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Aging, Eldercare and Social Technology in China

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Aging in China and Asia

Aging as a global challenge

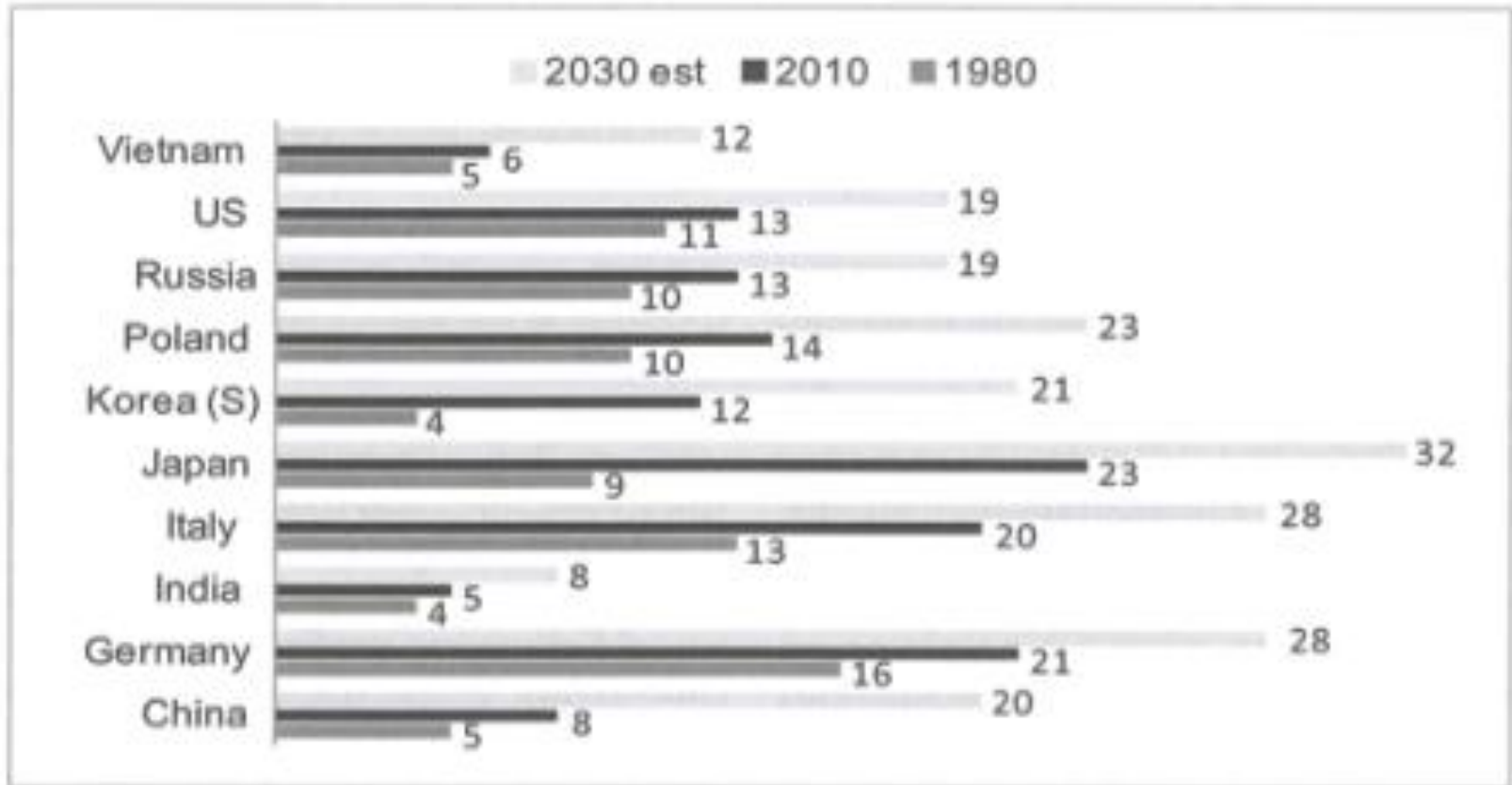
According to Nancy Morrow-Howell and Ada C. Mui,

“By the year 2050, most countries around the globe (with the exception of many in Africa) will have populations where more than 20% of the people are over the age of 65 years; and there will be more people over the age of 60 than under the age of 15 years.

...The age group of 80-and-older is the fastest growing group in the world. ... Fertility rates continue to drop and by 2020, the global fertility rate will dip below the global replacement rate for the first time (Longman, 2010).

The trends create huge challenges to societies faced with providing economic support and health care to the growing older population, while the younger population is growing more slowly.”

