

# THE HEALTH OF ELDERLY CHINESE LIVING IN THE COMMUNITY

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## ABSTRACT

A stratified random sample of 1000 elderly Chinese was drawn from the electoral register of three constituencies, namely Tiong Bahru, Henderson and Bukit Merah. It was only possible to interview 612 subjects. The questionnaire included social resources, activities of daily living, mental health and physical health.

The majority of elderly in the sample (79% young-old and 73% in old-old) had good or mildly impaired social resources, meaning that social relationships were satisfactory and at least one person would take care of him/her indefinitely on for short term. On activities of daily living, 2.3% of the young-old and 14.5% of the old-old were moderately or severely impaired and needed help daily. About 97% of the young-old and 87% of the old-old had good or mild impairment of physical health. Most subjects were in good mental health (92.2%). The prevalence of dementia was 1.8% and depressive disorder 4.6%. Senile dementia was more prevalent in the old-old (2.8%) than the young-old (0.5%).

**Keywords:** Health, Elderly Chinese

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## INTRODUCTION

The growing proportion of elderly people in Singapore has significant social and economic consequences (1). The elderly is often categorized into two subgroups, namely, the 'young-old' (65 to 74 years) and the 'old-old' (75 years and above). Comparing the two subgroups, the proportion of the 'young-old' will decline from 78.4% in 1987 to 70.9% in 2030, but the 'old-old' will increase from 21.6% in 1987 to 29.1% in 2030. This has important implications as the 'old-old' will need more health and social services.

The national survey of senior citizens (2) in 1982 encompassed a wide scope including family life, finance, health care and employment. This study focused mainly on health and used a standardised health assessment schedule, the Older Americans Resources and Services (OARS) from Duke University (3). The OARS schedule provides a quantifiable measure of various aspects of health and this permits comparison between communities, countries and in the same cohort over a time interval.

The aims of this research were:

- (1) To assess the social resources, activities of daily living, mental health and physical health of elderly Chinese.

- (2) To compare the health of the 'young-old' and 'old-old'.

## METHODOLOGY

The study was confined to three predominantly Chinese constituencies of Tiong Bahru, Bukit Merah and Henderson. The three constituencies were selected mainly because of their proximity to the Singapore General Hospital, where the Department of Psychological Medicine, National University of Singapore, was situated in 1985. Moreover, within these three constituencies there are two day centres for the elderly namely the Apex Day Centre and Henderson Social Centre. Subjects selected for the research could be assessed in these centres.

The Election Department in the National Registration Office of Singapore maintains a record of Singapore identity-card holders in every electoral constituency. The Election Department was contacted and a random sample of 1000 elderly Chinese 65 years and above was selected from the electoral roll. The selection of persons was based on a stratified design and the variables for stratification were sex and age. The sampling procedure ensured that each age group and sex was proportionally represented as in the 1980 Census of Population.

Initial contacts with the subjects in their homes were made by a part-time mental health nurse, who had previous experience working with the elderly. In the first interview, the nurse also arranged for an appointment for a mental health assessment and physical examination at the Apex Day Centre or the Henderson Social Centre. Twenty-five subjects were unable to go to the day centres because of illness and had to be examined in their homes.

The health assessment consisted of an interview with the elderly subject using a semi-structured questionnaire and a physical examination. The questionnaire included personal data, social resources, activities of daily living, mental health and physical health. An important area not included was the economic resource or financial status

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**Table I**  
**Sample of Elderly Subjects**

Total Sample	Number 1000
Deceased	23
Hospitalized	10
Transferred to institutional homes	6
Returned to China	18
Shifted residence	110
Not contactable e.g. working, on vacation	127
Refused to be interviewed	31
No such person	47
Others e.g. incorrect address, wrong date of birth	16
Interviewed	612

of the elderly. This had been thoroughly surveyed in the national survey and a repetition was deemed unnecessary.

The social resources questionnaire examined social relationships with family and friends, availability of help if needed, loneliness and visits by relatives and friends. The overall rating of social resources was divided into 4 categories, i.e. good, mildly impaired, moderately impaired and severely impaired (Appendix 1).

