



● **Economic Effects on the Onset of ADL Disability**
● **among Chinese Oldest-old**

● **Jiang,
Cheng**

China Center for Economic Research, Peking University

✉ jiangcheng@pku.edu.cn

Acknowledgements

This work is supported by the Max Planck Institute for Demography Research.

I would sincerely thank Dr. Zhang Zhen and Dr. Li Qiang for their valuable suggestion in this paper.

Furthermore, I should especially appreciate the help from Pro. Zeng Yi ,and it is he who leads me to the field of demography.

Of course all the errors in this work are my own.

Abstract

This work touches the surface of the economic issue of disability for the oldest old in China. Based on the unique data from a sub-sample of the first wave of CLHLS, we find the most risky oldest old into disability before age 90 are those with spouse but still need financial supports from their children. Education plays a very important role for active ADL capacity for the oldest old in low economic status. But we don't find any gender differences for our economic factors.

1, Introduction

- ✓ less work aiming to explore the effects of economic factors on ADL disability
- ✓ Without many exceptions, only a small number of researchers have put their study emphasis on the oldest-old (defined as age 80 +), let alone the oldest people in the developing country.

1, Introduction

- ✓ However, as Zeng et al (2003) pointed out, the number of oldest old in China will climb from 13 million in 2000 to about 32, 51, 76 and 114 million in 2020, 2030, 2040 and 2050, respectively, under the medium mortality assumption.
- ✓ give much advice to the current younger generation for preparing their later life

1, Introduction

- ✓ The determinants of disability for oldest-old in the literature includes: incomes, education, gender, cognitive capacity, marital status, age, living arrangement etc.
- ✓ The purpose of this study is to describe the associations of economic factors, under the controlling of other social or demographic variables, with ADL capacity in Chinese oldest-old.

2, Data and Methodology

Chinese Longitudinal Healthy Longevity Survey (CLHLS), including the 1998 baseline survey and 2000, 2002 follow-up survey (see Zeng et al.2001 for detailed information on the sample design)

Extensive information was collected on health status and indicators of healthy aging and the supplementary demographic, socioeconomic, and environmental questions.

2, Data and Methodology

The 1998 baseline survey contains 9,093 oldest old respondents.

As has been done in previous studies (Zeng et al. 2002), persons who reported age 106 + at 1998 survey are excluded from this study due to insufficient information for us to validate their reported extremely high age.

In order to control for disability, we drop those disabilities in 1998 survey. Also after removing the individuals who are younger than 80 and cases where the key variables are missing, our study sample contains 893 individuals with longitudinal data..

2, Data and Methodology

Table 1, the sample in this analysis

individuals in 1998 survey	9093
<i>minus</i> (1) younger than 80	134
(2) older than 106	154
(3) disable in 1998 survey	3273
(4) lost to follow up in 2000 survey	547
(5) cases with the missing variables	92
individuals in this analysis	4893
died before 2000 survey	1473
still alive at 2000 survey	3420
lost to follow up between 2000-2002 survey	279
died before 2002 survey	593
still alive at 2002 survey	1664

