Differences in Experience Analysis Methodology

This paper describes the methodology used to analyse differences in self-reported experiences of different people using health and care services. The same broad methodology is used across all surveys, with some slight adaptations made to reflect the different survey designs. These adaptations are described within the report for the analysis for the specific survey.

The analysis involves a statistical modelling technique, which takes into account all of the available characteristics and factors that could have an effect on the likelihood of a service user reporting a positive experience. The advantage of this approach is that it doesn't look at one characteristic in isolation, which may potentially provide misleading results, but takes into account everything that we know about the people who responded to the survey.

Data Analysis and Interpretation

The experience questions in the surveys are typically on a five point scale. In order to simplify the analysis and results, answers are combined into either positive or “non-positive” similar to the percentage positive figure used in the local and national reporting of the survey results. For example, the answer scale ranges from ‘Excellent’ to ‘Very poor’, ‘Excellent’ and ‘Good’ have been classed as positive responses while ‘Fair’, ‘Poor’ and ‘Very poor’ have been classed as non-positive.

The analysis uses the responses for all questions which could be classified as positive/non-positive, the ‘About You’ questions and generalised linear mixed model (GLMM) methods to investigate the relationship between self-reported patient experiences, various different patient characteristics and supplementary factors (e.g. urban-rural classification; SIMD). The GLMM method is used due to its ability to include random as well as fixed effects during analysis.

The analysis uses SAS Enterprise Guide 5.1 Proc Glimmix coding as it fits a GLMM model variable of analysis using one or multiple classification variables. Before the model can be developed, the data is proofread for any irregular or unusual values which may introduce issues with the analysis. To overcome these issues, adjustments can be made to the data:

- Analysis of low frequency responses would produce less reliable results so smaller groups are combined so they fit the model for analysis. For example, if sexual orientation categories ‘Bisexual’ and ‘Gay or Lesbian’ have low frequencies they would be merged with ‘Other’. Details on the specific categories used are given in the individual reports.

- Some questions allow the patients to provide multiple responses, which produces multiple variables which can affect analysis. For example, a question on pre-existing conditions asks respondents to ‘tick all that apply’. Response options 1-7 correspond to different disabilities/conditions, while 8 corresponds to none of the above (i.e. no disability/condition). Where an individual selected multiple options for this question, they are classified as 9 which indicates that they have more than one disability/condition.
Results

The model generates odds ratios for the various factors analysed. The odds ratio is used to determine whether a particular group of patients is more or less likely to give a positive response when compared with a reference group (usually selected to be the largest group). If an odds ratio (and lower confidence limit) is above 1, then the group has reported better experience than the reference group. If the odds ratio (and upper confidence limit) are below 1, the reported experience of the group is worse.

Even if there were no systematic difference between groups, we would not expect the responses to be exactly the same in our survey data – random variations are likely to make the value vary slightly from 1. A confidence interval of 95% allows us to judge when the difference from 1 is large enough to be interpreted as a difference attributable to the group, rather than random variation. If the confidence interval does not include 1 we say that the difference is statistically significant.

Odds ratios are a measure of comparison, showing how likely people within a given group are to give a positive response compared with those in the reference group. They are not a measure of how positive the responses were from a particular group.

Limitations of the analysis

It is important to note that any differences in experience is a complex issue where a number of factors may play a role in influencing the experience. In particular, differences reported around patient characteristics could reflect real inter-group differences in the quality of services received, or inter-group differences in subjective factors such as expectations, perceptions or the way questions are answered, or some combination of these factors. The model does not consider interaction effects to avoid over-complicating both the analysis and the interpretation of results.

People report from their own perspective and judge against their own expectations which means that there are factors other than their own experience that influence what they report. Efforts are made to minimise the effect of subjectivity by asking questions that focus on specific events rather than overall satisfaction, and by testing questions with people from a range of backgrounds.

The statistical techniques used in the analysis do not imply causality. It is not known from the associations identified whether the increased likelihood of reporting a positive experience is the direct result of the factors included in the model or whether some other factor, not included in the model, is having a significant impact.

Responses with missing values for one or all of the demographic questions are excluded from the analysis. This is a limitation of the technique and a possible source of bias, especially when several variables with a reasonably high number of non-responses are included in the model.

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