and those with increasingly severe disablement.

Our work shows that 79% of Chinese older adults are independent: they can do both BADLs (basic activities of daily living such as eating, grooming, bathing, transfers, toileting, continence) and physical performance tasks like picking up a book from the floor, standing from a chair without using arm support, and turning in a circle from a quiet standing position without losing balance. However, only about 40% of this healthy group say they participate in regular physical exercise.

Approximately 21% of Chinese older adults have one of 3 severe types of disability. Only 3% of people were found to have only isolated limitations with one or more BADLs without concurrent performance limitations, and the rate of regular exercise in this group was surprisingly similar to rates in the healthiest Chinese. In people with observed isolated physical limitations, however, this rate drops off substantially to 27%, meaning that approximately 73% of this currently-independent but physically-limited group, are not engaging on a regular basis in physical exercise. This pattern is even worse in people with physical performance limitations who were already dependent with BADLs – only about 17% of this group reported any regular



Jama Purser, PT, PhD



Qiushi Feng, PhD



How To Improve Your Memory

Memory loss is one of the major concerns of elders. Despite many nostrums claiming to improve memory, there are only two substances that have been proven to improve memory: caffeine and sugar. Unfortunately the effects of these two substances are only temporary.

However there are a several things you can do to preserve and boost your memory:

- Exercise your brain. Although the brain is not a muscle, it responds to exercise like a muscle. If you exercise it, it tends to maintain its strength; if you don't use it much, it tends to wither and memories tend to atrophy. Apparently any kind of challenge to your mind can work as brain exercise: solving puzzles, playing games, memorizing poems and songs, learning a new language, taking or teaching a course, writing, using a computer, reading something mentally challenging, playing a musical instrument, dancing, and doing a routine task in a novel way (like using your left hand if you're right handed, and vice versa).
- Process information with several senses: visual, auditory, and touch.
- Avoid excessive stress. A little stress may be good to challenge your brain, but too much stress, that makes you anxious or depressed, is not good.
- Get plenty of sleep. Most older people need as much or more sleep as younger people. Short naps during the day are also beneficial.

- Stay involved with people. People with larger social networks tend to maintain their mental functions better than isolated people, because social people are more likely to engage in the physical and mental activities which boost brain function.
- Do volunteer work. Volunteer work tends to challenge brains with new activities, exercise, and socializing. It also makes you feel useful and valued, which helps prevent depression.

- Take care of your body. Your brain is part of your body, so keeping your body healthy through regular exercise, good diet, hygiene, and medical care is essential for brain health.
- Eat a brain-healthy diet: lots of fruits and vegetables, whole grains, fish like salmon, tuna, and sardines (rich in omega-3 fatty acids).

Adapted from Palmore, *What Am I Getting Into?*, forthcoming.

New Faces

Welcome to two new employees in the Center for Aging: Esther Granville and Alana Bennett.

Esther is a Research Dietician Clinician. She received her undergraduate degree in Nutrition from the University of Maine and a Master's in Exercise Physiology from East Carolina University. She completed a dietetic internship at The Ohio State University. At Duke she is working on a study of preventing diabetes with Connie Bales. Esther's office is Room 00505B, Busse Building and she can be reached at 660-7524 or 660-7507.

Alana is a Data Technician Senior for the Beeson Career Development Award. She received her undergraduate degree in Biology from the University of North Carolina at Greensboro. She has a Graduate Certificate in Core Public Health Concepts from the University of North Carolina and is currently working on her Master's in Public Health from Walden University. Here at the Center, she is working with Kim Johnson on a study titled, "Organizational Policies, Programs, and Practices and Racial Disparities in Hospice Use." She is located in Room 0502C Busse Building and can be reached at 660-7531.

Gold Wins Award

Deborah T. Gold, PhD, Director of the Undergraduate Human Development Program, was presented with the 2009 Outstanding Postdoc Mentor at Duke Award on September 18. At the ceremony, the presenters noted how unusual it was that multiple Aging Center postdocs submitted nominations for Dr. Gold. The award recognizes that a good mentor serves not only as a teacher, but as an advisor, advocate, and role model to postdocs throughout their professional training. The award included a plaque and \$500 for her research.

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Call for Papers and Presentations: 3rd Annual Meeting of the Society for Spirituality, Theology and Health

The Call for Papers for the 3rd Annual Meeting of the Society for Spirituality, Theology and Health is now open. Applications can be submitted for either a paper or poster presentation. Paper sessions will be 35 minutes long. The presentations should relate to the meeting's theme "Religion and Health: Interdisciplinary Engagement and Interpretation," and the following categories are available: Interdisciplinary Research, Mediators & Pathways, Religious Organizations & Public Health, Spirituality and Clinical Care, and Theological Considerations. Graduate students are encouraged to apply. The applications are due March 1, 2010. Questions and applications can be directed to dukespiritualityandhealth@gmail.com.