Percent of World Population (in select countries) Age 65 or Older



Mental Health Conditions of Aging

- Depression: Higher rates among the frail elderly and the old old. Most frequently undiagnosed and untreated.
- Suicide: Higher rates among the elderly in rural areas
- Dementia: Increasing rates by age above 75 years, with highest rates above 85

Aging in China I

- By 2050, between 25 and 30% of the Chinese population will be over 60 years of age.
- By 65 years of age, most people have between 3 and 4 chronic health problems: e.g. arthritis, high blood pressure, respiratory diseases, chronic gastroenterological problems, diabetes, heart disease, cancer, depression.

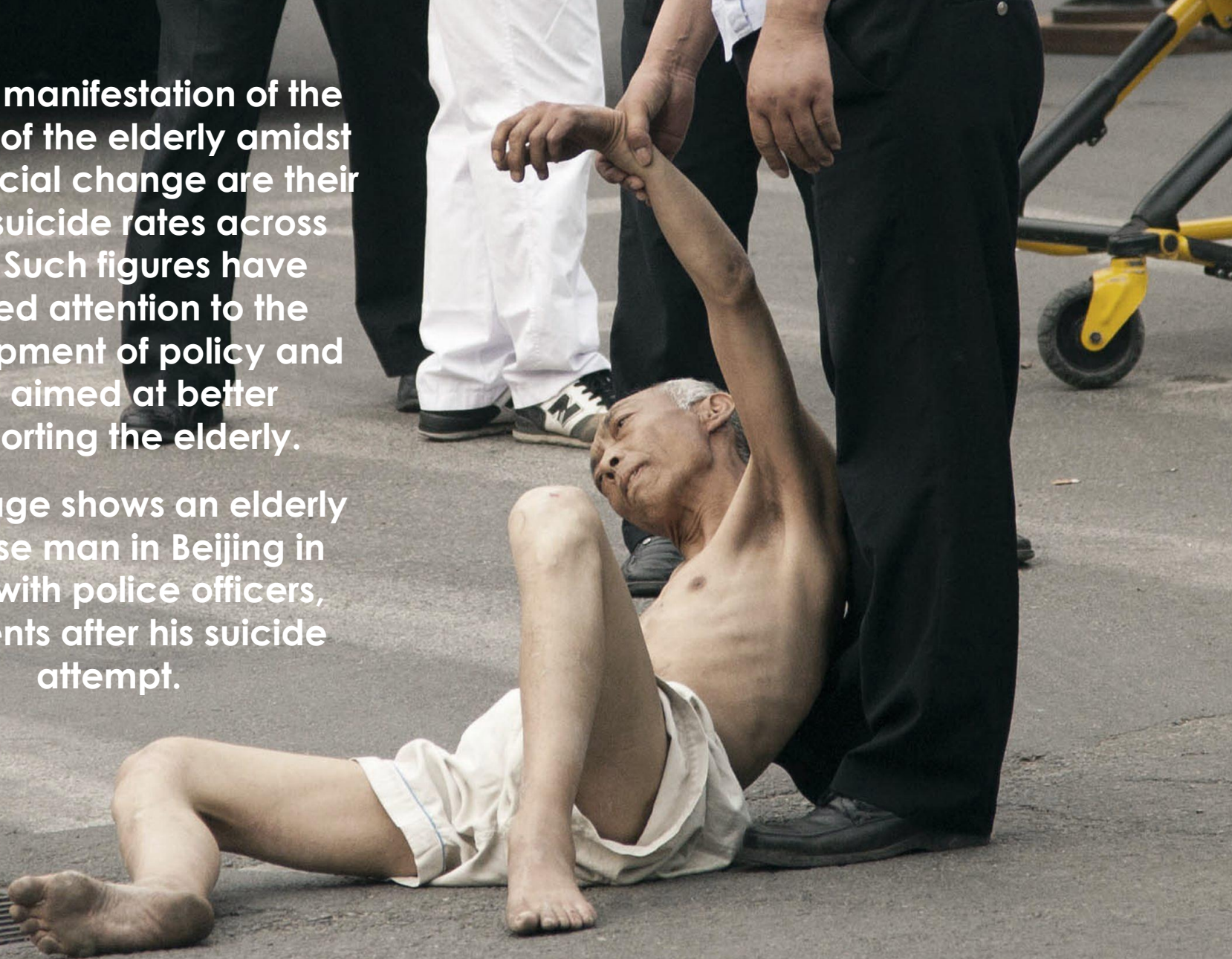


Image: WHO, 2012.