Activities of daily living questionnaire (ADL) measured levels of independence in basic activities. The eight activities of daily living asked were shopping, walking, cooking, dressing, light chores (e.g. washing and sweeping), bathing, feeding and toileting. Their abilities to perform these tasks were graded 1 to 4 – from total independence to dependence. The overall performance in ADL was divided into 4 categories, i.e. good, mildly impaired, moderately impaired and severely impaired (Appendix 2).

The Geriatric Mental State schedule (GMS) by Copeland et al (4, 5) was used in the mental health assessment. The GMS is a semi-structured standardized interview instrument developed by the Anglo-American team in the London-New York study on the elderly. The GMS has been shown to be reliable between trained interviewers and can also provided a standardized psychiatric diagnosis with the computerized system, Automated Geriatric Examination for Computer Assisted Taxonomy (AGECAT).

A physical examination was conducted for each subject. Those who could not come to the day centres because of ill health were examined at home. The physical health rating was from a scale of 1 to 4 corresponding to good physical health, mild, moderate and severe physical impairment. The classification depended on whether the illness or disability was painful, life threatening and needed extensive medical treatment (Appendix 3).

## RESULTS

### Characteristics of the Sample

The subjects were divided into two age groups – 65 to 74 years and 75 and above. The sample interviewed reflected closely the proportion of elderly people in the

1980 Census of Population in Singapore. There was a slight preponderance of females (56%) over males (48%). The sex ratio was almost similar in the young-old but in the old-old the ratio was 2 males: 3 females. Analysis of the marital status of the sample showed that in the young-old, 6.9% were single, 56% married, 35.4% widowed and 1.7% divorced or separated. In the old-old group, 9.4% were single, 33.3% married, 56.1% widowed and 1.2% divorced or separated.

The majority of subjects were not working – 83.3% in the young-old and 92.7% in the old-old group. Only 7.6% of the young-old and 1.1% of the old-old were still working full time usually as clerks, domestic servants, hawkers, shop-assistants, etc. Another 9.1% of the young-old and 6.1% of the old-old worked part-time.

There are different criteria to define social class and a common method of classification is according to occupation. Most elderly people are retired and classification will be according to previous occupations. For housewives, classification of social class is according to their husband's occupation. In the sample, 14.2% of young-old and 11.15% of old-old were in social class I and II. In social class III there were 15.2% of young-old and 18.4% of old-old. The majority of elderly people in the three constituencies belonged to social class IV and V – 69.7% in the young-old and 70.5% in the old-old.

### Social resources

Over 80% of the elderly were living with their family members, e.g. spouse or children. Only 5.1% of young-old and 7.2% of old-old were living alone. Another 8.6% of young-old and 12.3% of old-old were living with friends. The majority of the elderly had good or mildly impaired social resources meaning that social relationships were satisfactory and at least one person would take care of him (her) indefinitely or for short term. About 20.6% of young-old and 26.5% of old-old had moderate or severe impairment of social resources – their social relationships might or might not be satisfactory and help was available for only short term or not at all. There was no statistical difference between the two groups.

### Activities of daily living

Comparing the two groups, 2.3% of the young-old and 14.5% of the old-old were moderately or severely impaired and needed help every day (Table III). About 53.3% of the old-old and 67.1% of the young-old could perform all the activities of the daily living without assistance, and 32% of the old-old and 30.6% of the young-old required some assistance. The difference in performance rating was very significant ( $p < 0.001$ ), indicating that the old-old were less independent and more needed assistance daily.

### Physical health

The physical health of elderly people in the sample was generally good (Table IV). In the young-old group, 54.4% were in good physical health and another 42.6% had minor disabilities. In the old-old, 48.8% were in good health and 38.3% had minor disabilities. About 3% of young-old and 12.9% of old-old had moderate or severe impairment of physical health. Comparing the two groups, the physical health of the old-old was more impaired ( $p < 0.001$ ).

