It is estimated that hearing loss (HL) currently affects over 9 million people in England and costs the English economy £25 billion a year in productivity and unemployment (1). To date, the prevalence estimates of hearing loss in England are calculated using data from Davis’s study Hearing in adults (2). The prevalence (%) per age group from this study’s samples is being applied to the most recent Office for National Statistics (ONS) population data. This data’s accuracy has not been validated in the last 40 years, yet it determines local health needs. Specifically, these are the only data available to the Clinical Commissioning Groups (CCGs) to plan NHS audiology services for their local area, including the free provision of hearing aids to the eligible population. Until recently, far too little attention had been paid to whether the current focus on age profiles alone is suitable for estimating the number of adults with hearing loss (3).

A recent study, led by Dr Tsimpida, revealed for the first time that the increasing trend in hearing loss prevalence is not related to the ageing of the population, as widely believed, but potentially to social and lifestyle changes (3).

**BACKGROUND**

The prevalence (%) of several hearing loss severity levels in ELSA for different age groups. Next, we will conduct exploratory spatial data analysis and visualisation of the objective hearing data regionally, using local spatial data analysis tools for analysing spatial distributions, patterns, processes and relationships in the geographical data. Furthermore, we will use the Hot Spot Analysis (Getis-Ord G’I*) as a mapping cluster tool to identify statistically significant Hot Spots and Cold Spots’ locations. Finally, we will use descriptive and inferential statistics to compare patterns of the findings (per age group, sex, hearing acuity and region) to the data of the 2,578 individuals with complete audiograms analysed in Davis’s study that currently inform the NHS Hearing Loss Data Tool.
Improper policies of rationing NHS hearing aids may deter appropriate referrals to secondary healthcare in regions where the free provision of hearing aids is being ceased (3,4), leading to preventable health-care-associated harm to NHS patients (5). Therefore, a socio-spatial approach is crucial for planning hearing care models based on the actual population’s needs and reducing hearing health inequalities (3,6).

This project provides a significant opportunity to advance our knowledge of the current hearing data’s appropriateness for planning sustainable hearing care models by comparing the existing data with reliable objective audiometric measures (3).

This analysis of HL prevalence could inform the NHS England and Department of Health’s health policy strategies, particularly regarding the new governmental programme, ‘Action Plan on Hearing Loss’ (1). The broader dissemination of the research findings will be supported by the RNID UK Royal National Institute for Deaf People.

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