COMPARISON OF SOCIOECONOMIC DIFFERENCES IN HEARING USING OBJECTIVE AND SELF-REPORTED MEASURES OF THE SAME CONDITION: EVIDENCE FROM THE HEALTH SURVEY FOR ENGLAND

Background Studies quantifying health inequalities typically rely on self-report data. Systematic differences in reporting error (participants denying, minimising, or being unaware of their condition) could result in inaccurate estimates of inequalities. Using Health Survey for England data (2012–2014), we compared the relationship between socioeconomic status (SES) and health using objective and contemporaneous self-reported measures of the same condition.

Methods Our study focused on four outcomes: obesity (n=19,993), raised blood pressure (n=14,398), diabetes (n=12,248), and hearing (n=5,334). Obesity (BMI ≥30 kg/m²) was measured using interviewer-measured height and weight compared with self-reported height and weight. Blood pressure (BP) and diabetes (n=19,993) were measured using interviewer-measured BMI and self-reported BP: systolic/diastolic BP ≥140/90 mmHg and was compared with high BP reported as a long-lasting illness/condition. Values of glycated haemoglobin (diabetes ≥6.5%) were compared with reported diabetes including hyperglycaemia as a long-lasting illness/condition. Using an audiometric screening test, hearing loss was defined as impairment in the better hearing ear to the level of ≥35 dBHL at 3 kHz; self-reported hearing difficulty was a perceived hearing difficulty, or report of current hearing aid use. Equivalised household income was our chosen indicator of SES. Logistic regression using Stata was used to examine the statistical significance of SES differences. We present the age-adjusted Odds Ratios (OR) with 95% CI separately for the objective and self-report measures comparing participants in the lowest income quintile with those in the highest.

Results Except for hearing, self-reported estimates were lower than those using objective data. For example, 25.3% (95% CI: 24.2%–26.3%) of men and 24.1% (95% CI: 23.2%–25.1%) of women were obese using interviewer-measured BMI; 18.9% (95% CI: 18.6%–19.2%) and 18.9% (95% CI: 17.2%–18.9%) of women were obese based on self-report.

Age-adjusted odds of interviewer-measured obesity (OR: 1.64; 95% CI: 1.44–1.87, p<0.001) and self-reported obesity (1.69; 1.47–1.95, p<0.001) were significantly higher for participants in the lowest income quintile (reference: highest quintile). Findings for diabetes were similar. We found the magnitude of inequalities for raised BP and for hearing varied by whether self-reported or objective data was used. AORs for each raised BP measure did not attain significance among men. AORs for women were higher for objectively-measured raised BP (1.53; 1.19–1.97, p<0.001) than for self-report (1.37; 0.97–1.94, p=0.075). AORs for low income men were higher using the audiometric screening test (1.81; 1.14–2.89, p=0.012) but not for self-reported hearing problems (0.92; 0.63–1.34, p=0.657). A similar but weaker pattern was found for women.

Conclusion Reliance on self-reported data, particularly for asymptomatic conditions such as raised BP, might underestimate socioeconomic differences in health.