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Challenges of Dementia care in mainland China

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1 Aging population in China

1.1 Statistics on the aging population in China
The UN considers a country to be ageing when 7% of its population is aged 65 or over - the threshold used to be 10% of a population being 60 years old or over. China has entered the aging society by the end of 1999. The 6th national census shows the number of China’s citizens at and above 60 years old had increased to 177.65 million, accounting for 13.26% of the total population. Meanwhile, the number of people at and above 65 had reached 118.83 million, accounting for 8.9% of the total population, by the end of 2010 (National Bureau of Statistics, China, 2010).

Aging population in 9 provinces and cities was more than the average level in 2010, including Chongqing (17.42%), Sichuan (16.30%), Jiangsu (15.99%), Liaoning (15.43%), Shanghai (15.07%), Anhui (15.01%), Shandong (14.75%), Hunan (14.54%), Hubei (13.93%), and Tianjin (13.75%). The number of China’s citizens at and above 60 years old was 12.54% in Beijing, 9.73% in Guangdong. Guangdong’s permanent population row in the first place in China (National Bureau of Statistics, China, 2010).

China’s aging population is increasing rapidly while the country’s birth rate remains low. The population pyramids for China (Figure 1) which are shaped by the fertility and mortality rates indicate high birth and death rates in 1950, but the population is generally older and older on average with a low death rate and a low birth rate. It is estimated that the percentage of China’s aging population will reach 16.7% of the total population in the next five years, and about 30% by 2050. Those over age 65 will likely swell to 330 million by 2050. By the middle of this century, there could be 100 million Chinese over the age of 80 (United Nations.
Population Division, 2011).

1.2 Features of ageing process in China

The ageing process in China has two distinguishing features. First, it has happened at a much faster rate than in other countries. According to UN figures, the ratio of those aged 60 and over across the world rose by 3 percentage points in the 60 years from 1950 to 2010, while in China it increased by 3.8 percentage points in just the 10 years from 2000 to 2010.

Secondly, China is one of a few countries in the world in which the population has aged before becoming rich or even moderately rich. While more than 60% of the world’s ageing nations reached that threshold when their GDP per capita exceeded $10,000, and 30% reached the threshold when their income reached $5,000, China officially became an ageing country when its GDP per capita was less than $1,000. This inevitably means there are more financial constraints when it comes to any potential solutions (王荣欣, 等, 2011).

The rapid population ageing is due to a sharp decline of fertility associated with the one-child policy and increasing life expectancy. China’s unprecedented demographic transformation has been mainly caused by a significant increase in the country’s life expectancy (from 67.77 in 1981 to 74.83 in 2010) (National Bureau of Statistics, China, 2010). China’s one-child policy was imposed by the state in 1980. Average household size in mainland China was 3.13 in 2005. Ratio of working-age adults available to support each elder is declining rapidly. Traditional multigenerational family structure has been changed gradually. In Shanghai, Elderly who live alone have reached 843,700 by the end of 2007. Among them, more than 40% were so-called “empty-nest-family” (王杰, 等, 2007; No authors listed, 2007). Figure 2 shows that “empty-nest-family” have account for 33% of the total 65+ populations.

The sheer number of people entering older ages challenged national infrastructures, particularly health systems, small family size and increasing number of elderly people who thus live alone make the situations of health care service more complicated.

Figure 1. Population pyramid for China: 1950-2100.

