

**The Changes of Urban-rural Disparity in Disability-free Life Expectancy of Chinese Elderly: 2005-2010**

Shenghui Yang  
Ph. D. Candidate  
School of Sociology and Population Studies  
Renmin University of China  
Beijing, 100872, P.R.China  
[yangshenghui@ruc.edu.cn](mailto:yangshenghui@ruc.edu.cn)

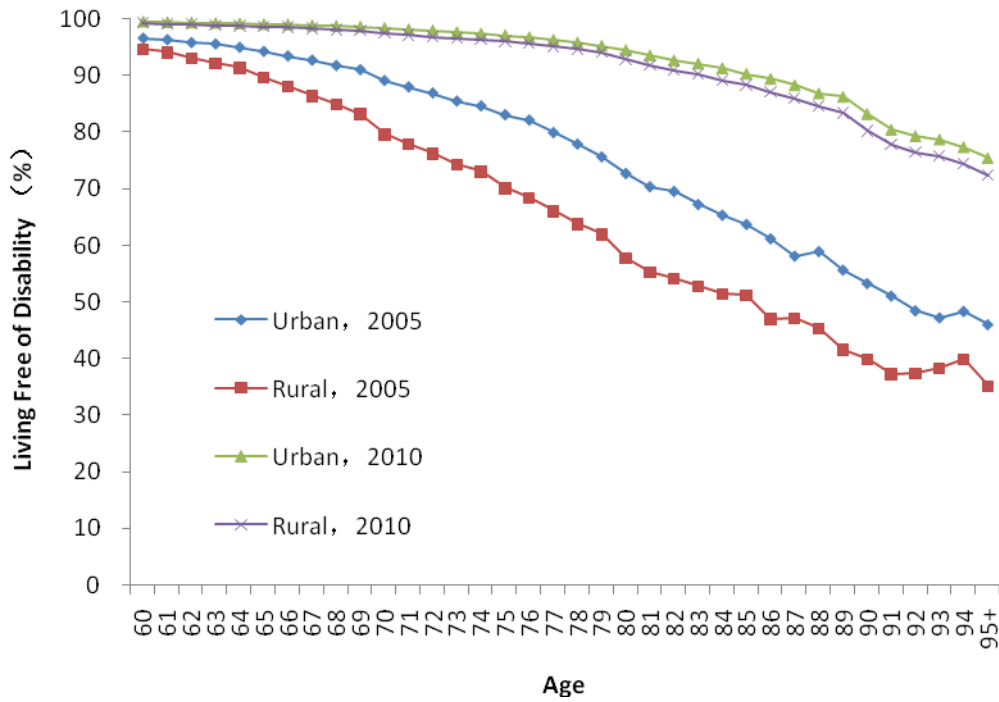
Wei Guo  
Ph. D., Lecturer in Social Policy  
Department of Social Work and Social Policy  
School of Social and Behavioral Sciences  
Nanjing University, Jiangsu Province, 210046, P.R.China  
[guowei2008@pku.edu.cn](mailto:guowei2008@pku.edu.cn)

## **ABSTRACT**

Based on the aggregate data of 1% National Population Sample Survey in 2005 and the Sixth National Population Census in 2010, using life table technique and Sullivan method, this paper analyses the changes of life expectancy (LE), disability free life expectancy (DFLE), and their disparity among Chinese urban and rural elderly. The results show that urban elderly have higher LE and DFLE than their rural counterparts, and urban-rural disparity in LE and DFLE decrease with age. The results of comparison on LE and DFLE of the elderly in 2010 and 2005 demonstrate that LE and DFLE of urban and rural elderly advance between 2005 and 2010, the increasing speed of LE of rural elderly is lower than that of urban elderly, but the increasing speed of DFLE of rural elderly is higher than that of urban elderly. The comparison indicates that urban-rural disparity in LE of Chinese elderly is expanding, and that in DFLE of Chinese elderly is compressing. However, unlike the findings from previous research, our research results indicate that the proportion of DFLE in LE is increasing and the increasing speed of DFLE/LE is higher among rural elderly than that among urban elderly at each age stage between 2005 and 2010.

