Research on Population Quality of the 21st Century in China

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Abstract This paper makes an exposition on intension and extension of population quality. The authors also put forward the tactics for total improvementyof population quality based on the analysis of its present situation（Lower physical quality, Lower scientific and cultural quality）.The paper makes considerations that implementing the program against birth defects and quality of newborns,paper ropelling the early population education to lay the foundation for population quality and enhancement in development of education and science to increase population quality.
Key words Population quality; Present situation; Tactics

1 Introduction

As for the connotation of population quality, the early population scholar, Zhang Chunyuan argued in his works *A Course for the Population Theory* that the population quality is a condition and a capability for human beings in itself to recognize and change the world. Later on, the population scholar Mu Guangzong believed that the population quality is a variety of social functions and influences reflected by the population structure and the state of combination under some certain historical condition. Generally speaking, the higher population quality is, the more reasonable structure and combination is, and the stronger social functions and more active influences. So, the population quality refers to, under some certain period, region and social system, the subjective and objective conditions and capability with which the population groups recognize and change the world.

As for its extension, there are Two-Factor Theory and Three-Factor Theory. In 1988, the scholar Chen Jian put forward Two-Factor Theory, in which he thought the population quality consists of physical and cultural quality. In the Three-Factor Theory, population quality consists of physical, cultural and moral qualities, among which physical quality is natural condition and base for population, scientific and cultural quality and moral quality is the center of population.

To increase population quality is to increase population's subjective and objective conditions and capability with which the population groups can recognize and change the world. That is to say, to increase the population quality is to totally increase population's physical, scientific, cultural, moral and labor qualities and skills.

2 Present Situation and Problem of Population Quality in China

When entering the 21st century and later on, as greatly increased the population quality of our country, there is still a big difference between our country and the developed countries and other developing countries.

Based on the Two-Factor Theory, the study offers an analysis of the present situation and problem of the population quality.

2.1 Lower physical quality

2.1.1 Not long enough lifespan expected

Although the average expected lifespan is increased gradually, both male's and female's (see Table 1). But, 2004' average expected lifespan is only 4.1 years higher than that of the world (67.3 years); 7.9 years higher that of India (63.5years). But 7.9 years lower than that of Singapore (79.3 years), 10.4 years higher than that of Japan (81.8 years)(see Table 2).

Table 1 Average Lifespan Expectancy by Sex of Some Years of China (Unit: year)

Year	Male's	Female's
2001	69.87	73.81
2003	70.31	74.29
2005	70.71	74.77
2007	71.11	75.21
2009	71.51	75.61

From 2003' Prediction Program of National Population and Family Planning Commission.

Table 2 1990's, 2000's and 2004's Average Lifespan Expectancy of Some of Other Countries(Unit: year)

Country or Region	Average Lifespan Excetancy		
	1990	2000	2004
The world	65.2	66.6	67.3
China①	68.9	70.3	71.4
India	59.1	62.9	63.5
Japan	78.8	81.1	81.8
South Korea	71.3	75.9	77.1
Canada	77.4	78.9	79.8
Singapore	74.3	78.1	79.3
France	76.7	78.9	80.2
Australia	77.0	79.1	79.9

Notes: ①The World Bank's Statistics.
From Yearbook of International Statistics 2006/2007 by State Statistics Bureau.

2.1.2 A higher rate of infant death

Since 1990, the rate of infant death of our country tends to go down year by year. 1990's rate is 38‰; 2000's is 33‰; 2004's is 26‰. Compared with the world average infant death rate, ours of 1990's is lower by 25.9 per-thousand points; 2000's is lower by 24.6 per-thousand points; 2004's is lower by 28.1 per-thousand points. But compared with the developed countries, the rate is higher by 23‰ than Japan's, by 19.3‰ than America's, by 21.4‰ than Australia's (See table 3). A higher rate of infant death will influence the life expectancy, which have something to do with the development of the whole population.

