OP88 ASSESSING THE POTENTIAL UTILITY OF 'BIG DATA' FROM THE PRIVATE SECTOR FOR HEALTH RESEARCH: LINKING EXPERIAN™ MOSAIC GROUPS TO DEPRIVATION INDICES

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Background Socioeconomic circumstances are routinely measured using government-held data e.g. the Index of Multiple Deprivation (IMD) for health research and service planning. However, alternative approaches may be necessary as key datasets (e.g. the decennial census and specific welfare claims) may not be available in the future. 'Big data' from the private sector could help meet this need. Experian collates diverse information to produce socio-demographic and lifestyle variables, primarily for marketing purposes. Unlike traditional deprivation measures, these variables are intended to reflect affluence and consumption patterns. We assessed the overlap between deprivation measures and Experian's British population segmentation (Mosaic Groups) to establish the utility and feasibility of bringing together commercial and health data for public health purposes.

Methods Experian Mosaic classifies all UK consumers into 15 distinct groups at the postcode level which comprehensively describes their socio-economic and sub-cultural behaviour, based on 1,754,408 unique postcodes (mean population 39). Thus, each postcode can be allocated to only one Mosaic Group. These data were linked to widely used deprivation measures, i.e. Index of Multiple Deprivation (IMD) and its devolved equivalents for Scottish (SIMD) and Welsh (WIMD) populations and Carstairs quintiles ranked from 1 to 5 (most to least deprived) based on full postcode. Cochran-Armitage tests were used to determine if there were significant trends in the proportions of deprivation quintiles within each Mosaic Group.

Results The Experian segmentation showed good population coverage; 92% of the UK population was included in the dataset. IMD quintiles and Mosaic Groups were associated (all P-values for trend <0.05); for example, the proportions increased with deprivation in Municipal Challenge (0.1% and 73.6% in least and most deprived quintiles) and Family Basics (1.1% and 50.2%, respectively). For some Mosaic Groups the proportions increased with decreasing deprivation, e.g. Prestige Positions (0.3% and 67.1% in most and least deprived, respectively). However, there were Mosaic Groups (e.g. City Prosperity, Country Living) that showed no consistent trend with deprivation, indicating Mosaic is capturing a different aspect of socio-economic circumstances. Similar patterns were found for Carstairs and measures of IMD for Scottish and Welsh populations.

Conclusion Experian Mosaic Groups appear to capture different aspects of socioeconomic circumstances to deprivation measures. A key limitation of our study to date is the lack of investigation of health outcomes. These marketing data may provide new insights into the social determinants of health at a very small area level and could help plan service delivery.

Gender

OP89 PRE-PREGNANCY AND POSTNATAL DEPRESSIVE SYMPTOMS ARE ASSOCIATED WITH QUALITY OF MOTHER-CHILD RELATIONSHIPS; LONGITUDINAL DATA FROM THE SOUTHAMPTON WOMEN'S SURVEY

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Background Maternal mental health difficulties have been associated with poor outcomes for children, possibly because they affect the quality of the relationship between mother and child. We examined associations between maternal depressive symptoms before pregnancy, and again 6 months postnatally, and quality of the mother-child relationship in the Southampton Women's Survey (SWS).

Methods The SWS is a population based cohort study of 12 583 women aged 20–34 years who were assessed when not pregnant; those enrolled during the latter half of the recruitment period completed the General Health Questionnaire (GHQ-12), a short screening instrument with good sensitivity for depression and anxiety disorders. Women who became pregnant and their children (n=3158) were followed up. Six months post-partum, mothers completed the Edinburgh Postnatal Depression Scale (EPDS) questionnaire to determine depressive symptoms. Established cut-offs for each scale were used to determine the presence or absence of depressive symptoms at the two time points. A summary pre-pregnancy and postnatal depressive symptoms 4-level categorical variable was derived indicating symptoms at neither, one or other, or both periods. When the child was 3 years old, mothers completed the Pianta Child-Parent Relationship Scale (CPRS), from which closeness and conflict scores were derived. To normalise these scores a Fisher-Yates transformation was used so that the scores are presented in standard deviation (SD) units. Linear regression was used to relate the two mother-child relationship measures to depressive symptoms, adjusting for confounding factors identified using a Directed Acyclic Graph: receipt of benefits, employment, parity and educational attainment.

Results Among women with GHQ-12 and EPDS data, 1441 completed the Pianta CPRS. Presence of depressive symptoms was identified before pregnancy in 28% of mothers and postnatally in 42%. After adjustment for confounders, and compared with those with no symptoms during either time period, those who only had depressive symptoms postnatally had conflict scores that were elevated by 0.28SD (95% CI: 0.16–0.41), whereas scores for those with depressive symptoms at both time periods were elevated by 0.53SD (95% CI: 0.39–0.68). Closeness scores were reduced in those with symptoms at both time periods, being 0.26SD (95% CI: 0.08–0.43) lower than for those with no symptoms, but were not