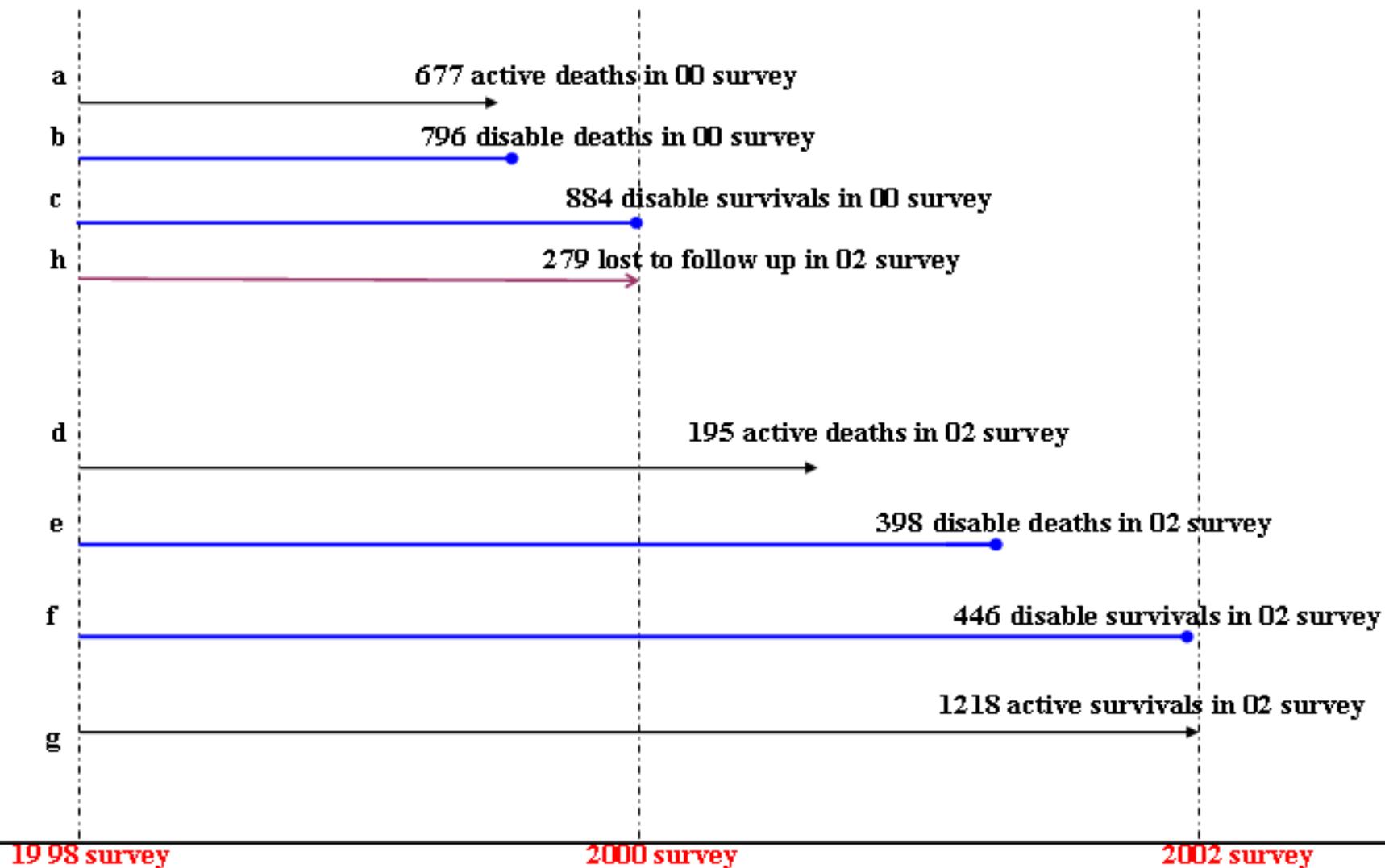
Measurement of the disability

in this article, ADL disability is defined as self-reported difficulty with any following ADLs items: (a) bathing, (b) dressing, (c) eating, (d) indoor transferring, (e) toileting, and (f) continence.

To avoid problems of complications and small sub-sample sizes in Model estimation, we simply dichotomized the ADL functional capacity into “active” (no ADL limitation) and “disable” (at least one ADL limitation).

An individual is considered “ADL disability” if he/she moved from no ADL limitation at 1998 survey to at least one ADL limitation at 2000 survey, 2002 survey or before dying.

Figure 1, the information of disability/activity for the subgroups in the sample



Economic factors

✓ The first is the primary source of financial support, with three levels: economic independence, from child, and from government or other relatives.

✓ We measure the frequency of eating meat as the proxy for the oldest-olds' economic status on a three-level ordinal scale: almost everyday, occasionally and rare/never. Each answer corresponds with the high, medium and low level of economic status, respectively

Controlling variables

✓ Four time-varying factors

current residence place (urban or rural),
current living arrangement (with household or not),
current marital status (with spouse or not),
current MMSE (impaired or normal).

✓ Fixed factors

main occupation at age 60 (self-employ or not)
educational attainment (illiteracy or not)
gender
five-year age group

Analytic strategies

- ✓ we conduct studies of different age groups and then analyze men and women separately in examining gender differences in the magnitude of the relationships between socio-economic characteristics and ADL capacity.
- ✓ All possible two-way interactions were tested
- ✓ a piecewise-constant proportional model. Exposure is measured in months, starting at the 1998 first survey and continuing until the censoring, death or 2002 survey.

Descriptive information of variables and ADL disability

variables		# of obs.	%	% disable (1)
	total	4893	100	51.85
current main source of financial support	economic independence	965	19.72	42.59
	from children	3506	71.65	54.11
	from government or others	422	8.62	51.18
current eco-status	high	1483	30.31	48.01
	medium	2558	52.28	53.01
	low	852	17.41	53.52
eco-status at 60	high	635	12.98	52.28
	medium	2356	48.15	49.53
	low	1902	38.87	53.89

Note: An individual is considered “ADL disability” if he/she moved from no ADL limitation at 1998 survey to at least one ADL limitation at 2000 survey, 2002 survey or before dying.

