Turning Up the Volume on the Issue of Hearing Health Inequalities in England

Turning Up the Volume on the Issue of Hearing Health Inequalities in England: An Update of Hearing Loss Prevalence Estimates after Four Decades

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Aim

To update the prevalence estimates of hearing loss in older adults in England using a nationally representative sample of 8,263 adults aged 50 years old and older.

Background

The hearing loss estimates in older adults in England are currently based on the prevalence data from Davis's *Hearing in Adults* study, who collected audiological data for 1,538 subjects 50 years old and above in the 1980s from two cities; Nottingham and Southampton. [1] The hearing loss estimates' accuracy has not been validated in the last nearly 40 years, yet this data is used to inform the NHS hearing loss data tool, which determines the local hearing health needs in England. [2]

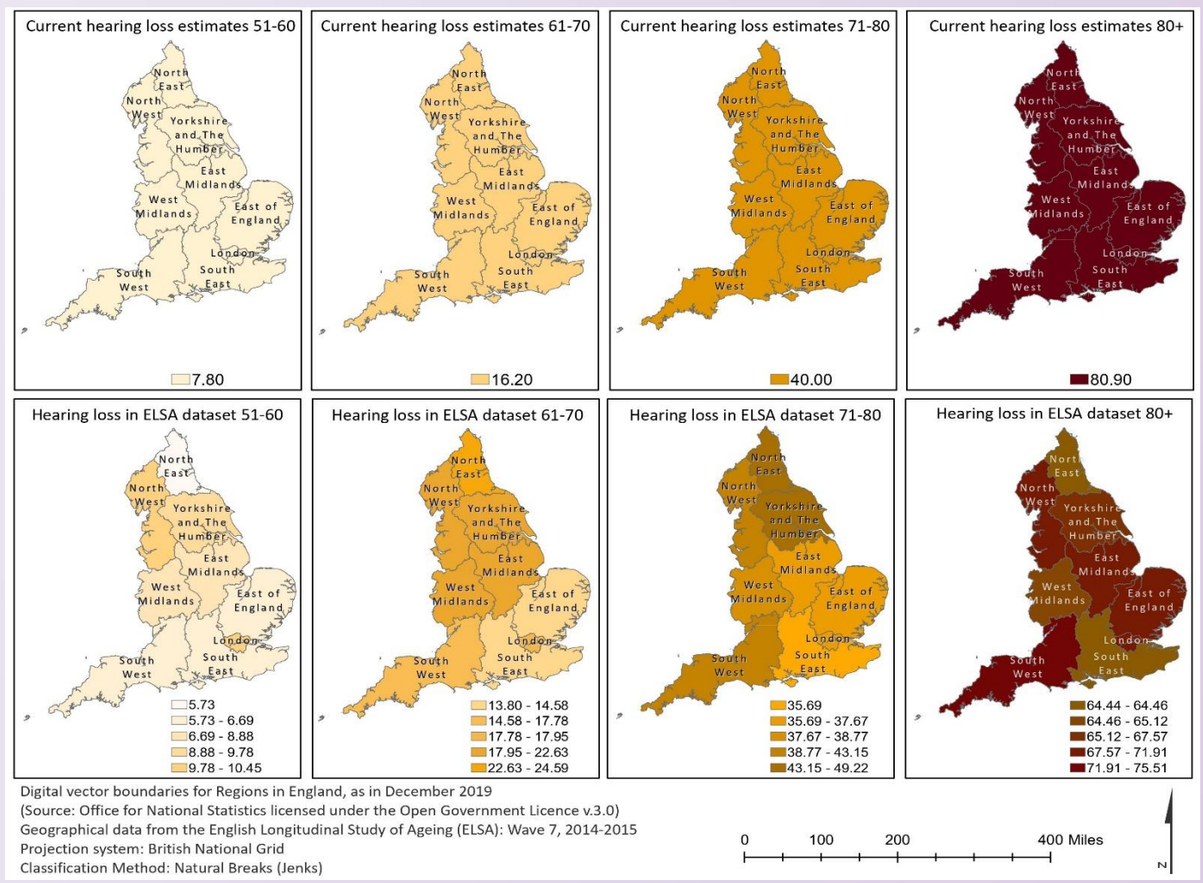

Figure 1. Map of England by Government Office Regions, showing prevalence rates of objectively identified hearing loss ≥35 dB HL in the seventh Wave of the English Longitudinal Study of Ageing (ELSA (2014-15), in comparison to the current estimates on the English census for the same year.