- This is happening at a time in which the social security system is not going to be adequate to meet demand. In particular, the former one child family policy, the increasing number of women in the workforce, and changing values of filiality contribute to worsening the problem of elder support and care. Today there are just over four workers for each retiree but by 2040, there will be 2.0 per retiree.
- There is a growing crisis of elder care. It is accompanied by the search for models of elder care, both public and private.

A stark manifestation of the distress of the elderly amidst rapid social change are their rising suicide rates across Asia. Such figures have spurred attention to the development of policy and law aimed at better supporting the elderly.

The image shows an elderly Chinese man in Beijing in 2011, with police officers, moments after his suicide attempt.



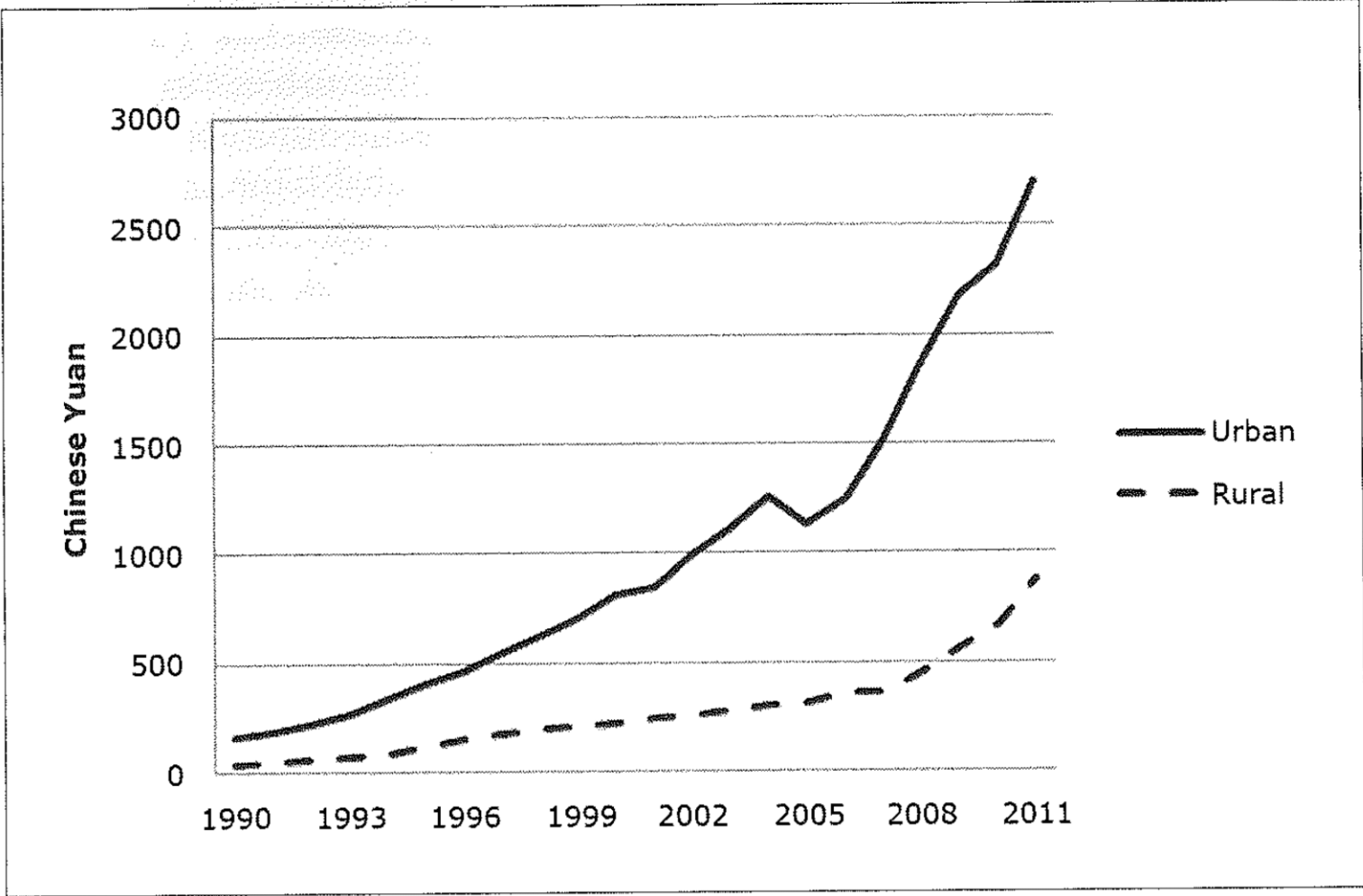
Aging in China II

- Current challenges to high-quality dementia care in China illustrate both the country's wider crisis in elder care and the limitations of its mental health services.
- According to a recent study by Chen et al.,
 - As a result of transformations in social and economic relations, as well as value systems, Chinese families bear the burden of care and frequently struggle to provide dementia care to the elderly.
 - Many experience family members' dementia as shameful and stigmatizing.
 - Dementia care is increasingly devolving to local primary care practitioners, who often lack training and resources for effective responses to the disorder.
 - There is inadequate support for collaborative, multidisciplinary dementia care, particularly in rural settings.