Figure 2,
Risk relative to economic independence, with spouse
(current main financial resource*current marital status)

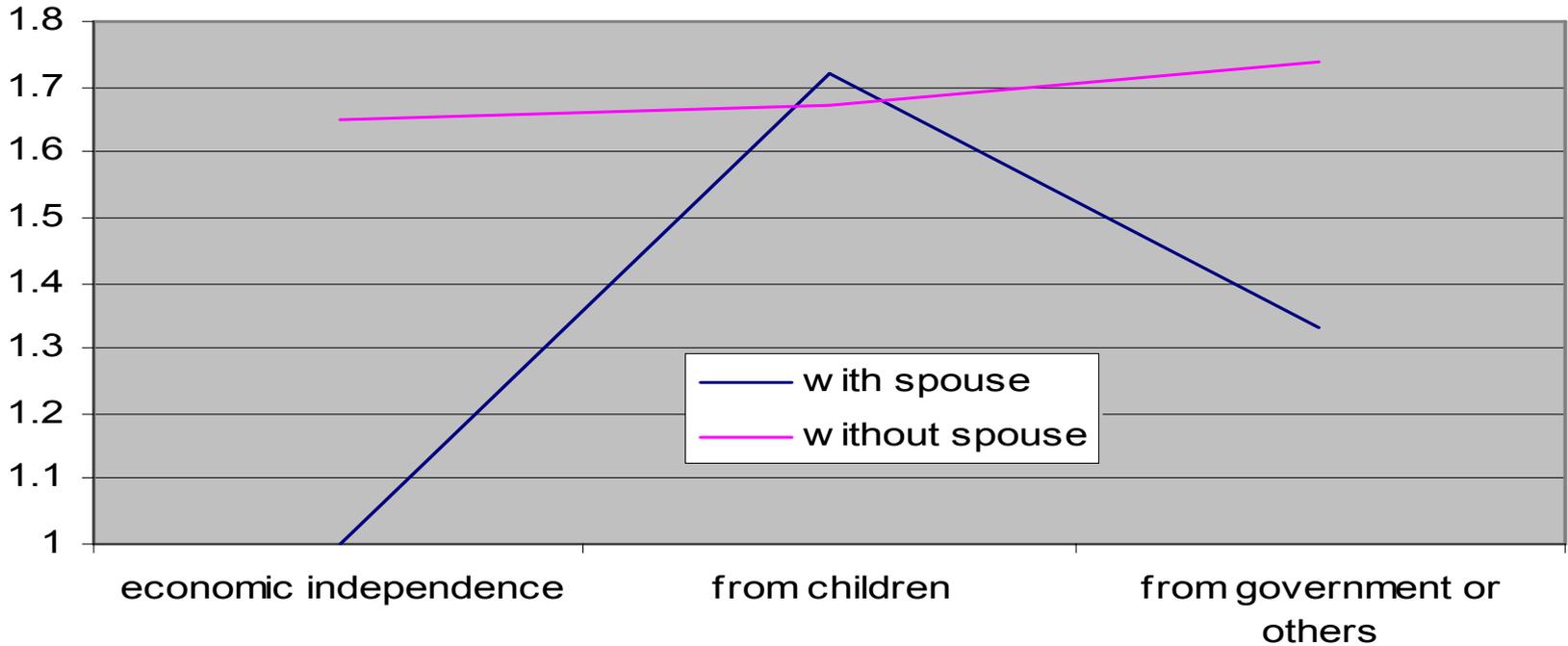
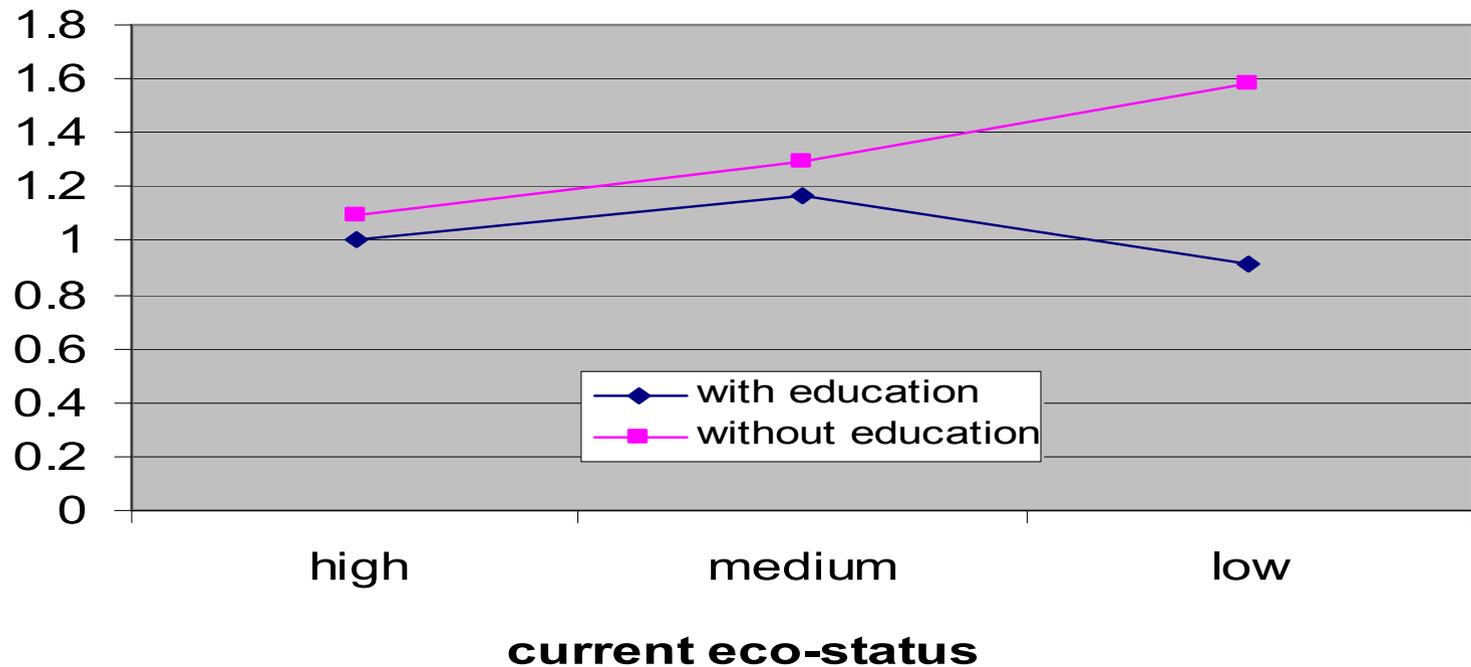


