Trend and equity of general practitioners' allocation in China Based on the Data from 2012-2017

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Abstract

Background: The aim of this study is to evaluate the trend and equity of general practitioners allocation at the national level in mainland China including 22 provinces, 5 autonomous regions and 4 municipalities based on the data from 2012-2017, and provide reference for regional health planning and rational allocation of general practitioners.

Methods: We treat the data of general practitioners from 22 provinces, 5 autonomous regions and 4 municipalities (except Taiwan, Hong Kong Special Administrative Region and Macao Special Administrative Region) as the research materials. The population and geographical area of each region are obtained from China Statistical Yearbook (2013-2018). The general practitioners' data are from China Health and Family Planning Yearbook (2013-2018). We use the Lorenz curve, Gini coefficient and agglomeration degree to analyze the equity of general practitioners in population and geographical area allocation in China.

Results: In 2017, the total number of general practitioners in China was 252,727, and the number of general practitioners per 10,000 residents was 1.82. The number of general practitioners accounted for 7.45% of the total number of practicing (assistant) doctors. From 2012 to 2017, the Gini coefficient for general practitioners based on population fell from 0.31 to 0.24, while the Gini coefficient based on geographical area remained unchanged at 0.73. The agglomeration degree based on population increased from 0.72 to 0.73 in the west region, among of which Tibet, Shaanxi, etc. was about 0.5. And the one in Eastern region dropped from 1.477 to 1.329, while in Zhejiang province, Beijing and Shanghai then were much higher than 1. The one in Middle region rose from 0.646 to 0.802, but in Heilongjiang and Hunan provinces they were lower. The agglomeration degree based on geographical area in western region increased from 0.270 to 0.277, among which Tibet, Qinghai and Xinjiang were lower than 0.1. In eastern region it fell from 1.447 to 1.329, and the ones in Shanghai, Beijing, Tianjin and Zhejiang province are much higher than 10. The degree in middle region increased from 1.149 to 1.423, among which Heilongjiang was lower.

Conclusions: The number of general practitioners in China has increased significantly, but the total allocation is still insufficient. China has a fairly fair allocation of general practitioners' resources based

on population size, which is improving constantly. However, the equity distribution based on geographical area is poor and does not change much in recent years. The distribution of general practitioners in different regions is uneven and with large regional differences. In western region, there is a shortage of general practitioners in terms of population size and geographical area, while in eastern region, there is an excessive concentration of resources. We propose that concerning departments should establish and improve the incentive mechanism and performance appraisal mechanism of general practitioners to improve the occupational attractiveness. They can use the Internet+ to empower general practitioners' service capacity and efficiency. The government should increase their input for western region and take some measures to encourage eastern region to support western area. We should strive to develop medical education in western regions to cultivate more better general practitioners and achieve balanced development in different regions.

Full Text

Due to technical limitations, full-text HTML conversion of this manuscript could not be completed. However, the manuscript can be downloaded and accessed as a PDF.

