How to avoid bias in research

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About this guide

Healthwatch research should be as fair and unbiased as possible. We have a duty to ensure that our insight is objective and uninfluenced by personal views or preconceptions.

This guidance outlines how you can identify and minimise bias in your research so that you can report your findings in an objective way.

What is bias?

Bias is something that can occur intentionally or unintentionally. It is where an activity, action or research finding may be skewed to show favour or disfavour towards a particular person, group or way of working.

Managing bias underpins several of the core values in conducting good quality research. When bias is not managed well, it can mean that the information collected becomes skewed and potentially inaccurate.

It's important during the research planning stage to consider any potential risk of bias and take clear steps to reduce this. It may not always be possible to reduce bias however if this is the case, you need to be transparent and make this known when reporting your findings.

Example: Exploring young people's awareness of sexual health services

If you only interview those who have been to sexual health clinics, you will miss out on hearing the views of young people who would rather visit their GP or who don't go to sexual health clinics due to cultural barriers or perceptions. The results from this study will only provide a partial picture of the community.

One way to tackle this could be to approach local schools, colleges or local youth groups who may be able to help get responses from more diverse backgrounds. If you are unable to, then you should explain why in your report.

Different types of bias

Sampling bias

Sampling bias occurs when the group of people you choose to talk to cannot be considered as representative of the group of people your research focuses on. How you choose the people that you want to talk to is essential when managing sampling bias.

Example: Understanding the experiences of working-age adults

Your research shows that those that fed back are white, male and over 40 years old. Their feedback cannot be used to comment on the experiences of any other age group, gender or ethnicity, so you cannot achieve your research objective of understanding experiences of ALL working-age adults.

Opportunity sampling

This common sampling method is based on convenience; people are chosen based on if they are available at the time. This is perhaps the most commonly used method of sampling used by Healthwatch as is often the easiest, however, it may not always provide a representative sample and therefore could be biased.

Example: Experiences of the new Accident and Emergency centre

Using opportunity sampling, you stand outside the A&E centre and ask the people who come out of the building to share their views. Although this is the most practical way to gather this information, you may be collecting feedback from people who were quickly discharged from A&E and had a positive experience to share.

To manage this, you could collect data at different times on one day or over a few days, if feasible, to build a more accurate picture.

Self-selection sampling

S*elf-selection sampling* is when people select themselves to take part in the research. There will be reasons why some people choose to take part, whilst others don't so this could cause an unrepresentative sample. For instance, people who choose to participate may have higher levels of confidence than those who don't. Alternatively, people who participate may have a stronger opinion on the research subject than those who don't.

Example: Experiences of using NHS 111

Using self-selection sampling, you embed a link to an online survey on your website and share the link on your social media channels asking people to get in touch if they wish to share their views.

This will rely on a number of factors, including people knowing that you exist as they follow your channels, rather than hearing from people who have never interacted with you before. As a result, your sample could include a high proportion of those extremely passionate about health and social care.

Random sampling

The best way to reduce sampling bias is to use *random sampling*. In random sampling, each individual in the target population has an equal opportunity of being chosen. Each participant is chosen at random.

Example: A project on evaluating assessments for domiciliary care

To pick your participants using random sampling, you ask your council for a list of people who have had assessments (this is the target population). You then number each person on the list and use a number generator to pick out a sample.

It is unlikely to be feasible for Healthwatch to use random sampling. The best way to overcome this is to acknowledge the limitations in your research report and use the two other methods of

sampling in a mixed method approach. In doing so, there is a higher probability of reducing bias in your research.

You may also want to consider whether you should undertake additional focussed research with hard to reach groups.

> **Example: A mixed method approach**
>
> In the earlier A&E research scenario, you could combine standing outside the A&E to ask people about their experiences and undertake a wider survey of the local population.

Research method bias

If you only use online surveys to collect data, you will not get the views of people who can't or don't want to do online surveys. To minimise this, advertise your survey by poster, targeting places and groups that might not want to or be able to use online surveys. Consider giving people other ways to provide feedback, for example, over the phone or by post and have paper copies of your survey readily available.

Question bias

When creating questions for your interview or survey it is important to recognise *how* a question is written or said and how this can affect the answer given.

- A *leading question* prompts or encourages a certain answer.
- A *closed question* allows only a limited answer – usually yes/no.
- A *non-leading question* allows any answer, and therefore reduces risk of bias.

It's important to note that children, young people and vulnerable adults are more susceptible to get influenced when they are asked leading questions.

> **Example: An Enter and View visit to a care home**
>
> **A leading, closed question:**
>
> A resident tells you they have been served cold food. To find out more, you can ask:
>
> "Were you angry about being served cold food?" This question assumes the emotion felt by the resident about being served cold food and may not encourage them to tell you more about their experience.
>
> **A non-leading, open question:**
>
> "How did you feel about being served cold food?" This question allows the resident to express their emotions and tell you more about how they felt.
>
> **A leading, closed question:**
>
> You might go on to ask:

"Did you complain?" – this may not encourage the resident to tell you more. If they answer "no", they might feel you think they should have complained.

A non-leading, open question:

"What did you do after being served cold food?" – this allows the resident to open up about what they did next.

Top tips to ask questions in the right way

• Ask open ended questions wherever possible. These start with: "Why?" "When?" "Where?" "What?" "How?" "Who?".
• Ask closed questions only when you need to confirm what someone is saying.
• Avoid asking leading questions.
• Combine questioning techniques by having both open and closed questions. This can help achieve the right balance.

Where possible, do not repeat a question more than necessary. This can cause people to second-guess themselves and change their original answer. If you want to get more information, use pre-planned, neutral prompts.

Interviewer bias

Interviewer bias occurs when the person asking questions, intentionally or unintentionally, influences the person they are talking to in some way. For example, using a certain tone of voice.

Ways to reduce interview bias include:

• Ensure you thoroughly brief everyone involved in undertaking the research on what needs to be asked, how to prompt (if relevant), how to answer queries people may have during the interview, and how to handle sensitive topics.
• Brief researchers beforehand about the need to take an unbiased approach and react neutrally to answers given.
• Researchers should keep an open mind about is said and avoid making assumptions.

Social desirability bias

Social desirability occurs when people answer questions with what they think the researcher would like to hear, as opposed to their true view. This can result in under-reporting an undesirable trait they have in favour of more socially acceptable traits. People are particularly susceptible to this type of bias when talking about taboo or illegal topics, such as personal use of illegal drugs.

Ways to reduce social desirability bias are:

• Anonymity
  If people believe their answers will be treated anonymously and confidentially, they will be more willing to answer honestly. Surveys are a method better suited for anonymity in comparison to face-to-face methods.
• Wording
  Reinforce there is no right or wrong answer and make the person feel free to pass comments without judgment.

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Ten top tips on minimising bias

1. Involve multiple researchers, and more than one person to code the data. If more than one person is involved in collecting and analysing the research data, then the chances of personal views influencing the findings will be minimised.
2. Consider using more than one method of data collection. This will help test the consistency of your findings.
3. You can ask the participants to review your results, to see whether your interpretations represent their beliefs accurately.
4. Verify your findings with external data sources, such as similar work by other Healthwatch or other organisations. If their findings support your interpretations, you can be more confident about your results.
5. Be clear about the outcomes you want to achieve through your research.
6. Be inclusive and involve as diverse groups as possible.
7. Understand and consider the needs and requirements of the participants.
8. Be aware of issues that may cause bias in your results.
9. Mitigate issues to prevent any bias.
10. Be transparent and honest about your approach.