Table 3 1990's, 2000's and 2004's Infant Death Rate of Some Countries (Unit: ‰)

Country or region	Infant death rate		
	1990	2000	2004
The world	63.9	57.6	54.1
China①	38.0	33.0	26.0
India	80.0	68.0	61.6
The Philippines	41.0	30.0	26.0
Japan	4.6	3.2	3.0
South Korea	8.0	5.0	5.1
The U.S.	9.4	6.9	6.7
Australia	8.0	4.9	4.6
Italia	8.2	4.6	4.2

Note:① Statistic of The World Bank.
From Yearbook of International Statistics 2006/2007 by State Statistics Bureau.

2.1.3 A higher rate of birth deficiency

Although special attention is paid to the control of and protection against birth deficiency in our country, and the project about birth deficiency has been carried and, the rate of birth deficiency decreased a little, among which the rate of low weight diseases went down greater (see table 4), the rate of birth deficiency remains higher due to the statistics base of the large population.

Table 4 The Rate of the Low Weight Diseases in Some Countries (Unit: %)

Countries and regions	The rate of the low weight diseases
	1998-2005
China	4
Japan	8
Thailand	9
India	30
France	7
Romania	8
The U.S.	8
Australia	7
Egypt	12
Nigeria	14

From 2007 The State of the World Children by The UN Children Fun.

According to the statistics from National Population and Family Planning Commission, there are 15 million babies born every year and the rate of birth deficiency is about 12.98‰. So, there will be 200~300 thousand babies born with birth deficiency. If we add the babies with post-birth deficiency, the number of the babies with birth deficiency will reach 0.8~1.2 million, which makes up 4%~6% of the total number of the population per year.

2.1.4 Not a low portion of the disabled

"There are 20%~25% portion of the population in our country who developed a variety of hereditary diseases. The low IQ has a major influence on the population quality. There are about 1%~2% portion of the population in our country who has an IQ lower than 70. Light and medium low IQs makes up about 5~18 million and the number of idiocy is 1~2 million."[1] There is a very large number of the disabled in our country and the number is still growing. In 1987, the disabled makes up 4.9 of the whole population, which is 51.64 million. Up to the first of April of 2006, the number of the disabled reached 82.96 million, that is 6.34 percent of the whole population.

2.2 Lower scientific and cultural quality

2.2.1 Short average length of education of population

1980's average education length is 4.5 years, and 2000's reached 7.6 years(See Table 5), and 2007's increased to more than 8.5 years. But the world average education length is 11 years, the U.S. is 13.4 years, South Korea is 12.3 years, and there is a great difference.

Table 5 2000's Average Education Length of the Whole Country and Some Regions (Unit: year)

Regions	average education length
The whole country(China)	7.6
Beijing of China	10.0
Liaoning of China	8.4
Taijin of China	9.0
Shanghai of China	9.3
Anhui of China	7.0
Guizhou of China	6.1
Gansu of China	6.5

Notes: Refer to the Yearbook of China Population. Beijing: the Yearbook of China Population, 2006:229

Meanwhile, there is a great difference between rural population and urban population. "2005's average education length of urban population is 10.2 years, but that of rural population is only 7.33 years which is 3 years lower than that of urban population and even some of the villagers had only received 3~4 years' education. The population in cities reached the senior school education, but the population of villages just reached the junior school education and even, some of the villages had not reached the primary school education." [2]A great difference of the whole workforce in quality in different regions (See table 6).

Table 6 2004's Average Education Length of the Population of China over 6 Years Old by Region

Regions	average education length(year)	Illiteracy（%）
The East of China	8.26	8.07
The middle of China	8.14	7.16
The West of China	7.48	10.21

From China Population 2004 by Population and Employment Statistics Division of State Statistics Bureau.

There is a great difference in workforce between cities and villages and different regions, which will not help the process of urbanization, increase of labor capacity in agriculture and industrialized agriculture.

2.2.2 Compared with that of the beginning of reform and opening, the rate of gross enrollment of higher education saw a rapid growth

The rate of gross enrollment of higher education of our country is far lower from the world developed countries'. In 2006, ours is 23%, close to the world's average level, 25.6%; but the rate of gross enrollment of higher education in most of developed countries is above 30%, some of them is even above 50%, among which the U.S.'s is 80%.