Application is available at <http://www.societysth.org/index.php/2010-meeting#call>

The 3rd Annual Meeting of the Society for Spirituality, Theology and Health will be held June 16-18, 2010 at the R. David Thomas Executive Conference Center at Duke University. The keynote address will be given by Rabbi Dr. Marc A. Gellman, Ph.D., Senior Rabbi, Temple Beth Torah. Other speakers include Tracy Balboni, M.D.; Veena Das, Ph.D.; Al Dueck, Ph.D.; Neal Krause, Ph.D.; and David O. Moberg, Ph.D. Events include a round table discussion, networking groups, and paper and poster presentations by participants. Please visit www.societysth.org for more information.

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physical exercise. Regular exercise significantly decreased rates of death over three years for people at all levels of health and disability, but greater effects on survival were observed for those with the most severe disability.

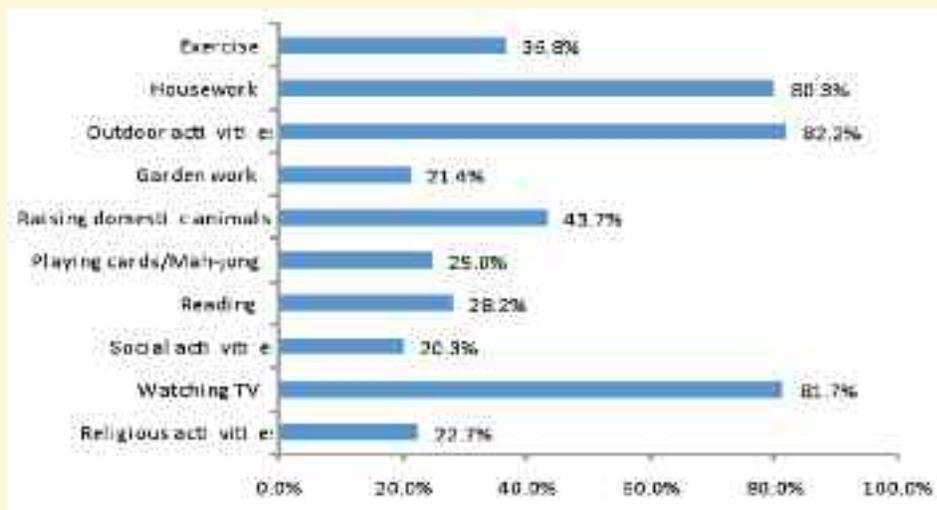
Sometimes people confuse regular exercise and regular habitual and/or leisure time physical activities, such as house-keeping, gardening and other outdoor activities, farm-related activities such as animal husbandry, or even participation in more social activities such as leaving the house to participate in social or religious groups or activities. We accounted for this type of activity in our analysis by controlling for potential confounding by single activities and by participation in multiple habitual or leisure time activities. The figure below describes rates of participation in such activities.

Rates of physical exercise and specific types of habitual and/or leisure activities in China.

Both regular exercise and habitual and/or leisure-time activity decreased rates of death in all categories of health and disability. On the other hand, regular physical exercise and habitual physical activi-

ties were only weakly correlated, and including habitual and leisure time activity in our models did not eliminate the protective effect of regular physical exercise on rates of death over three years.

More work is needed to better understand and to extend our work, although preliminary results suggest there may be multiple ways in which an older adult could meet suggested guidelines for regular physical exercise in order to promote health. Some may want to engage in formal exercise programs, such as T'ai Chi or regular walking programs. Others may be able to maintain adequate activity levels sufficient to decrease their risk of death simply by increasing time spent participating in regular daily activities in or outside the home, or getting out of the home more to engage in social or religious activities. More work needs to be done to further explore which specific types of exercise, habitual activity and/or leisure time activities might be most appropriately and efficiently promoted and which may optimally enhance protective effects in people with specific levels of health and disability.





Should health care be rationed by age?

A recent issue of *Newsweek* had a cover story titled, “Pulling the plug on granny,” with a picture of a plug dangling unplugged. Despite this rather sensational and controversial cover, the article was actually a thoughtful and informative summary of what might be done to reduce the costs and excessive use of medical care at the end of life.

There is no question that we need to reduce the spiraling costs of medical care in our nation, which have grown by nearly 50 percent in the past decade. At the current rate of increase health care costs will consume about one-fifth of our GDP by about 2018. And despite spending more per capita on health care than most nations, we have higher morbidity and mortality rates than many. Somehow we need to reduce medical costs *and* provide more universal care.

It is true that health care needs (and costs) increase in the latter years of life. But “rationing” health care for elderly persons is not a fair or acceptable solution. This would be a kind of ageism: discrimination against elders just when they need health care most.