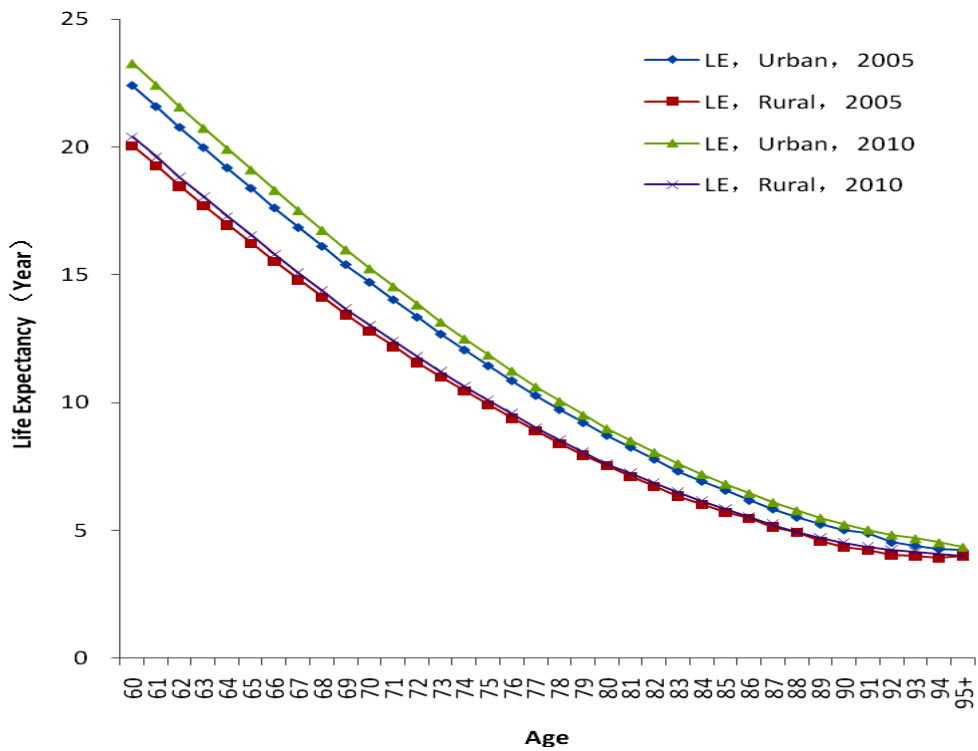
**Key words:** Disability-free life expectancy; Urban-rural Disparity; Elderly

**Preliminary Data Results:**



**Figure 1** Percent of Chinese Elderly Living Free of Disability in 2005 and 2010

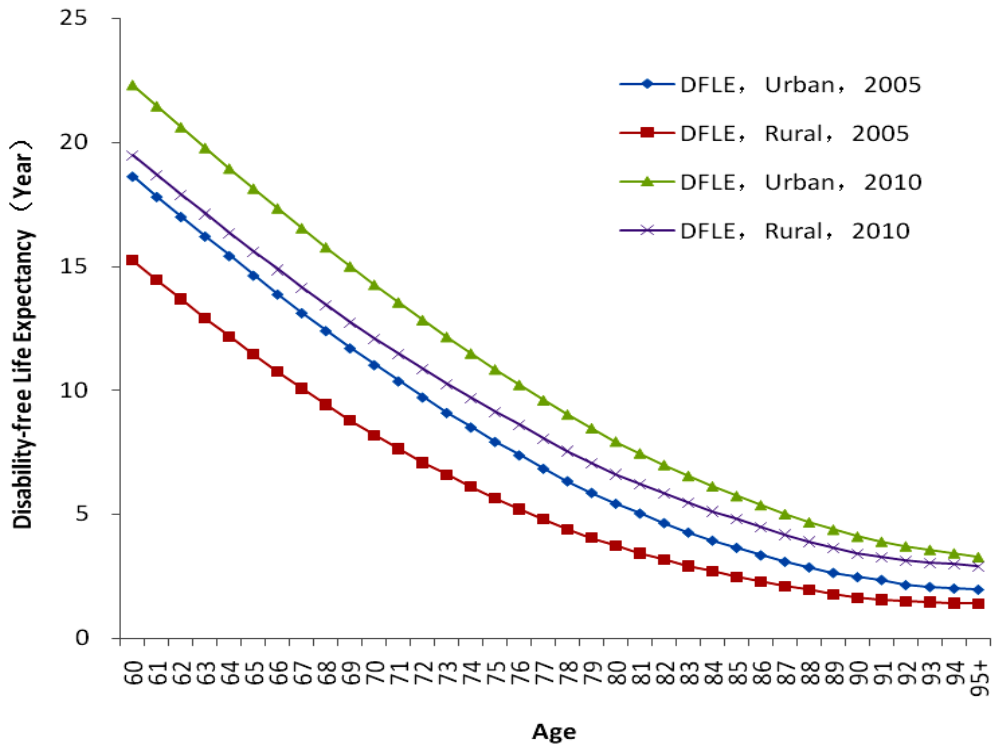
**Data Source:** The Aggregate Data of 1% National Population Sample Survey in 2005 and the Sixth National Population Census in 2010