Chen, Shulin, Lisa L. Boyle, Yeates Conwell, Helen Chiu, Lydia Li, and Shuiyuan Xiao. "Dementia care in rural China." *Mental health in family medicine* 10, no. 3 (2013): 133.

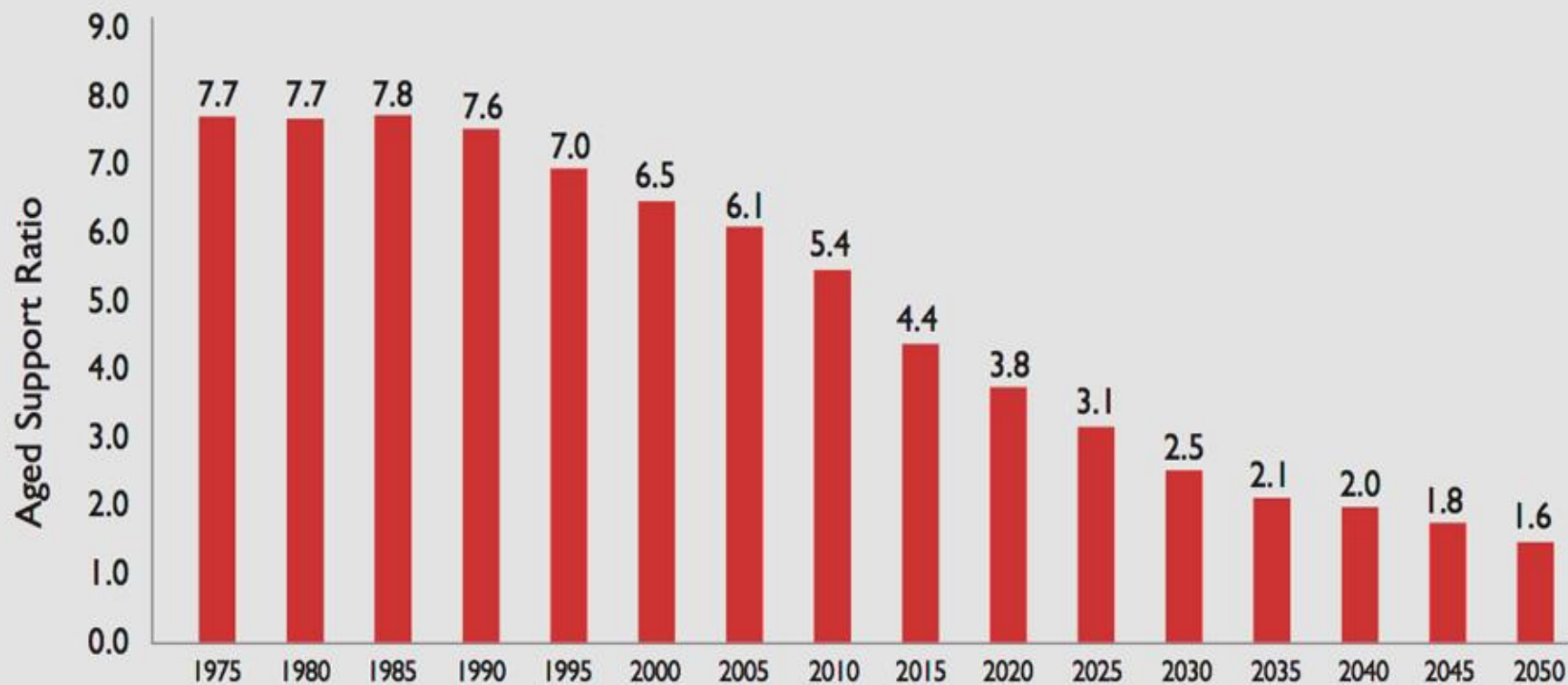
Wu, Yu-Tzu, Carol Brayne, and Fiona E. Matthews. "Prevalence of dementia in East Asia: a synthetic review of time trends." *International journal of geriatric psychiatry* (2015).

Chinese Health Care Expenditure Per Capita, 1990-2011



There will be far fewer working-age adults to support each elder.