Instead, there are several proposals which could substantially reduce our health care costs:

- Provide end-of-life counseling and living wills to reduce unwanted treatments at the end of life.
- Encourage greater use of hospice and palliative care for terminal patients to reduce heroic but hopeless treatment.
- Move to a single payer medical system like Canada or Great Britain. Even though this seems politically unacceptable at present, it would probably be the biggest cost saver of all because it would eliminate most of the big overhead costs of private insurance that goes to advertisement, paperwork, executive salaries, etc. It has been estimated that a single payer system could reduce our medical bills by 20 to 30 percent.
- Tort reform which limits the size of medical malpractice suits, or provides medical courts run by experts to rule on malpractice claims with no punitive damages would reduce the unnecessary “defensive” tests and procedures which doctors order just to protect themselves.
- Change fee-for-service to salaries for doctors, or per capita flat rate payments, to reduce the present incentive for doctors to order unnecessary treatments in order to get more fees.
- Assign nurses or physician assistants to patients to provide basic care and reduce the need for treatment by the more expensive physicians.

While there is no hard evidence that some of these proposals would have the desired effect, they appear to be preferable to any kind of rationing by age.

—Erdman Palmore

The opinions in this editorial are those of the author and do not necessarily reflect the views of the Center.

Predicting Alzheimers

A newly identified gene may be able to predict not only the risk of developing Alzheimer’s Disease (AD) but also the approximate age at which the disease will begin to manifest itself. This new gene, TOMM40, may be able to predict when AD develops within a five- to seven-year window among people over sixty.

“If borne out through additional research, a doctor could evaluate a patient based on age, especially among those over age sixty, their ApoE genotype, and their TOMM40 status, to calculate an estimated disease risk and age of onset,” said Allen Roses, MD, Professor of neurobiology and genetics at Duke University.

In 1993, Roses uncovered the association of ApoE genotypes with the risk of AD. Since then he and his team have used a new approach called phylogenetic analysis to better isolate specific genes and provide deeper analysis. This approach found that TOMM40 linked to ApoE3 had either short or long repeated sequences, while all ApoE4-linked repeat sequences were long. A longer version of TOMM40 attached to either ApoE3 or 4 was significantly associated with earlier disease onset, while the short-repeat sequences were associated with a later onset of disease.

The researchers now plan to validate their findings with further testing. They are proposing a five-year study combined with a drug trial aimed at preventing or delaying the onset of AD.

Adapted from “Predicting Alzheimer’s” Duke Magazine, September/October, 2009.

“With Shaking Hands”

Samantha Solimeo, PhD, has recently published a book titled, “With Shaking Hands: Aging with Parkinson’s disease in America’s Heartland.” It is based on her research while at the Center for Aging as a postdoctoral fellow, and is published by Rutgers University Press.



Did You Know?

Which is the best answer to the following questions?

1. **The proportion of African-Americans among the aged is**
 - a. Growing
 - b. Declining
 - c. Staying about the same
 - d. Small compared with most other minority groups
2. **Participation in voluntary organizations usually**
 - a. Does not decline among healthy older persons
 - b. Declines among health older persons
 - c. Increases among health older persons
 - d. Is highest among healthy youth
3. **The majority of old people live**
 - a. Alone
 - b. In long-stay institutions
 - c. With their spouses
 - d. With their children

Answers:

1. **a.** The proportion of African Americans among the aged (over age 65) is growing. In 1960 African Americans were 6% of all persons aged 65 or over and were 9% by 2009. This is an effect of the rapidly dropping mortality rate among African Americans.
2. **a.** Does not decline among healthy older persons. There does tend to be a decline in voluntary organization participation among those with declining health.
3. **c.** Two-thirds of older persons (not in long-stay institutions) live with a spouse or in another family setting. Only 28% live alone.

Adapted from *The Facts on Aging Quiz*, 2nd Ed. by Erdman Palmore, NY: Springer Publishing Co., 1998.

IAGG Coming to USA in 2017

The Gerontological Society of America (GSA) has been selected by the International Association of Gerontology and Geriatrics (IAGG) as the host organization for the 2017 World Congress of Gerontology and Geriatrics. This announcement was made during this year's World Congress in Paris, France. The GSA bid planning committee was chaired by former GSA President Harvey Jay Cohen, MD.

IAGG holds a World Congress every four years to provide an international forum for the exploration of new discoveries about aging. The 2017 gathering is slated to be held at the Moscone Center in San Francisco, CA, in July.

Welcome to New Members

We want to welcome our four new Geriatric Fellows:



We also bid farewell and best wishes to our departing fellows: Richard Lee, MD, Arati Dixit, MD and Mamata Yanamadala, MD.



Coming Events

March 5-8, 2010

American association for Geriatric Psychiatry 2010 Annual Meeting. Savannah, GA. Contact: www.AAGPmeeting.org.

March 15-19, 2010

NCOA-ASA Aging in America Conference. Hyatt Regency, Chicago, IL. Contact: www.agingconference.org.

April 8-11, 2010

31st Annual Meeting of the Southern Gerontological Society. Jefferson Hotel, Richmond, VA. Contact: Lora Gage at 239-541-2011 or www.southerngerontologicalsociety.org.

June 15-18, 2010

3rd Annual Meeting of the Society for Spirituality, Theology and Health, R. David Thomas Executive Conference Center, Duke University, Durham, NC. www.societysth.org.

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