**Figure 2** Changes of Life Expectancy of Chinese Elderly between 2005 and 2010

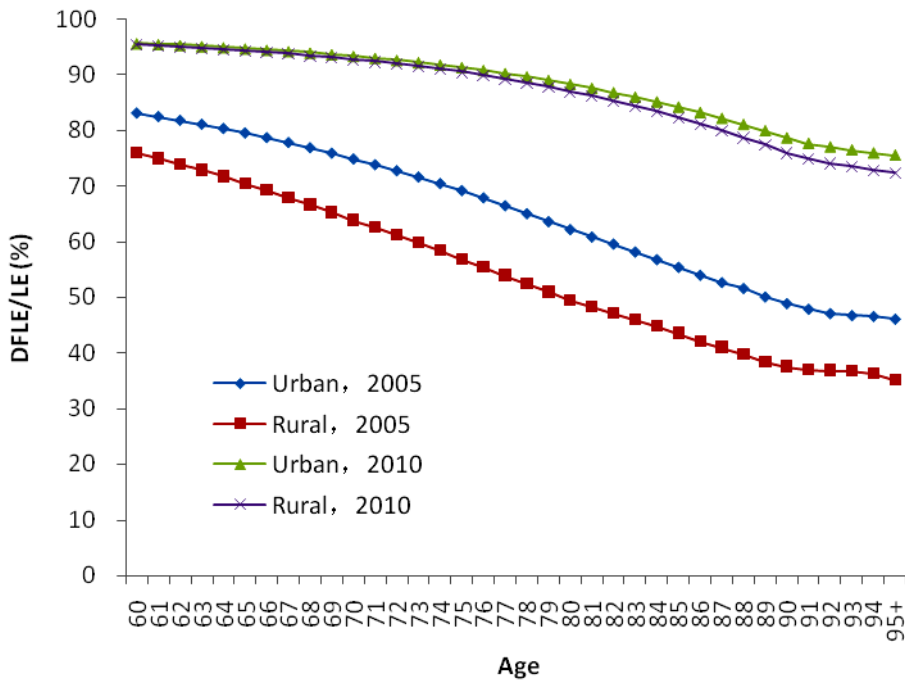
**Data Source:** The Aggregate Data of 1% National Population Sample Survey in 2005

and the Sixth National Population Census in 2010



**Figure 3** Changes of Disability Free Life Expectancy of Chinese Elderly between 2005 and 2010

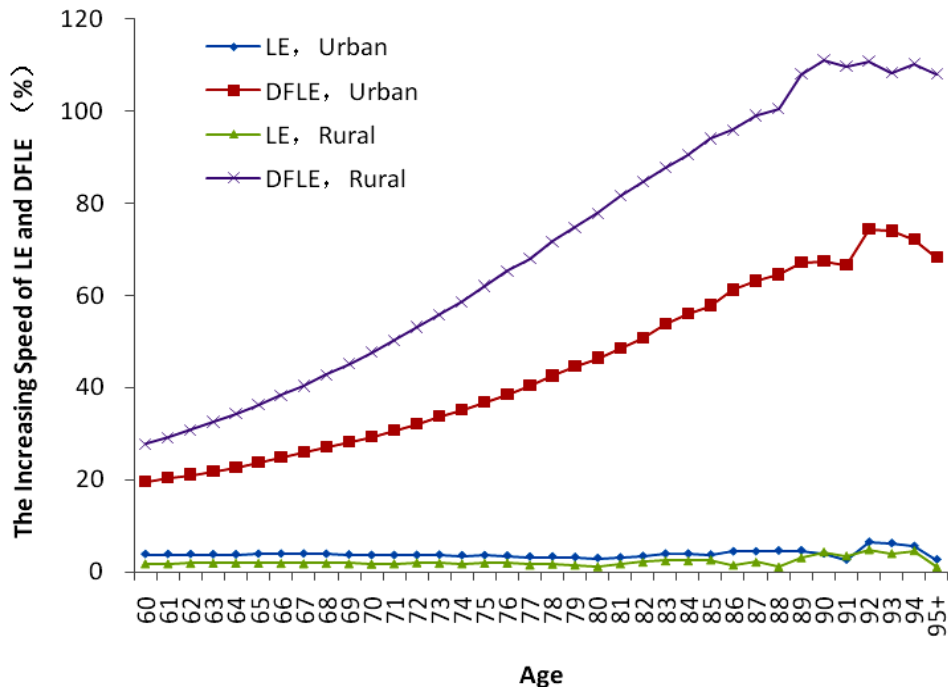
**Data Source:** The Aggregate Data of 1% National Population Sample Survey in 2005 and the Sixth National Population Census in 2010