Figure 2. Characteristics of family structures of those with elderly in mainland China.
2 Epidemiological data of dementia in mainland China

2.1 Prevalence of dementia in mainland China

China has a largest number of people with dementia in the world which has reached 5.54 million with 1.72 million new cases per year in 2005 (No authors listed, 2007). Increase of elders with dementia is expected to be more than 300% in China between 2001 and 2040 (Ferri CP, et al., 2005). There is no a nationwide investigation of the prevalence of dementia in China. According to the regional survey, the prevalence rate of dementia among the elderly in China has been reported to be around 2.7-7.3% (Zhao Q, et al., 2010; Zhou DF, et al., 2006; 马翠, 等, 2005; 汤哲, 等, 2002; 周玢, 等, 2001; 张振馥, 等, 2001; 唐牟尼, 等, 2001; 周玢, 等, 2001; 赖世隆, 等, 2000). A Delphi consensus study shows that the consensus prevalence estimates for China were very similar to those for Europe and North America (Ferri CP, et al., 2005). The information released by Ministry of Health of China shows that the prevalence of senile dementia in China is 4.2% among the population aged 60 years and over (中华人民共和国卫生部, 2012).

Zhang et al. (Zhang ZX, et al., 2005) investigated prevalence of AD and VaD in 4 regions (Beijing, Xian, Shanghai, and Chengdu) of China (n=34,807). They suggested that the prevalence in persons 65 years or older was 4.8% for AD and 1.1% for VaD after post hoc correction for negative screening errors. A recent study in urban and rural areas of Guangzhou (n=5,662) has shown that the prevalence rate of dementia of AD, VaD and other dementia was 2.43%, 0.85% and 0.19%, respectively. The study showed that the prevalence of dementia in women (4.35%) was significantly higher than that in men (2.21%), and non-education (6.17%) was significantly higher than that of those with elementary education (2.68%) and those with middle or high school (1.41%). The prevalence of dementia increased consistently with age (唐牟尼, 等, 2007). Dong et al. (Dong MJ, et al., 2007) systematic analyzed 24 epidemiological investigations on dementia in mainland China from 1980 to 2004, and suggested that AD and VaD were the two major subtypes of dementia in China. There was a higher prevalence of AD in the illiterate elderly population (3.2%) than in those who received years of education.

Llibre Rodriguez et al. (Llibre Rodriguez JJ, et al., 2008) undertook one-phase cross-sectional surveys of all residents aged 65 years and older (n=14,960) in 11 sites in seven low-income and middle-income countries, and reported that standardized prevalence by 10/66 dementia diagnostic algorithm was 8.0% (95% CI: 6.2-9.8) in Urban China (Xicheng, Beijing, n=1,106) and 4.8% (95% CI: 3.1-6.4) in Rural China (Daxing, n=1,002). Standardized prevalence by DSM-IV dementia criterion was 3.1% (95% CI: 2.0-4.2) in urban and 2.0% (95% CI: 0.8-3.1) in rural. They suggested that 10/66 dementia prevalence was higher than that of DSM-IV dementia and more consistent across sites. As compared with the 10/66 dementia algorithm, the DSM-IV dementia criterion might underestimate dementia prevalence, especially in regions with low awareness of this emerging public-health problem.

The prevalence of dementia and AD among elderly people in suburb may be higher than in Urban. Sun et al. (孙宏贤, 等, 2012) investigated the prevalence of dementia among elderly people aged 60 years and over (n=1,374) in Sheshan town which was located in the south-west suburb of Shanghai and the residents mainly engaged in planting vegetables. The study showed that prevalence rate was 5.4% (95% CI: 4.8%-6.0%) for dementia of all types, 3.8% (95% CI: 3.3%-4.3%) for AD and 1.2% (95% CI: 0.9%-1.5%) % for VaD.

Differences in sampling procedures, data collection methods, and the different diagnostic criteria employed for identifying subjects with dementia are thought to account for most variation in the rates. More research is needed to establish the generalizability of existing data.

2.2 Incidence of dementia

A cohort study in Xi'an (1998-2001, n=2,197) showed that annual incidence rates of dementia, AD and VAD was 0.68%, 0.54% and 0.12% among those of 55 years and over respectively, and was 0.89%, 0.69% and 0.17% in 65 years and over respectively. Age and education, but not gender, were closely related to the occurrence of AD. On the contrary, age, hypertension and stroke were closely related to the occurrence of VaD (周玢, 等, 2005). The incidence of dementia and AD in Shanghai was 0.92% and 0.74% respectively in a 5 years follow-up study among elderly people aged 60 years old and over. Incidence rate of AD increased 1.06 times for every five years (张明园, 等, 1998). The annual incidence rates of senile dementia
dementia was 0.89% among the population aged 60 and over in Xicheng District, Beijing (1997-1999) (Ferri CP, et al., 2002; WHO, 2005). There was no difference between men and women.