Figures

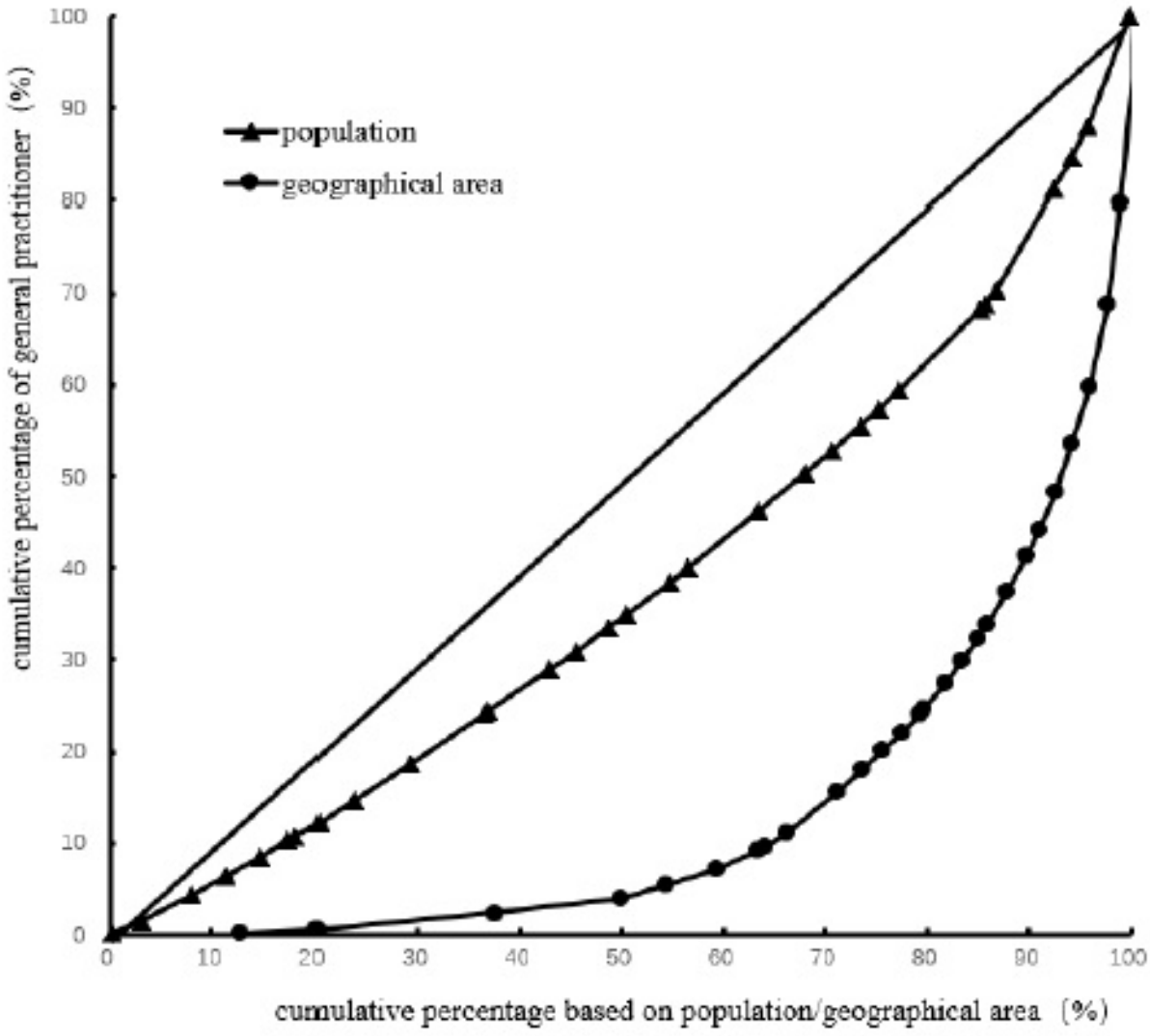

Figure 1 Lorenz curve for distribution of GPs in China in 2012

Figure 1

Lorenz curve for distribution of GPs in China in 2012

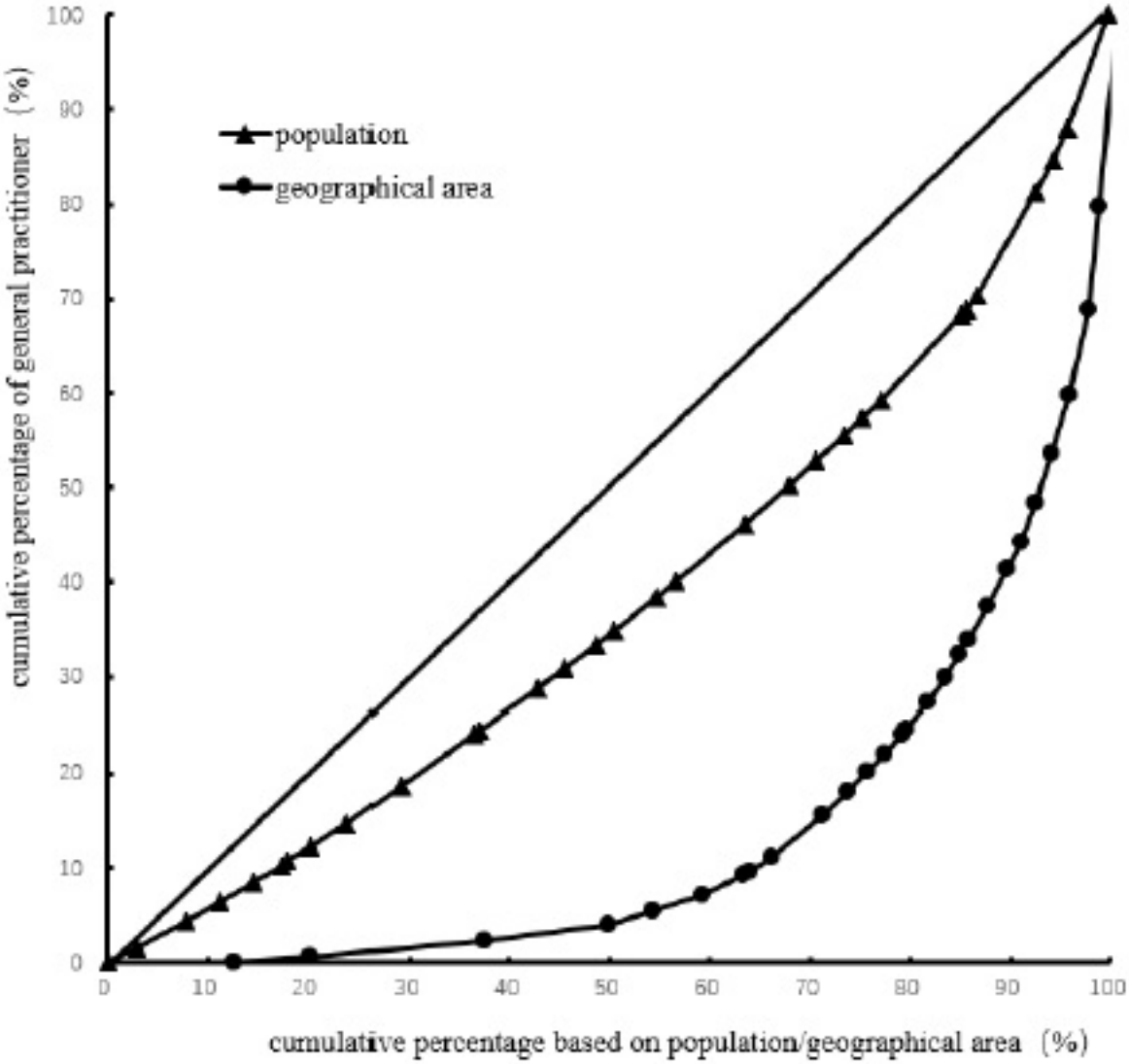