Methods

We compared the current estimates based on the English census in 2015 to estimates from objective hearing data available for 8,263 participants in the English Longitudinal Study of Ageing (ELSA) Wave 7 (2014–2015). [1] Hearing loss was defined as ≥35 dB HL at 3.0 kHz in the better-hearing ear, as measured via Hearcheck Screener. For the conceptualisation of spatial relationships, we applied Hot Spot analysis (Getis-Ord Gi*).

Results

Our study revealed that population samples with equal age profiles had marked regional variation in their objectively identified hearing loss outcomes and premature morbidity depending on the place they live. The participants residing in the northern part of the country had worse hearing outcomes at an earlier age. (**Figure 1**) The Hot Spot and Cold Spot analyses showed marked regional variability and evidence of a North-South divide. (**Figure 2**) The findings revealed that the hearing loss prevalence in the country's northern part is currently vastly underestimated. Based on the nationally representative sample from ELSA, the total hearing loss prevalence in England in the age group '61–70' was 152,730 additional cases on top of the current hearing loss estimates that currently inform the NHS Hearing Loss Data Tool. The 44,017 of these additional cases are located in the North West of England. (**Figure 3**)

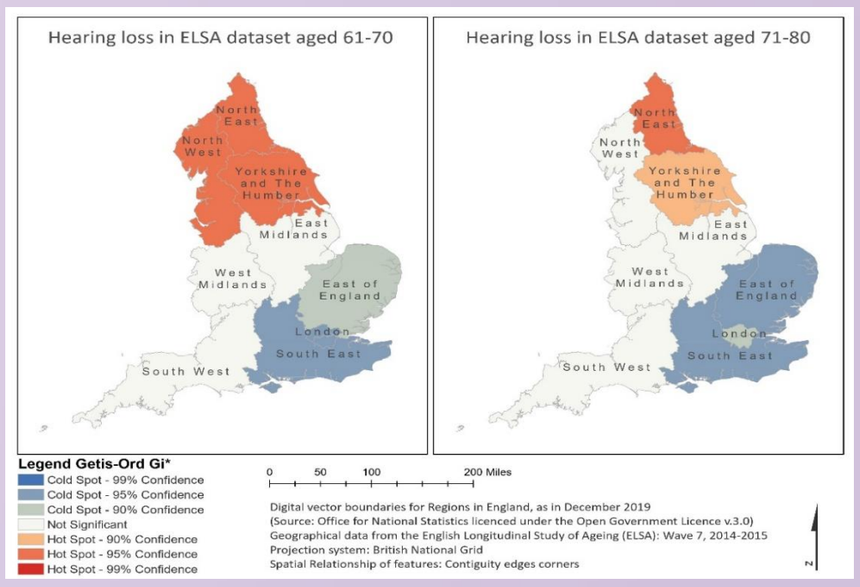

Figure 2. Map of England by Government Office Regions showing the spatial clusters of hearing loss prevalence according to Hot Spot and Cold Spot analyses using the Getis-Ord Gi* statistic in the seventh Wave (8,263 participants) of the English Longitudinal Study of Ageing (ELSA) (2014-2015).