The disabilities of the 253 elderly with mild impairment

**Table II  
Social Resources**

Age Group	Good	Mildly Impaired	Moderately Impaired	Severely Impaired	Total
65-74	272 (63%)	71 (16.4%)	58 (13.4%)	31 (7.2%)	432 (100%)
75 & above	109 (60.6%)	23 (12.8%)	23 (12.8%)	25 (13.8%)	180 (100%)

$\chi^2 = 7.53$   
 $df = 3$   
 $p = ns$

**Table III  
Activities of Daily Living**

Age Group	Good	Mildly Impaired	Moderately Impaired	Severely Impaired	Total
65-74	290 (67.1%)	132 (30.6%)	9 (2.1%)	1 (0.2%)	432 (100%)
75 & above	96 (53.3%)	58 (32.2%)	19 (10.6%)	7 (3.9%)	180 (100%)

$\chi^2 = 30.22$   
 $df = 3$   
 $p = <0.001$

**Table IV  
Physical Health**

Age Group	Good	Mildly Impaired	Moderately Impaired	Severely Impaired	Total
65-74	235 (54.4%)	184 (42.6%)	12 (2.8%)	1 (0.2%)	432 (100%)
75 & above	88 (48.8%)	69 (38.3%)	15 (8.4%)	8 (4.5%)	180 (100%)

$\chi^2 = 25.51$   
 $df = 3$   
 $p = <0.001$

in physical health were:

	Frequency of cases
1. Musculo-skeletal disorder eg. arthritis, myalgia	20.1%
2. Vision or hearing problem	14.5%
3. Cardiovascular disorder eg. hypertension, heart disease	12.2%
4. Diabetes mellitus	9.0%
5. Respiratory disorder eg. bronchitis	2.8%
6. Gastritis or peptic ulcer	2.0%

These disabilities of the 36 elderly with moderate or

severe impairment in physical health were:

	Number of cases
1. Stroke	15
2. Heart diseases	8
3. Arthritis	4
4. Cancer	4
5. Renal failure	2
6. Chronic bronchitis	2
7. Parkinson's disease	1

The majority of elderly were mobile – young-old 95.5% and old-old 83.3%. Of those who needed some assistance, eg. walking with stick or wheelchair, 4.6%

were in the young-old group and 15% in the old-old. Only 4 subjects were confined to bed – 3 in the old-old and 1 in the young-old.

### Mental health

In the mental state assessment of the 612 subjects, 564 subjects (92.2%) were in good mental health. There were 11 cases of dementia, 28 depressive disorder, 6 anxiety neurosis and 3 paranoid states. The prevalence of mental disorders was 7.9% with dementia 1.8%, depressive disorder 4.6%, anxiety neurosis 1% and paranoid states 0.5% (Table V).

The prevalence of senile dementia was higher in the old-old (2.8%) than the young-old (0.5%). For multi-infarct dementia the prevalence was almost similar in both groups (Table VI). However in depressive disorder, the prevalence was higher in the young-old (5.3%) than the old-old (2.7%).

**Table V**  
**Mental Health**

Diagnosis	Number of Subjects	Prevalence (%)
Normal	564	—
Depressive disorder	28	4.6
Dementia	11	1.8
Anxiety neurosis	6	1.0
Paranoid states	3	0.5
Total	612	7.9

**Table VI**  
**Prevalence of Dementia and Depressive Disorder**

Age Group	Senile Dementia	Multi-infarct Dementia	Depressive Disorder
65 - 74	0.5%	0.7%	5.3%
75 & above	2.8%	0.6%	2.7%

### DISCUSSION

The social resources of the majority of the elderly (77%) were good or mildly impaired. They could rely on a family member, usually the son or daughter to take care of them indefinitely or for short term. The main social support of the elderly was still the family and very few relied on friends or neighbours. Visits by relatives were regular but 19% complained of loneliness. Only 23% had unsatisfactory social relationships and were uncertain about availability of care – long or short term. Many of

these with moderate or severe impairment of social resources were single or widowed and had no one to turn to in time of need.