3 Health care resources for patients with dementia in China

3.1 Mental health workforce and facilities

China is much less well-resourced in mental health. In 2004, there were 16,103 licensed psychiatrists and psychiatric registrars (1.24/100,000 population) and 24,793 licensed psychiatric nurses (1.91/100,000 population). The number of licensed psychiatrists and psychiatric registrars increased to 20,201 by 2011, accounted for 1.0% of the total number of licensed doctors. Relative to the global average mental health workforce, mental health human resources in mainland China are quite limited. Meanwhile, the vast majority of mental health professionals are psychiatrists or psychiatric nurses, with few clinical psychologists and social workers, and no occupational therapists. The shortage of skilled mental health professionals represents one of the most critical issues facing the mental health system currently.

In 2004, there were 557 psychiatric hospitals. Among them, 359 (64.5%) had 100 or more beds, and 44 (7.9%) had 500 or more beds. The total number of psychiatric beds was 129,314 (1.00/10,000 population). The number was increased to 213,877 by 2011, accounted for 5.8% of the total number of hospital beds in Health Institutions. However, it was significantly lower than the global average of 4.36/10,000 psychiatric beds. (WHO, 2005; Ministry of Health of China, 2012; Liu J, et al., 2011).

At present, only the Grade A tertiary general/psychiatric hospital can provide comprehensive diagnosis and treatment for AD patients. Only a few hospitals established specialized Memory Disorder Clinic, estimated below 50. Specialist mental health services remain the predominant component of the system. Community service is lack of capability of dementia care. Community Health Service Centers do not have the ability to provide preliminary screening and special nursing for patients with cognitive disorder. A few nursing homes can accept late-stage patients. In-home care providers appeared in big cities like Beijing and Shanghai. NGO/NPO is small scale. Therefore, mental health service provision has become primarily hospital-based. Patients can access tertiary psychiatric hospitals directly, bypassing the primary and secondary health care levels. This partly reflects the disproportionate concentration of health resources in large cities (Liu J, et al., 2011). Furthermore, there has not any form of community mental health service in the majority of rural areas, except some pilot areas. The elders in countryside are facing more challenges (包江波, 等, 2006).

3.2 Psychogeriatric workforce and facilities

Not until 1982, China has its first Psychogeriatric ward. Currently, the majority of provinces and cities in China have set up a psychogeriatric ward and outpatient clinic. In-patients were mainly dementia and schizophrenia. According to a survey of geriatric psychiatry service in 2004, there were 66 facilities have set up geriatric psychiatry departments with 3,799 beds among 136 responded hospitals from 260 prefectural level mental hospitals. Shanghai occupied the most beds (0.22/100,000 aged population). The lowest bed utilization rate was in Gansu province (35%), and the highest is in Beijing, Shanghai and Guangdong province (110%). Obviously, the psychogeriatric beds were lower than the national average of psychiatric beds.

There were 383 doctors and 952 nurses in geriatric psychiatry departments with significant regional disparity. Shanghai had the most doctors in geriatric psychiatry departments (0.015/100,000 aged population) and Beijing had the most nurses in geriatric psychiatry departments (0.045/100,000 aged population). Doctor-nurse ratios were around 1:5–2:3 (薛海波, 等, 2006). Beds and personnel of geriatric demanding are far more than the providing.

3.3 Long-term care institutions

China has significant shortage of community health resource. Currently, there is short of 10 million caregivers for seniors with disability in the country, not to mention the dementia care. At the time, senior Housing just started in several big cities. On the contrary, the demand for long-term care of elderly people is increased quickly with the rapid increasing of aging population.