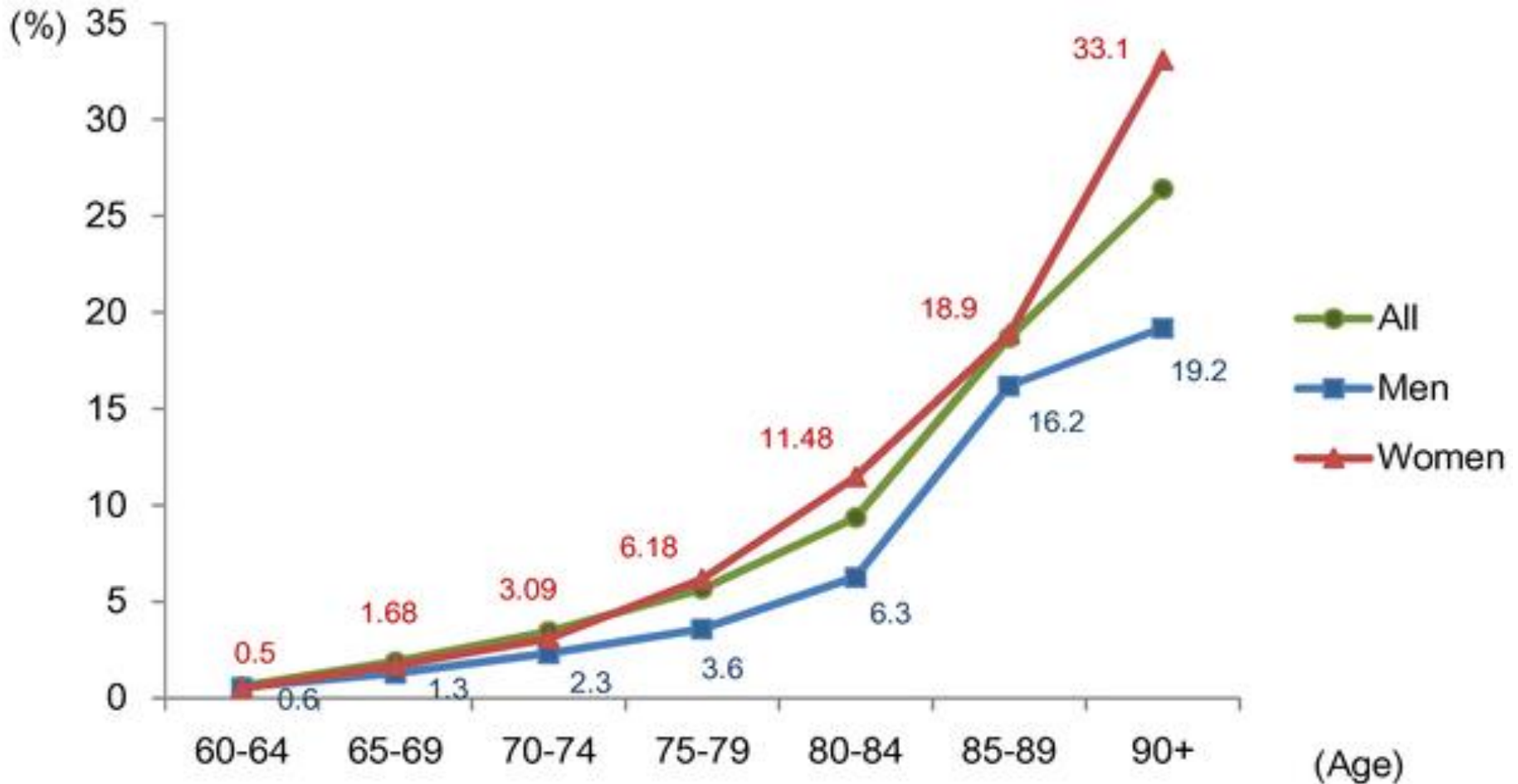
Chinese Aged Support Ratio of Working-Age Adults (Aged 15-59) to Elderly (Aged 60 & Over), 1975-2050



Source: UN (2007)