Figure2 Lorenz curve for distribution of GPs in China in 2013

Figure 2

Lorenz curve for distribution of GPs in China in 2013

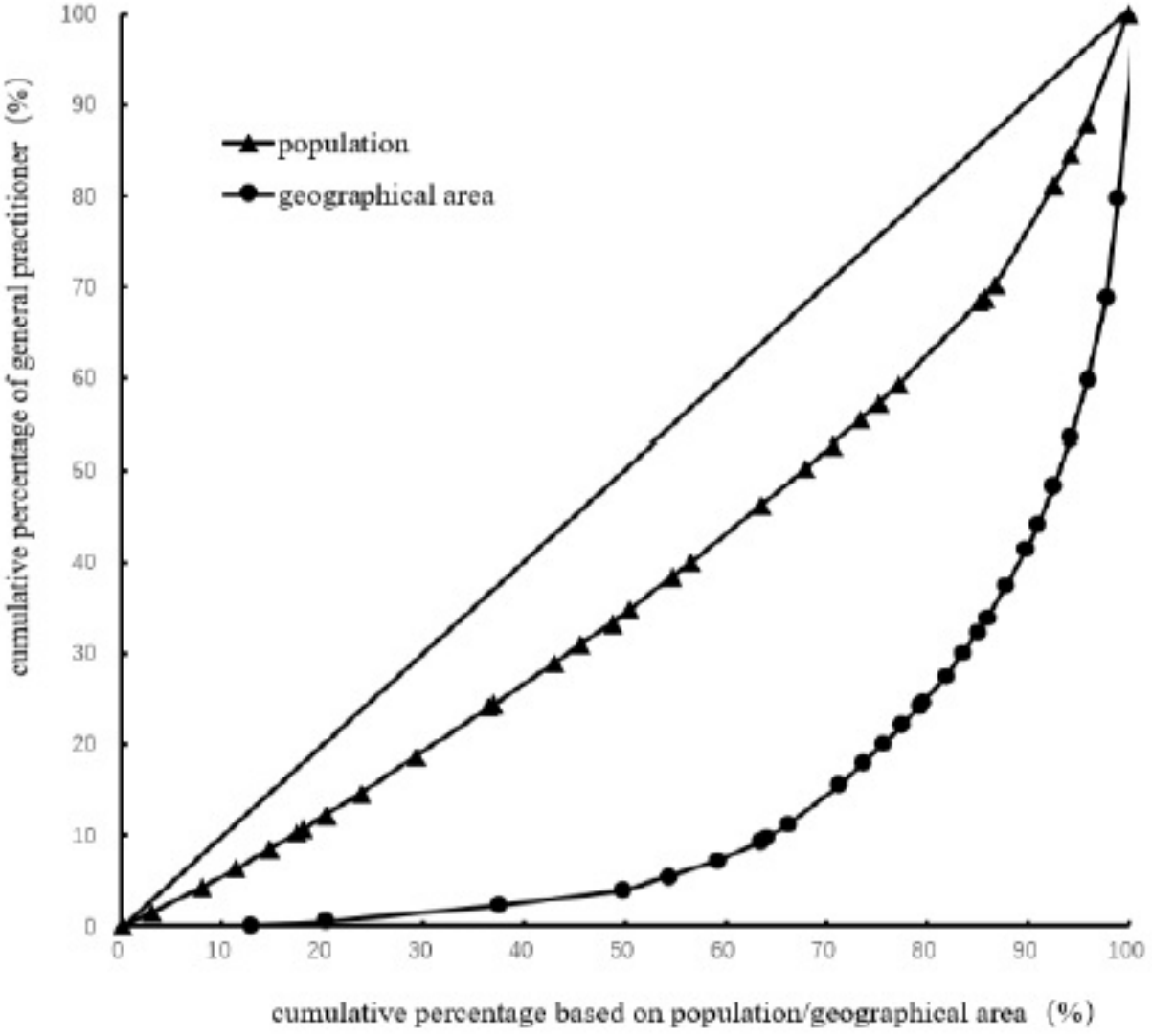