2.2.3 A high percent of illiteracy and half illiteracy

Compared with the beginning of the foundation of P.R. China, the gross illiteracy rate (the proportion of illiterate population at and over the age of 15 in the total population) and the illiteracy rate between the age of 15 and 45 tend to decline, but it remains high. The gross illiteracy rate of 1990 was

15.88%, 1999's down to 11.55%, 2004's down to 8.33%; the illiteracy rate between the age of 15 and 45 of 1990 was 10.38, 1999's down to 4.82%, 2004's down to 2.22%(see Table 7).

Table 7 The Gross Illiteracy Rate and the Illiteracy Rate Between the Age of 15 and 45 of Some Years of China (Unit:%)

Year	The gross illiteracy rate	the illiteracy rate between the age of 15 and 45
1990	15.88	10.38
1995	12.04	6.14
1999	11.55	4.82
2004	8.33	2.22

Note: Population census, 1% sampling and the change in population.
From The Yearbook of China of 2004 and China Population of 2004 by Population and Employment Statistics Division of State Statistics Bureau.

It is a large number of the illiterate. The number of 1990 is 18.003 million, and went down to 8.507 million in 2000(see Table 8). The total number of the illiterate is going down, but because of the large base statistics, it remains the world second and only followed by India's. Nowadays, the illiteracy rate of the developed countries is below 2%, the European's is about 2.2%, and even the U.S.'s, Canada's and Russia's is 0.5%.

Table 8 1990's- 2000's Number of the Illiterate of China

Regions	Illiteracy(per 10 thousand)		The gross illiteracy rate（%）		
	1990	2000	1990	2000	The percentage points
The whole country	18003	8507	15.88	6.72	9.16

Note: The Population Censuses 0f 1990 and 2000.
From The Yearbook of China State Statistics 2001.

3 Conclusion

At present, we should focus the improvement of population quality as the kernel problem of the population policy and change the population stress into the advantages of human resources and, still we can go into the power full of talents from the country with a large population.

3.1 Implementing the program against birth defects and improving the quality of newborns

The key to the program against the birth defects lies in prevention. So, the three grade prevention program should be carried out to fight against the birth defects, among which the first grade prevention is to prevent the birth of the baby before it is defected, including the pre-marriage examination, choosing the best childbearing age, early pregnancy care, adequate nutrition, infection prevention, carefully using medicine, discontinuing the habit of smoking and drinking, keeping away from the radiation, the poisonous, the harmful, the hot environment etc.; the second grade prevention is to reduce the birth of defected babies, mainly the early discovery, early diagnoses and early measurements during the pregnancy; the third prevention is to cure the babies with birth defect.

Through theses health intervention, nutrition intervention, vaccine intervention and drug intervention, the program against the birth defects will be carried out to improve the quality of the newborns.

3.2 Propelling the early population education to lay the foundation for population quality

"The infant period is not only the foundation period for intelligence development, but also the foundation period for physical health and mind." [3] The early education is a family education, a kindergarten education and a social education whose key link is to develop infants' brains and their potentials, whose form is to play games, whose aims are to develop infants' intelligence, to enhance their physical power, to better their character, to improve the comprehensive population quality.

Through the timely, scientific early education, infants will grow well in all round in morality, intelligence and body.

3.3 Enhancement in development of education and science to increase population quality

Increasing the investment in education and implementing the education as the priority development strategy. At present, the average education funds is about 20~30 USD each, only 1/10 of the developed countries. Due to the small percentage of education investment out of national income, the funds invested can't meet the needs to education development. So, the education funds should be increased, especially in rural areas and the western villages.

Optimizing educational structure, speeding the variety of education. The two basic jobs (that are basic skills and basic knowledge) must be continued to do to balance the education development;

speeding the popularity of senior education to guarantee every school-aged children to receive the whole basic education; strongly developing higher education and improving its quality; strengthening adult education and grow up employees' scientific and cultural level; highlighting vocational and technical education, and cultivating all kinds of practical talents; encouraging and regulating social force to run schools, developing the long distance education and further education, and to establish a society in which all people learn, and will learn forever.

Positively implementing talents strategy, and speeding the development of labor force. Because the good talent environment is a formless capital, which can gather force encouragement and drive inner, and, strength influence, competition and attraction. So, talents strategy must implemented to speed human resource to provide space for the talents to create, and make the most of the opportunity, to form a friendly surroundings which lets people give respects to knowledge and talents.

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