**Figure 4** Changes of the proportion of DFLE in LE of Chinese Elderly between 2005 and 2010

**Data Source:** The Aggregate Data of 1% National Population Sample Survey in 2005 and the Sixth

National Population Census in 2010



**Figure 5** The Increasing Speed of LE and DFLE of Chinese Elderly between 2005 and 2010

**Data Source:** The Aggregate Data of 1% National Population Sample Survey in 2005 and the Sixth National Population Census in 2010

## APPENDIX:

**Table 1** Disability Free Life Expectancy of the Chinese Elderly in 2005 (Urban)

Age $x$	$l_x$	$L_x$	$\pi_x$	$L_{x,DF}$	$T_{x,DF}$	$DFLE_x$	$S(DFLE_x)$	$e_x$	$DFLE_x/e_x$ (%)
60	90609	90250	0.96639	87217	1687968	18.63	0.00022	22.41	83.12
65	86340	85789	0.94316	80912	1263139	14.63	0.00025	18.39	79.55
70	79624	78752	0.89180	70231	877066	11.02	0.00029	14.71	74.87
75	69631	68347	0.83136	56821	551272	7.92	0.00038	11.44	69.19
80	55350	53653	0.72766	39041	300007	5.42	0.00060	8.72	62.17
85	37816	36100	0.63775	23023	137626	3.64	0.00128	6.57	55.39
90	20497	18844	0.53343	10052	50302	2.45	0.00436	5.02	48.86
95+	8056	34064	0.46071	15693	15693	1.95	0.02825	4.23	46.07

**Data Source:** China 1% National Population Sample Survey in 2005

**Table 2** Disability Free Life Expectancy of the Chinese Elderly in 2005 (Rural)

Age $x$	$l_x$	$L_x$	$\pi_x$	$L_{x,DF}$	$T_{x,DF}$	$DFLE_x$	$S(DFLE_x)$	$e_x$	$DFLE_x/e_x$ (%)
60	85057	84579	0.94675	80075	1295730	15.23	0.00000	20.04	76.00
65	79602	78885	0.89662	70730	911369	11.45	0.00000	16.23	70.53
70	71309	70213	0.79666	55936	583485	8.18	0.00000	12.81	63.88
75	59098	57666	0.70137	40445	333325	5.64	0.00000	9.91	56.90
80	43569	41880	0.57768	24193	162116	3.72	0.00000	7.52	49.47
85	26711	25002	0.51150	12789	66235	2.48	0.00000	5.69	43.55
90	12874	11660	0.39828	4644	20912	1.62	0.00000	4.33	37.52
95+	4068	16186	0.35145	5689	5689	1.40	0.00000	3.98	35.14

**Data Source:** China 1% National Population Sample Survey in 2005

**Table 3** Disability Free Life Expectancy of the Chinese Elderly in 2010 (Urban)

Age $x$	$l_x$	$L_x$	$\pi_x$	$L_{x,DF}$	$T_{x,DF}$	$DFLE_x$	$S(DFLE_x)$	$e_x$	$DFLE_x/e_x$ (%)
60	93262	92966	0.99450	92455	2078235	22.28	0.00001	23.28	95.73
65	89627	89136	0.99007	88252	1623536	18.11	0.00001	19.11	94.77
70	83830	83015	0.98365	81658	1193982	14.24	0.00001	15.25	93.41
75	74324	73108	0.97063	70961	805415	10.84	0.00002	11.86	91.39
80	60405	58619	0.94476	55380	479251	7.93	0.00002	8.98	88.35
85	41930	40014	0.90289	36129	240765	5.74	0.00005	6.82	84.24
90	23542	21837	0.83260	18181	96697	4.11	0.00015	5.22	78.66
95+	9869	42849	0.75515	32357	32357	3.28	0.00085	4.34	75.51

Data Source: China's Sixth National Population Census in 2010

**Table 4** Disability Free Life Expectancy of the Chinese Elderly in 2010 (Rural)

Age $x$	$l_x$	$L_x$	$\pi_x$	$L_{x,DF}$	$T_{x,DF}$	$DFLE_x$	$S(DFLE_x)$	$e_x$	$DFLE_x/e_x$ (%)
60	87563	87113	0.99226	86439	1704635	19.47	0.00000	20.39	95.46
65	82264	81585	0.98576	80423	1283560	15.60	0.00000	16.53	94.36
70	74274	73161	0.97448	71294	897620	12.09	0.00000	13.02	92.79
75	61938	60483	0.95997	58062	566300	9.14	0.00001	10.10	90.55
80	46412	44530	0.92811	41329	307194	6.62	0.00001	7.61	87.01
85	28494	26855	0.88337	23723	137098	4.81	0.00003	5.84	82.36
90	13810	12603	0.80201	10108	47356	3.43	0.00013	4.52	75.95
95+	4722	18984	0.72408	13746	13746	2.91	0.00115	4.02	72.41

Data Source: China's Sixth National Population Census in 2010