Figure3 Lorenz curve for distribution of GPs in China in 2014

Figure 3

Lorenz curve for distribution of GPs in China in 2014

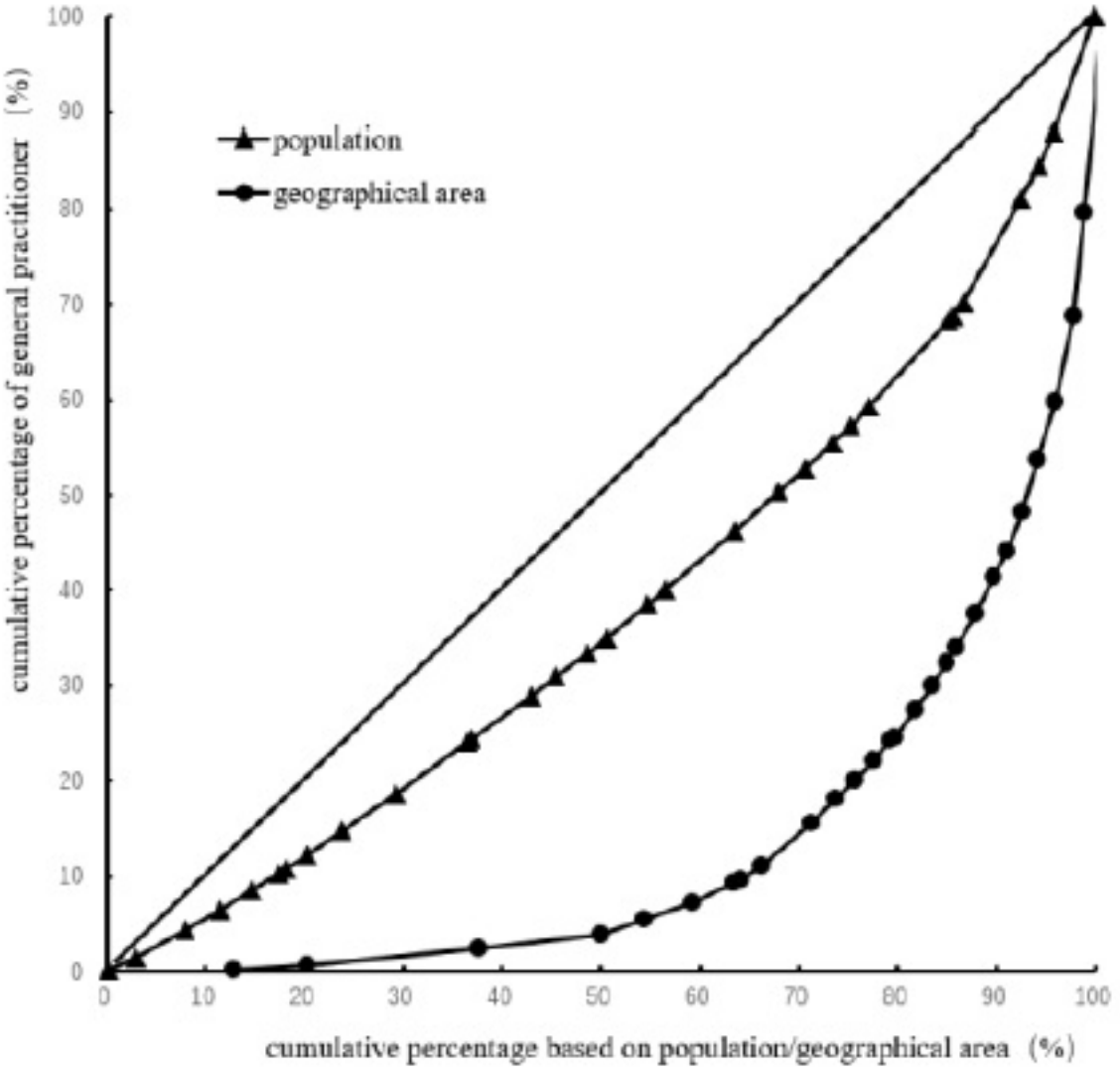

Figure4 Lorenz curve for distribution of GPs in China in 2015

