A multidisciplinary approach to the study of aging

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Outline

- A conceptual framework for research on aging
- Two examples of current projects
  - Social Isolation, Health, & Lifestyles of Older Adults in Singapore
  - Care giving Study
- Ways forward: New conceptual frameworks for multidisciplinary teams
  - A systems dynamics approach for studying the need for home with services for older adults.
Population health perspective

- Developed to understand mental illness among older adults.
- Emphasizes the value of working with different disciplines on the same problem.
- Emphasizes the importance of biological, behavioral, physical and social environments, socioeconomic status, and housing in predicting depression (Bould 2005).
- Emphasizes the link between disability and depression and the role of policy (housing, transportation) in allowing older adults to better adapt to their living environments.
Aging in Singapore

- Lack of data at the national level on aging issues.
- Multi-level analyses needed to link individual characteristics with family and community characteristics, e.g., use of health care at the individual level, family resources, availability of home care services.
- While some knowledge exists regarding currently older adults (65+), incoming baby boomer cohort will have vastly different socio-demographic characteristics and behaviors.
Research Questions

• How are today’s elderly coping with the aging process, individually, within families, and within the community?

• In particular, what are the needs for:
  • Care giving
  • Long term care
  • Income security
  • Education
Research Questions (2)

- Based on today’s older adults’ characteristics and behavior, how can we aid policy planning today and in the future?
- Focus on specific areas:
  - Social isolation
  - Health (physical and mental)
  - Lifestyles
  - Caregiver burden
Multidimensional aspects of health

Social Isolation, Health, & Lifestyles Survey 2009
Social Isolation, Health, & Lifestyles Survey 2009

- In collaboration with the Ministry of Community Development, Youth & Sports
- Longitudinal nationally representative survey of 5,000 community dwelling older adults (60+).
- Overall focus: social isolation, risks (social and health), protective and mediating factors for loneliness and personal mastery.
Research and Policy Questions (1)

Overarching research and policy questions:
- Major causes and drivers of social isolation and loneliness
- Major protective and mediating factors

Specific research and policy questions:
- Implications of life course issues (e.g., poverty) of social isolation and loneliness
- Impact of housing and household characteristics
- Dynamics of insufficient income and resources (e.g., poverty) and social isolation and loneliness
- Contribution of employment status to social isolation and loneliness
Research and policy questions (2)

- Implications of health status (physical and mental health, mobility and activities of daily living) for social inclusion/exclusion
- Implications of social and economic factors on health status and active life expectancy
- Impact of active engagement in the community on the part of elders
- Contributions of family and social support to reducing social isolation and loneliness
Key Stakeholders

Building a team:

Local
Policymakers
Ministry of Community Development, Youth & sports

Academics
Sociology: FASS (NUS)
Medicine: Department of Endocrinology (NUHS), School of Dentistry (NUHS)
Epidemiology Duke University
Health Services Research Duke-NUS Graduate Medical School

International
Academics
Nihon University
University of the Philippines
Gathering data

Survey questionnaire:

- Collects information about functional status, chronic diseases, mental health outcomes, lifestyle behaviors, social networks, social participation, anthropometric measures
- Core module administered in Japan, Philippines, and Singapore. Additional questions specific to Singapore context.

Data collection for first wave of survey in progress (data expected July 2009)

Moving forward: Collect biomarker information at Time 2 (2011) and Time 3 (2013) to isolate biological underpinnings of social isolation, health outcomes, and mental illness.
Preliminary results

• Social isolation
  • 24% of older adults (60+) feel they occasionally/always lack companionship.
  • 17% occasionally/always feel left out

• Personal mastery
  • 29% of older adults (60+) feel their competency and skills are not recognized.
  • 31% feel there is no one who admires their talents and abilities.
Many older persons (60+) are in pain and lack proper sleep

- More than half of older adults are in pain over the last 30 days ranging from mild (38%), moderate (11%) to severe (3%).
- For 27%, pain affects their daily activities.
- 31% of older adults rarely or never feel rested when they wake up in the morning.
- 13% report depressive symptoms.
Caregiver burden and policies for care of older adults