Figure 14

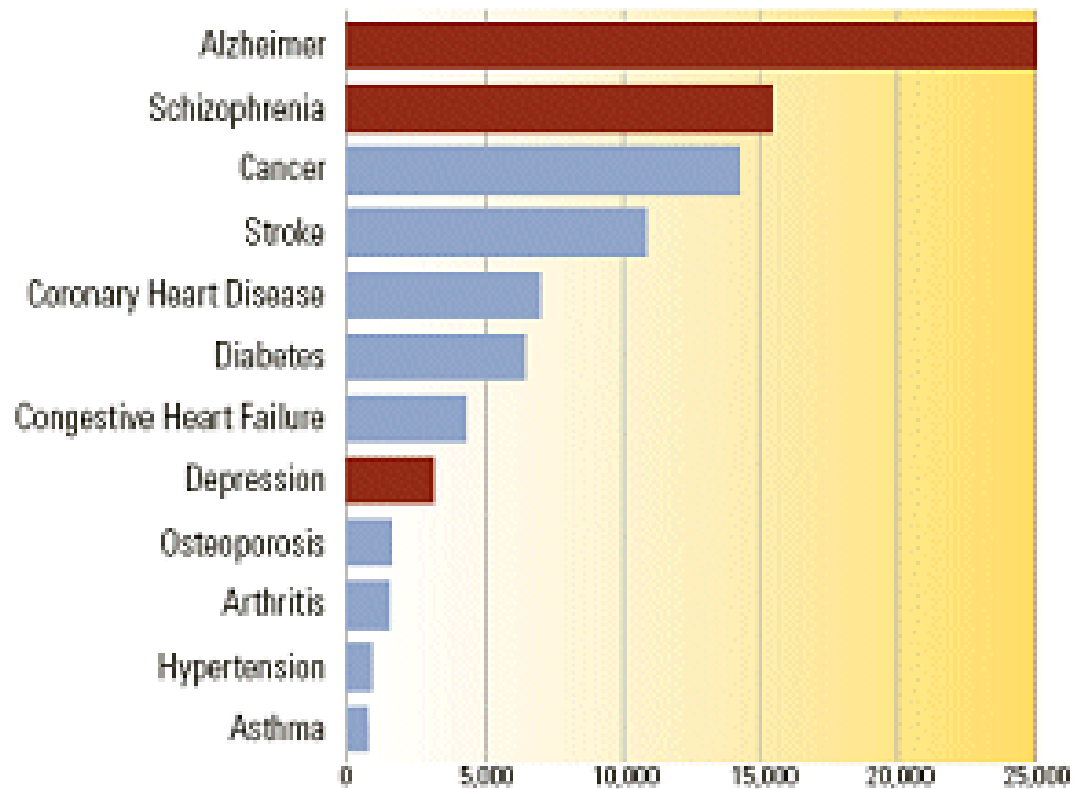
Stratified prevalence of dementia by age groups and gender (China, Hong Kong, Taiwan)



Wu YT, Lee Hy, Norton S, Chen C, Chen H, et al. (2013) Prevalence Studies of Dementia in Mainland China, Hong Kong and Taiwan: A Systematic Review and Meta-Analysis. PLoS ONE 8(6): e66252. doi:10.1371/journal.pone.0066252
<http://127.0.0.1:8081/plosone/article?id=info:doi/10.1371/journal.pone.0066252>

Figure 4.2

Yearly Cost per Patient of Selected Medical Conditions: United States US\$/Patient/Year



Source: WHO, 2003

Aging in China III

- Dementia highlights the challenges that aging poses to health systems across East Asia. According to Wu et al.,
 - While some estimates of growing dementia prevalence are overstated, the elderly in today's East Asia may be at greater "risk of dementia occurrence" due to "adverse early life experiences", such as "poor nutrition", combined with the rapid transformation of lifestyles to ones featuring "smoking, alcohol abuse and high-demanding occupation[s]" as well as heightened risks of "non-communicable diseases (diabetes, vascular diseases and hypertension)". These transformations feature several "known risk factors for dementia and cognitive decline (Norton et al., 2014)"
 - Incentives facing "medical industries, insurance companies and health and social care business[es]" may shape both available prevalence data and policy priorities.

Wu, Yu-Tzu, Carol Brayne, and Fiona E. Matthews. "Prevalence of dementia in East Asia: a synthetic review of time trends." *International journal of geriatric psychiatry* (2015).

Aging in China IV

Descriptive studies of the needs of the frail elderly:

- Isolation due to immobility
- Symptoms such as pain, fatigue/weakness, disturbed sleep, and demoralization/depression
- Desire to be among friends in settings such as tea houses and restaurants, but inability to make this happen
- Respite care for family members

Aging in China V

- Cultural responses:
 - Nurturing life (yangsheng)
 - Nurturing the aged (yang lao)



Opportunities for technology (1)

- Smartphones, sensors, robots, exoskeletons
- Social ecologies of technologies for aging communities and eldercare settings
 - Local settings (institutions and relationships)
 - Home health aides and nursing assistants
 - Training systems
 - Supervision and repair systems
 - Evaluation systems (from needs and acceptance to effectiveness)