Figure 4

Lorenz curve for distribution of GPs in China in 2015

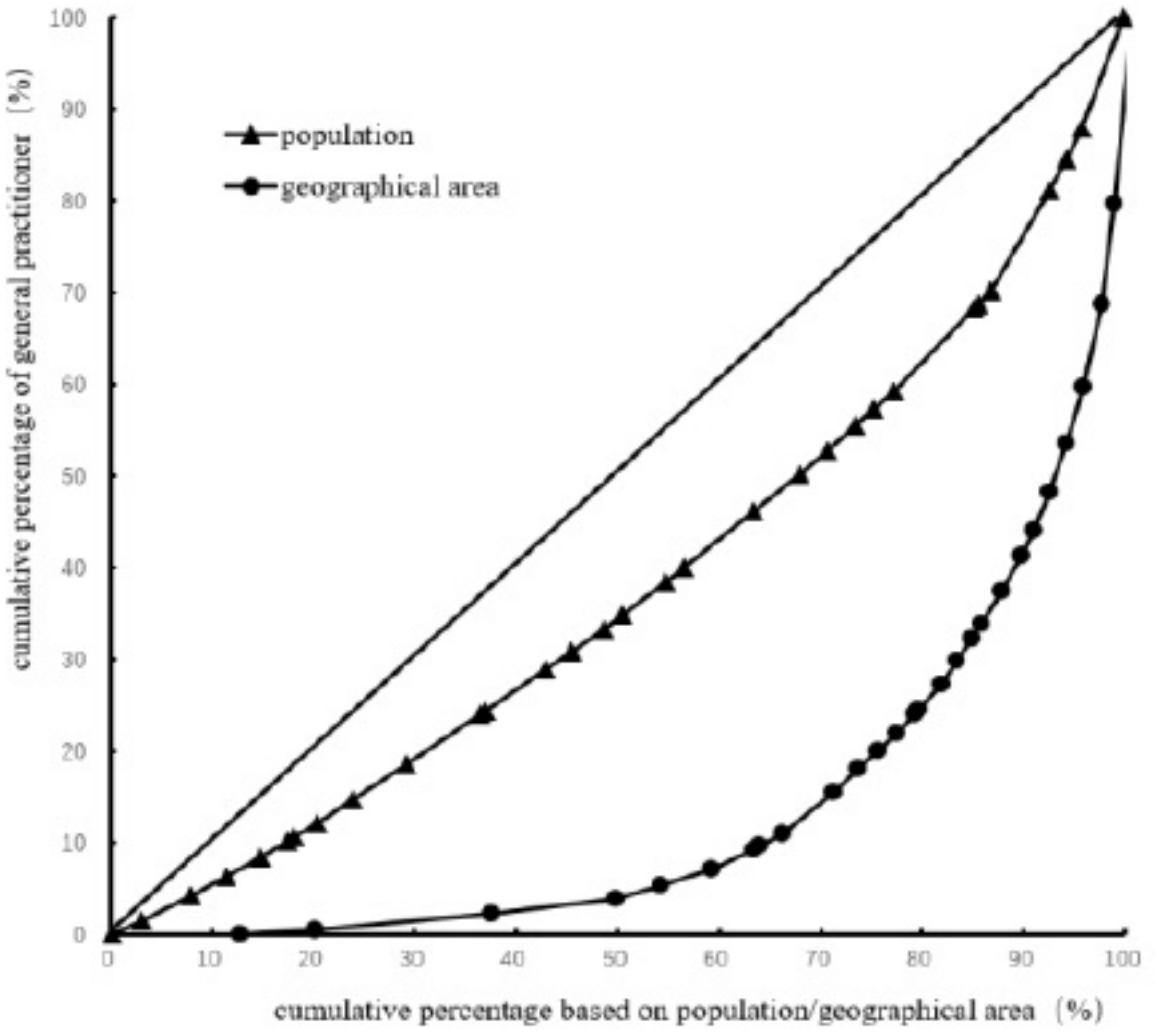

Figure5 Lorenz curve for distribution of GPs in China in 2016

Figure 5