Figure 3,
Relative risk to current high eco-status, with education
(current economic status*education)



- ✓ There are no gender difference in our full model analysis concerning the economic effects.
- ✓ Although we would like to examine the interaction of economic factors with other variables, the serious problem of *small size* with some sub-groups prevented this possibility at present.

main economic supports in 2000 survey	occupation before age 60		<i>Total</i>
	self- employee	unit-work	
economic independence	4.48	4.69	9.17
from children	75.48	6.61	82.09
from government or others	7.68	1.07	8.74
<i>Total</i>	87.63	12.37	100

Conclusion

Our results shows that the economic independent oldest has the lowest probability to disability. Depending economically on children would bring higher risk of disability for the oldest old.

The potential explanations for such phenomena in China are

1) the children of these oldest old are also in their late life and lost their earning ability. Within the inadequacy context of social security, especially pension system, their children could not provide sufficient financial supports for their oldest parents;

2) the economic independence may imply a sense of complete or dignit. Because as K. E. Steinhauser (2000) reported, the at the end of life 94% and 95% of the older consider that maintaining one's dignity and keeping financial affairs in order is very important, respectively.

Conclusion

Our study in 80-90 age group finds the most vulnerable subgroup is those oldest old with spouse but still need the economic support from children.

This reveals a very bad living situation for oldest in China: the oldest couples both lose their ability of laboring or earning but they have children, therefore they do not satisfy the requirement of social relief from government. If their children can't provide enough financial supports, such oldest old would be very likely to disability as the data shows.

Conclusion

✓ In the age 80-90 group, the illiterate oldest has a significant higher risk of disability than those with education. This may be explained by the hypothesis that “educational attainment increases resources that accumulate throughout life, producing a larger SES gap in health among older persons than younger (P.105, Rose and Wu, 1996)”.

✓ In age 90+ group, with the consideration of the decreasing education effect in this very oldest group, the biological determinants, rather than the social determinants may take on a predominant role in affecting disability at extremely high age.

Conclusion

Some limitations to this study include the fact that the first three CLHLS surveys has few in terms of economical variables.

however, the representative nature of CLHLS's sample offers equivalent, although different, value.

In the end, we recommend that further studies use future waves of CLHLS which have been scheduled to include *many more* economic factors.



Thanks and any comments!