Zhu et al (朱微微, 等, 2010) investigated the long-term care service delivery in Beijing in 2009. There are two kinds of long term care institute
LTCI, public and private. At present, public LTCI is the main body of the market. While, private LTCI is in rapid development recent years. Based on related regulations in Beijing, the specific certificates are required for professional and technical staff working in LTCIs. And non-technical staff also be supposed to subject to specific training and be qualified through local examination. The study showed that the doctors and nurses in all participant LTCIs had professional Certificates, but qualified nursing assistants were limited in private and rural LTCIs. Although there was lack of national standard for LTCI, large scale LTCIs tended to show higher quality than small LTCIs. Some of rural LTCIs showed poor service quality and its basic sanitation was difficult to meet the requirements. Most of the facilities asked residents to live independently, and refused to accept patients with dementia. Only a few high quality LTCIs were willing to accept elderly with dementia, but for those with high quality, waiting time was quite long.

Meanwhile, there is no long-term care insurance and social/ commercial insurance programs related to dementia care in China. Obviously, long-term care is still in underdevelopment level, can’t meet demand of elderly dementia.

4 Nursing research on dementia in mainland China

To provide a comprehensive description on the progress of research on dementia care in mainland China, the articles about dementia which have been published in peer-reviewed nursing journal in Chinese have been reviewed. The literature was sourced from China National Knowledge Internet (CNKI) database (1994- ). Searches were performed using Journal “*Nursing*” AND keyword “dementia” OR “Alzheimer’s disease” (fuzzy matching).

There are 286 articles published in 20 Chinese nursing journals. The first article was published in *Nursing Foreign Medical Science* in 1995. The authors reviewed foreign literatures about dementia care, and introduced them into China. The articles about dementia gradually increased since then, and reached the first peak at 2006 (Figure 3). The probably reason is that the 20th International Conference of ADI in 2004 aroused attentions from nursing researchers.

All the articles has been classified into 15 Topics: Non-pharmaceutical intervention (n=55), About caregivers (n=49), Clinical experiences (n=40), Home care (n=27), BPSD (n=24), Physical functions (n=22), Nursing technic procedures (n=12), Psychological function (n=11), Concomitant with acute disease (n=10), Social function (n=10), Patient safety (n=9), Risks factor of dementia (n=8), Knowledge of medical staff (n=6), Policies (n=2), and Drug (n=2).

The “Clinical experience” subset includes articles written by clinical nurses who shared their experience in dementia management or cases care with less research design. The “Nursing technical procedures” subset includes articles related to care of gastric intubation, nasointestinal intubation, maintenance hemodialysis, or tracheostomy on patients with dementia, etc. The “Concomitant with acute disease” subset articles about caring for dementia patients suffering aspiration pneumonia, lower limb fractures, subdural hematoma, or other complications.

Comparing articles published in 1996 to those in 2012, there are two obvious trends. In 2012, articles about “Nursing technical procedures” increased, and those about “Clinical experience” decreased. Although dementia is a chronic disease, patients may undergo some acute complications resulting in hospitalization. As a low level of evidence, clinical experience about dementia will gradually not be accepted by core Chinese
nursing journals. The highest cited article is about patient safety at home which was published in Chinese Journal of Nursing in 2004. The time cited is 79. The probably reason is that home care still remain the predominant in dementia care, due to the limited community health care resource.

In China, exponentially increased number of people with dementia combined with rapid population ageing and enormous elderly population has become one of the major challenges for health care systems. Low awareness of dementia as an illness, inadequate qualified professionals and financial resources, inadequate training for formal caregivers, and a lack of support for informal caregivers suggested that health care system and policies on dementia remains to be well-developing and further formulated and planned. Nursing researches on dementia suggests that, although we have achieved progress with dementia care during a recent decade, dementia care in China is still in its initial stage. More efforts should be directed toward effective nursing interventions and family caregivers support. Nurses can and will play an important role in development of health care system for dementia.

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