In the young-old 13% lived alone or with friends – this is similar to the national survey of senior citizens (2). In the old-old 7% lived alone, as in the national survey, and 12.3% lived with friends, which is higher than national survey of 8%. The majority of those who lived alone or with friends were the unmarried immigrants from China. About 14% of the sample were working either full-time or part-time and most of them were from the lower social class (IV or V) who had to continue working for financial reason.

In general, most of the elderly in the survey were in satisfactory physical health – 53% had no significant illness and 41% had only minor disabilities like musculo-skeletal problems, hypertension, diabetes mellitus, poor vision or hearing, etc. Only 6%, mainly in the older age group, had one or more major disabilities like stroke, heart disease, cancer etc. About 94% of the elderly were able to live independently and needed little or no help in the essential activities of daily living. The more dependent elderly were those subjects with major physical disabilities.

Compared with other studies in the United Kingdom (6, 7) and the United States (8) the overall prevalence of mental disorders in elderly Chinese in Singapore is low. In general the difference in prevalence rates are less marked in dementia but greater in depressive disorder. Factors contributing to variation in prevalence rates include sample size, interview instrument and criteria of diagnosis. Surveys on the epidemiology of dementia in elderly people living in the community using the GMS schedule, had been conducted in the cities of New York and London. The prevalence rate of dementia in New York was estimated as 4.9% and London 2.3% (8) – both cities had higher rates than Singapore. For depressive disorder the rate was higher for the young-old (5.3%) than the old-old (2.7%). In the New York-London survey, the prevalence of depression in New York as 13% and London 12.4%.

Epidemiological research is valuable to provide data for future planning of health and social services. Without the basic data it will be difficult to plan for the appropriate levels and types of services required. For example, knowing the prevalence of dementia in elderly people in Singapore, it is possible to estimate the number of cases in the total population and the extent of the problem in the near future. Taking the prevalence of dementia as 1.8%, the total number of cases in Singapore in 1985 would be 2550. Projecting for the years 2000 and 2030, the estimated number will be 4100 and 12,400 respectively. The rising tide of dementia and the care of these patients will pose a great challenge to the health service.

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### APPENDIX 1

#### Social Resources Rating Scale (Adapted from OARS)

1. Good social resources  
Social relationships are satisfactory and at least one person would take care of him (her) indefinitely.
2. Mildly impaired  
Social relationships are unsatisfactory but at least one person would take care of him (her) indefinitely.  
OR  
Social relationships are satisfactory and only short term help is available.
3. Moderately impaired  
Social relationships are unsatisfactory and only short term help is available.  
OR  
Social relationships are satisfactory; but help would only be available now and then.
4. Severely impaired  
Social relationships are unsatisfactory, and help would only be available now and then.  
OR  
Social relationships are at least satisfactory or adequate; but help is not even available now and then.

### APPENDIX 2

#### Performance Rating Scale for Activity of Daily Living (Adapted from OARS)

1. Good ADL capacity  
Can perform all the Activities of Daily Living without assistance.
2. Mildly impaired ADL capacity  
Can perform all but one to three of the Activities of Daily Living. Some help is required, but not necessarily everyday.  
Can get through any single day without help.
3. Moderately impaired ADL capacity  
Regularly requires assistance with at least four Activities of Daily Living. Needs help each day but not necessarily throughout the day or night.
4. Severely impaired ADL capacity  
Needs help throughout the day and/or night to carry out the Activities of Daily Living.

### APPENDIX 3

#### Physical Health Rating Scale (Adapted from OARS)

1. In good physical health  
No significant illness or disabilities.
2. Mildly impaired  
Has only minor illnesses and/or disabilities which might benefit from medical treatment or medical treatment or corrective measures.
3. Moderately impaired  
Has one or more illness or disabilities which are either painful or which require substantial medical treatment.
4. Severely physically impaired  
Has one or more illnesses or disabilities which are either severely painful or life threatening, or which require extensive medical treatment.