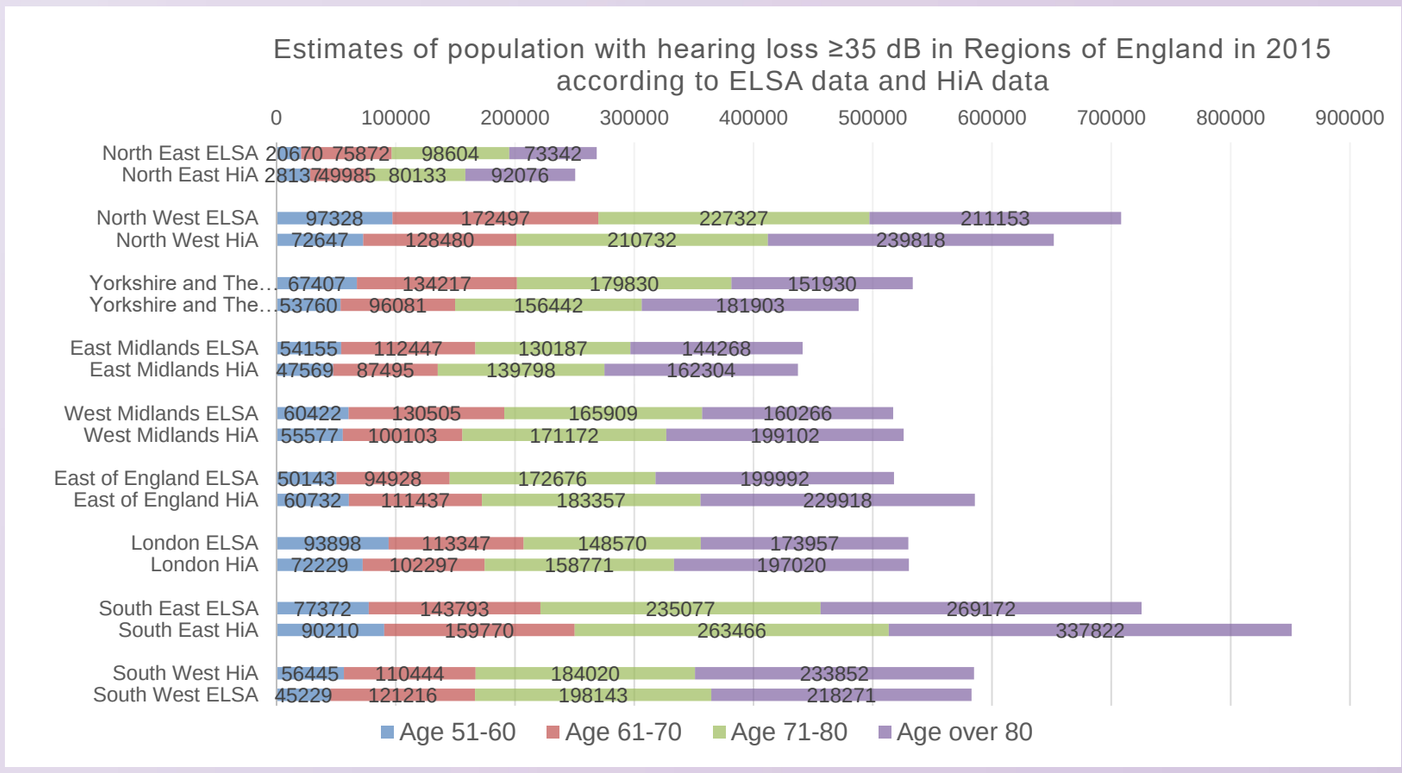

Figure 3. Estimates of population with hearing loss ≥35 dB in Regions of England in 2015 according to ELSA data and Hearing in Adults (HiA) data [4] * Prevalence in ELSA Wave 7 per age group are based on data from n=8,263 older adults and estimates from Hearing in Adults (HiA) are based on data of the n=1,538 individuals with complete audiograms analysed in HiA Study (prevalence per age group: 51-60: 7.8%, 61-70: 16.2%, 71-80: 40%, 80+: 80.9%).

Conclusions

- These findings have significant implications for health policy; the local hearing health needs should be estimated based on the population's actual needs and not on the population's age demographics.
- Applying a single percentage for all regions means that the northern part of the country with a history of socioeconomic and health disparities may be left behind in its needs, which produces hearing health inequalities and premature morbidity.
- Regular assessment of the extent and causality of the population's different audiological needs in England is strongly supported by the updated evidence that our study has produced.

References

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[3] Steptoe A. *et al*. Int J Epidemiol. 2013 Dec 1;42 (6):1640-8.
[4] Davis A. Whurr publishers; 1995.

Acknowledgments

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Summary

This study is the first to calculate the prevalence of objectively identified hearing loss in older adults in England based on data from a nationally representative sample and not derived from population demographics. Therefore, our study provides the best audiological data in England today, having significant implications for health policy.

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