Care giving in Singapore
The need for care giving

- As individuals age they face a decline in physical and/or cognitive health, and subsequent functional limitations.
- As Singapore's population ages and lives longer, a larger proportion of the elderly will require help and care, either by formal (paid) or informal (family, friends, and foreign domestic helpers) caregivers.
- The provision of elder care is traditionally considered the responsibility of informal caregivers in Singapore. At the same time the availability of adult child caregivers is declining due to lower fertility and the fact that most potential caregivers are in paid employment.
- In Singapore, about 29% of older adults depended on one main caregiver for their daily needs (MCYS 2006).
Who provides the Care?

- Today care giving is largely provided by family members; 60% of these caregivers were adult children, 12% were wives caring for their spouses, 3% were husbands caring for their wives, and 5% others (including siblings and other relatives).

- Remaining 20% of care giving is provided by foreign domestic workers. Informal care provided by paid domestic helpers may increase given smaller family sizes and increased female labor force participation (Chia, Chan, and Lim 2007).
Gaps in Knowledge

- A better understanding of the characteristics of this mix of informal caregivers, their concerns and the problems they face in caring for elderly is needed to formulate policies and programs to improve the support available to caregivers.
- This will enable families to remain effective as the first line of care and support, and to achieve successful ageing-in-place for the elderly.
- Specifically, we need to understand
  - patterns of care giving
  - the challenges faced by caregivers, and
  - caregiver burden.
Filling the Gaps

- Identify the social and demographic characteristics of informal caregivers in Singapore looking after an elderly family member;
- Identify the profile of the recipients of care;
- Determine what specific care giving tasks are being performed (e.g. bathing, feeding) and time spent doing these tasks;
- Identify which informal caregivers are coping well with their care giving responsibilities and which are not, as well as the factors that might explain this difference (e.g. financial burden, lack of support, choice in providing such care);
- Determine the impact of care giving (e.g., physical and mental health/well-being, employment) and the needs of informal caregivers (e.g., training, respite, financial assistance, education, formal home care).
Ways forward for studying care giving in Singapore

- Identify the social and demographic characteristics of a group of potential family caregivers of elderly who will need care in the future; and

- Determine the future choice mix of care among a group of elderly who do not currently need care.
How much need?

- Based on current statistics for disability, approximately 16% of individuals aged 75 and above will have at least one limitation in activities of daily living (for example, bathing, feeding, toileting) which is the most basic disability and leads to difficulties with IADLs and mobility (Chan, Malhotra and Ostbye 2009).
New approaches, moving forward

A Systems Dynamics Approach
Recently, systems dynamics modeling has gained attention in health services research as a useful tool to ascertain the impact of interventions on health status.

- The uniqueness of the model lies in the attention that is paid to feedback loops and unintended consequences of policy changes.

- Model can be applied in aging research.
An example

- The application of systems dynamics modeling to dementia and the use of in-home services (or Home With Services, HWS).
- Example is derived from joint work with Professor David Matchar (Duke-GMS), Dr. Rahul Malhotra (Duke-GMS) and Dr. Chetna Malhotra (Duke-GMS) and Ms Hong Ching Ye (Lien Centre for Palliative Care)
Home based services for dementia: Stock and Flow model

Rate 'Home to HWS'

Inflow: from institution

At Home, No Services

Rate of dementia onset

Outflow: Death and Institution

At Home, With Services (HWS)

Outflow: Institution and Death

Rate HWS to Home

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Conclusions

- Population aging in Singapore will create challenges for individuals, the family, and society.
- What it means to grow old, who should care, and what can we do about it will become increasingly pertinent questions.
- Research cannot be conducted in silos since aging is a multidimensional process.
- Our research should be informed by key stakeholder; older adults, their families, appropriate groups within society (e.g., employers or health care providers), and policy makers,
- We need evidence-based policy.