



The Health Development Office as a Gerontosociological Innovator: National Coverage and Impact in Hungary

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INTRODUCTION

Elderly Health Prevention and Accessibility

Through a questionnaire survey on the utilization of Health Development Offices (HDOs) with 44 participants in 2023, we found that these offices offer numerous health promotion programs for the elderly, attracting a high proportion of senior citizens. The locations, accessibility, and national reach of these offices significantly affect their importance to the senior age group.

AIMS

Our research aimed to provide a statistical estimate of the age composition of the patients at Health Development Offices (HDOs), using a confidence interval with a 5% significance level. We also explored whether these offices could serve as venues for gerontosociology. In addition to examining the service composition, we utilized statistical concentration and geospatial modeling to assess the national coverage of HDOs and their capacity to support elderly health prevention. For the elderly population, it is essential that access to a variety of health support programs is not an obstacle to utilizing health prevention services. Given Hungary's ageing demographic, prioritizing health preservation is of utmost importance.

MATERIALS AND METHODS

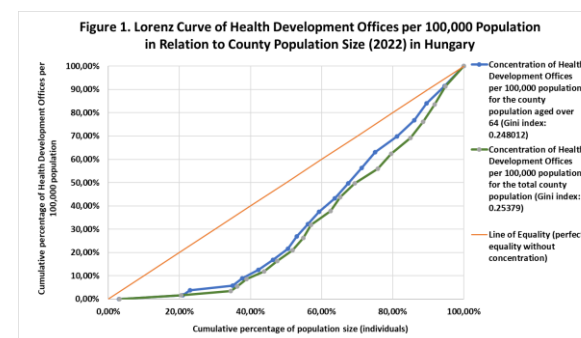
In 2023, out of N=108 surveyed Health Development Offices, n=44 completed our questionnaire. We used descriptive statistical tools and confidence interval estimation ($\alpha=5\%$) to map the proportion of elderly service users from this sample. Our objectives also included analyzing the national coverage using geospatial tools. We entered the geo-coordinates of the surveyed HDOs (N=108) into the QGIS 3.34.0 geospatial software. In addition to determining coverage and topology, we illustrated the distributional concentration of the offices using the Gini Coefficient and Lorenz Curve, supplemented by Location Quotient (LQ) and Herfindahl-Hirschman Index (HHI) measurements along with the Entropy Index. For analysis, we employed county population data based on the 2022 statistics from Hungarian Central Statistical Office (KSH), which served as the basis for our statistical standardization (number of HDOs per 100,000 population). We measured the relationship between county population size and the number of HDOs through linear regression and concentration analysis.

RESULTS

The responses from the surveyed HDOs indicated a high ratio of elderly individuals over 60 years.

The sample indicated an average $\bar{x} = 50.5\%$ ratio of patients aged over 60 years. The survey of HDOs (n=44) provided a 95% confidence interval estimation of 45.1% to 55.9% for the proportion of patients over 60 of the total population studied.

The Gini index and Lorenz curve depicted of the 108 HDOs suggested an even territorial distribution of HDOs with low national concentration. The geospatial modelling, including 19 counties and Budapest, revealed a strong diversification among the number of operational HDOs in each county. Including Budapest, the average number of HDOs was 5.68, with a range between 0 and 11 HDOs across the examined territorial units. The health prevention providers formed a star topology, confirmed by concentration statistical indicators.



For county-level comparability, we related the number of HDOs per 100,000 population to the county population size. Our measurement results indicated an underrepresentation of HDOs in Budapest and Pest county. Measurement of county-level disparities through the LQ index revealed that, besides the capital and its surrounding area, HDOs were underrepresented in Nógrád, Vas, Győr-Ménfőcsanak, and Sopron counties, with Baranya county also joining this group regarding the elderly population. The Gini Coefficient around 0.25 for the total population and the older generation indicated a low concentration in the territorial distribution of HDOs across different counties (Figure 1). Our results were validated with the Herfindahl-Hirschman Index (HHI).

CONCLUSION

The Health Development Office Network in Hungary (N=108) is well-suited to meet the health maintenance needs of the general population, especially the elderly, with approximately 50% of the patients in these offices being senior individuals. The HDOs offer numerous preventive programs for the older generation, thereby constituting a significant gerontological venue in Hungary. Despite their low concentration across geographic areas, opening new offices is crucial to enhancing equality of health maintenance and preventive care for the elderly.