Lorenz curve for distribution of GPs in China in 2016

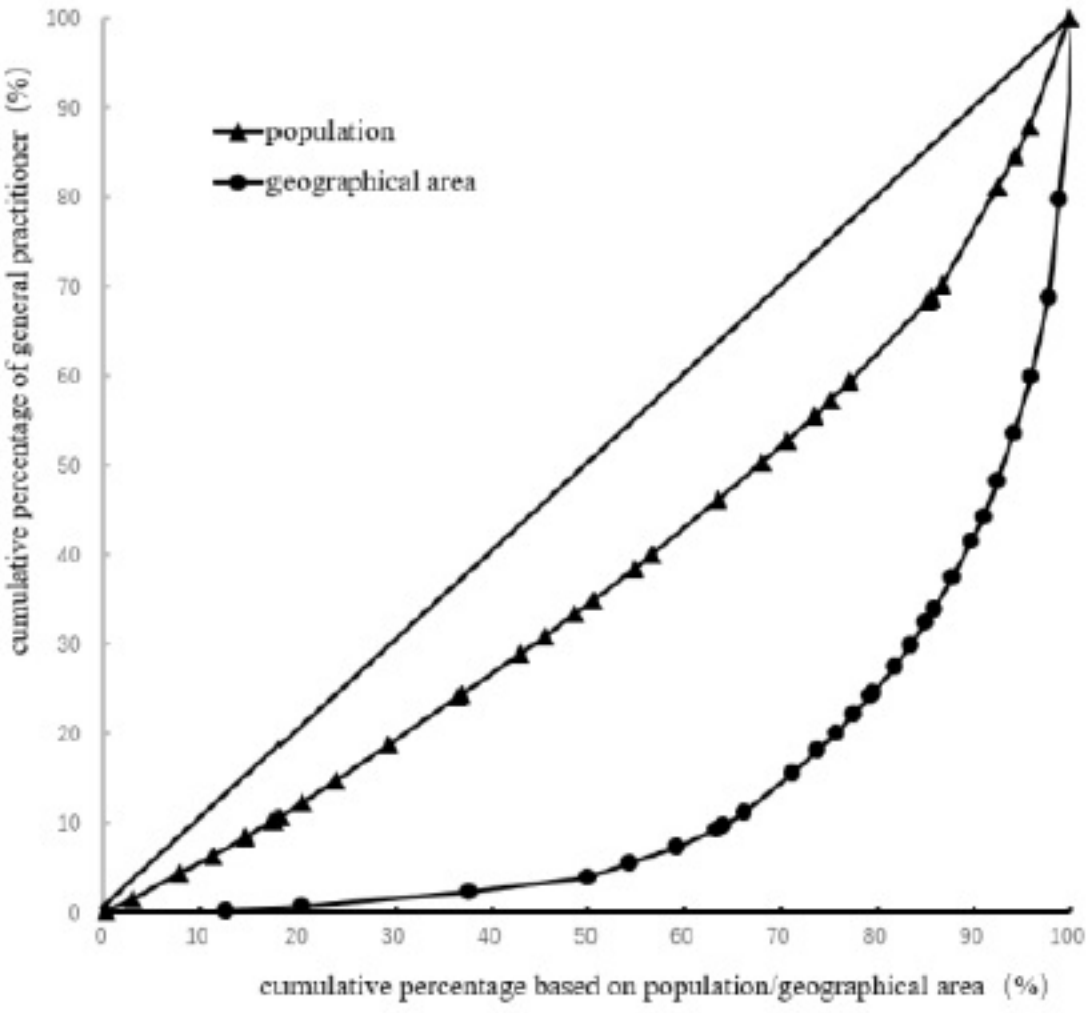

Figure6 Lorenz curve for distribution of GPs in China in 2017

Figure 6

Lorenz curve for distribution of GPs in China in 2017