Emerging Technologies



"Robo Nurse"



"Robo Bear"



Honda's
"Walking Assist"



Indego



Giraffplus

A-Tie

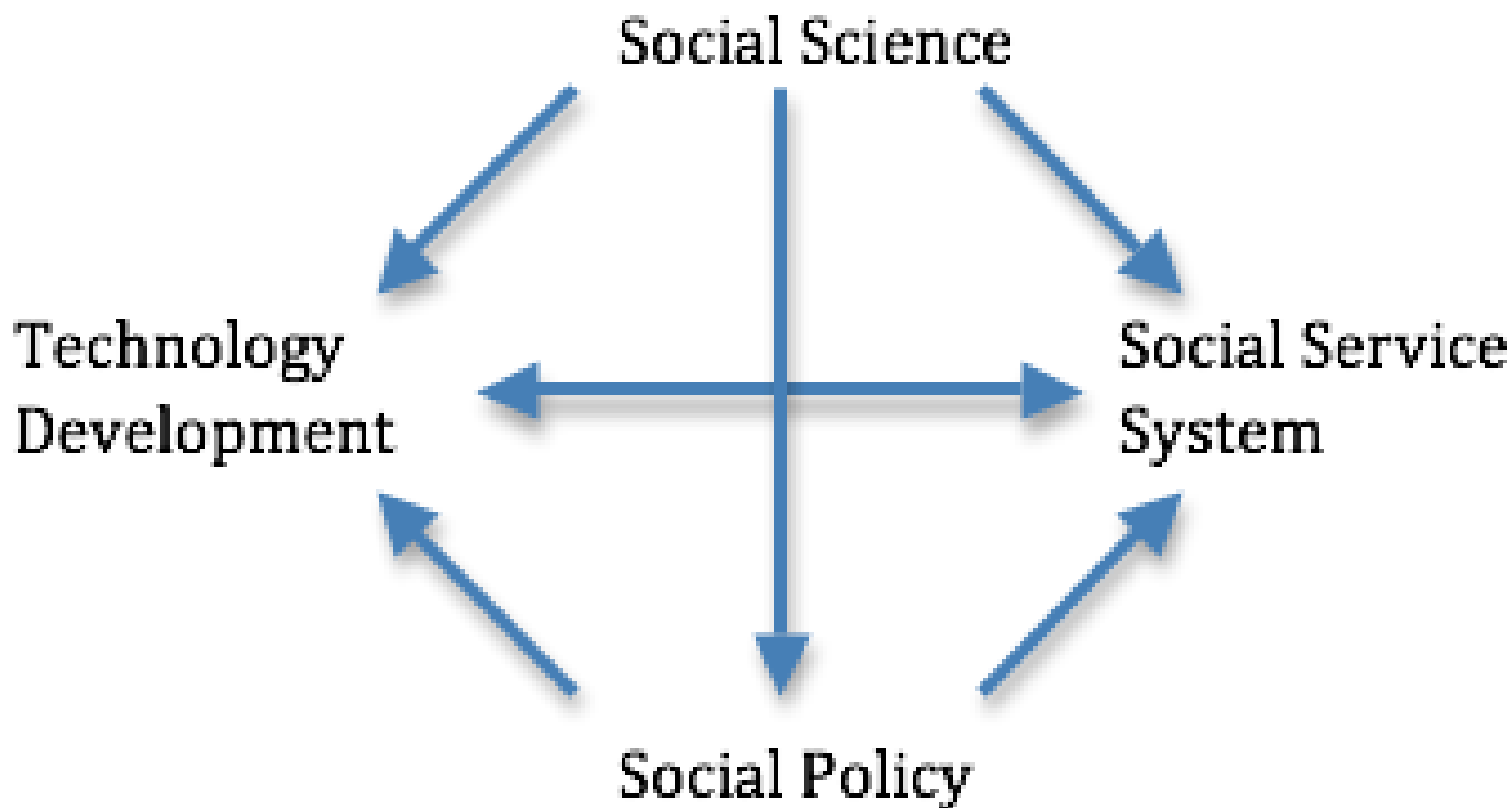


Opportunities for technology (2)

- Policy issues
 - Equity (urban/rural, rich/poor)
 - Workforce development
 - Ethics
- Business and government (global and local)
 - Lower cost
 - Quality control and standards
 - Effectiveness
 - Scalability and transmission

适老科技的社会生态系统(基本要素)

Social Ecology of Technology for Eldercare



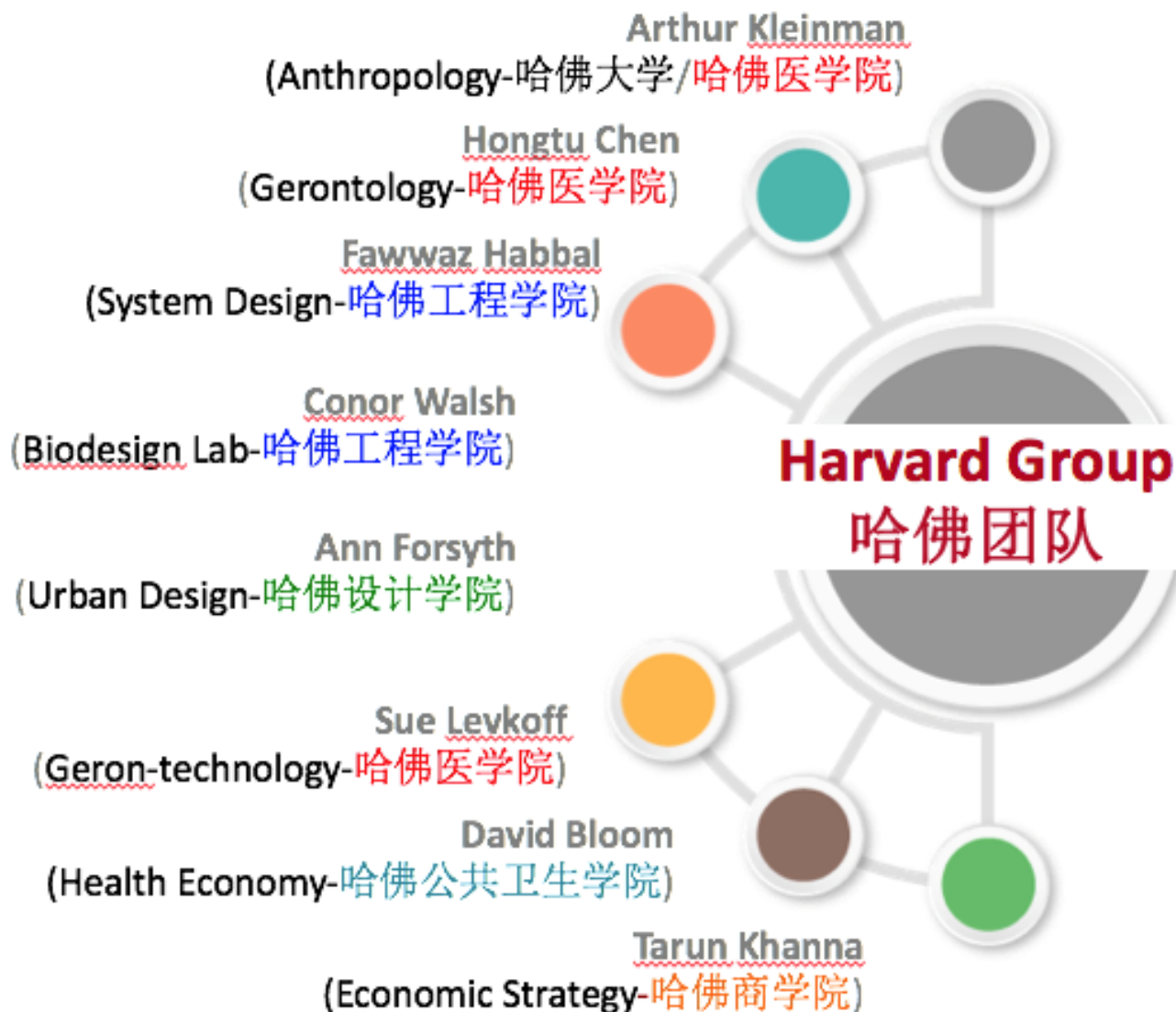
Collaborative possibilities



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JIANGSU INDUSTRIAL TECHNOLOGY RESEARCH INSTITUTE



Collaborative possibilities

- Collaborative research laboratory



- Review and evaluation of global technological innovations
 - evidence base
 - cost effectiveness
 - cultural appropriateness
- Assessment of local situations
 - needs, feasibility, and social systems
 - policy issues, institutions, and ethics

Collaborative possibilities

- Collaborative research laboratory



- Set of recommendations including...
 - Technologies to stimulate advancement of eldercare industry
 - How to transfer socially and culturally suitable and sustainable technology
 - How to provide technology assistance (training, advising, consulting, implementing)
- Scaling up successful social technology systems
 - Hand off to government and businesses
 - Generalization of interventions at local levels among the poor in China