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Interviews and focus groups in qualitative research: an update for the digital age

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Abstract

Qualitative research is used increasingly in dentistry, due to its potential to provide meaningful, in-depth insights into participants' experiences, perspectives, beliefs and behaviours. These insights can subsequently help to inform developments in dental practice and further related research. The most common methods of data collection used in qualitative research are interviews and focus groups. While these are primarily conducted face-to-face, the ongoing evolution of digital technologies, such as video chat and online forums, has further transformed these methods of data collection. This paper therefore discusses interviews and focus groups in detail, outlines how they can be used in practice, how digital technologies can further inform the data collection process, and what these methods can offer dentistry.

In Brief:

1. Qualitative research is used increasingly in dentistry. Interviews and focus groups remain the most common qualitative methods of data collection.
2. The advent of digital technologies has transformed how qualitative research can now be undertaken.
3. Interviews and focus groups can offer significant, meaningful insight into participants' experiences, beliefs and perspectives, which can help to inform developments in dental practice.

Introduction

Traditionally, research in dentistry has primarily been quantitative in nature.(1) However, in recent years, there has been a growing interest in qualitative research within the profession, due to its potential to further inform developments in practice, policy, education and training. Consequently, in 2008, the British Dental Journal (BDJ) published a four paper qualitative research series,(2-5) to help increase awareness and understanding of this particular methodological approach.

Since the papers were originally published, two scoping reviews have demonstrated the ongoing proliferation in the use of qualitative research within the field of oral healthcare.(1, 6) To date, the original four paper series continue to be well cited and two of the main papers remain widely accessed among the BDJ readership.(2, 3) The potential value of well-conducted qualitative research to evidence-based practice is now also widely recognised by service providers, policy makers, funding bodies and those who commission, support and use healthcare research.

Besides increasing standalone use, qualitative methods are now also routinely incorporated into larger mixed method study designs, such as clinical trials, as they can offer additional, meaningful insights into complex problems that simply could not be provided by quantitative methods alone. Qualitative methods can also be used to further facilitate in-depth understanding of important aspects of clinical trial processes, such as recruitment. For example, Ellis et al. investigated why edentulous older patients, dissatisfied with conventional dentures, decline implant treatment, despite its established efficacy, and frequently refuse to participate in related randomised clinical trials, even when financial constraints are removed.(7) Through the use of focus groups in Canada and the UK, the authors found that fears of pain and potential complications, along with perceived embarrassment, exacerbated by age, are common reasons why older patients typically refuse dental implants.(7)

The last decade has also seen further developments in qualitative research, due to the ongoing evolution of digital technologies. These developments have transformed how researchers can access and share information, communicate and collaborate, recruit and engage participants, collect and analyse data and disseminate and translate research findings.(8) Where appropriate, such technologies are therefore capable of extending and enhancing how qualitative research is undertaken.(9) For example, it is now possible to collect qualitative data via instant messaging, email or online/video chat, using appropriate online platforms.

These innovative approaches to research are therefore cost-effective, convenient, reduce geographical constraints and are often useful for accessing 'hard to reach' participants (e.g. those who are immobile or socially isolated).(8, 9) However, digital technologies are still relatively new and constantly evolving and therefore present a variety of pragmatic and methodological challenges. Furthermore, given their very nature, their use in many qualitative studies and/or with certain participant groups may be inappropriate and should therefore always be carefully considered. While it is beyond the scope of this paper to provide a detailed explication regarding the use of digital technologies in qualitative research, insight is provided into how such technologies can be used to facilitate the data collection process in interviews and focus groups.

In light of such developments, it is perhaps therefore timely to update the main paper (3) of the original BDJ series. As with the previous publications, this paper has been purposely written in an accessible style, to enhance readability, particularly for those who are new to qualitative research. While the focus remains on the most common qualitative methods of data collection – interviews and focus groups - appropriate revisions have been made to provide a novel perspective, and should therefore be helpful to those who would like to

know more about qualitative research. This paper specifically focuses on undertaking qualitative research with adult participants only.

Overview of qualitative research

Qualitative research is an approach that focuses on people and their experiences, behaviours and opinions.(10, 11) The qualitative researcher seeks to answer questions of “how” and “why”, providing detailed insight and understanding,(11) which quantitative methods cannot reach.(12) Within qualitative research, there are distinct methodologies influencing how the researcher approaches the research question, data collection and data analysis.(13) For example, phenomenological studies focus on the lived experience of individuals, explored through their description of the phenomenon. Ethnographic studies explore the culture of a group and typically involve the use of multiple methods to uncover the issues.(14)

While methodology is the “thinking tool”, the methods are the “doing tools”;(13) the ways in which data are collected and analysed. There are multiple qualitative data collection methods, including interviews, focus groups, observations, documentary analysis, participant diaries, photography and videography. Two of the most commonly used qualitative methods are interviews and focus groups, which are explored in this article. The data generated through these methods can be analysed in one of many ways, according to the methodological approach chosen. A common approach is thematic data analysis, involving the identification of themes and subthemes across the data set. Further information on approaches to qualitative data analysis has been discussed elsewhere. (1).

Qualitative research is an evolving and adaptable approach, used by different disciplines for different purposes. Traditionally, qualitative data, specifically interviews, focus groups and observations, have been collected face-to-face with participants. In more recent years, digital technologies have contributed to the ongoing evolution of qualitative research. Digital technologies offer researchers different ways of recruiting participants and collecting data, and offers participants opportunities to be involved in research that is not necessarily face-to-face.

Interviews

Research interviews are a fundamental qualitative research method (15) and are utilised across methodological approaches. Interviews enable the researcher to learn in depth about the perspectives, experiences, beliefs and motivations of the participant.(3, 16) Examples include, exploring patients’ perspectives of fear/anxiety triggers in dental treatment,(17) patients’ experiences of oral health and diabetes,(18) and dental students’ motivations for their choice of career.(19)

Interviews may be structured, semi-structured or unstructured,(3) according to the purpose of the study, with less structured interviews facilitating a more in depth and flexible interviewing approach.(20) Structured interviews are similar to verbal questionnaires and are used if the researcher requires clarification on a topic; however they produce less in-depth data about a participant’s experience.(3) Unstructured interviews may be used when

little is known about a topic and involves the researcher asking an opening question;(3) the participant then leads the discussion.(20) Semi-structured interviews are commonly used in healthcare research, enabling the researcher to ask predetermined questions,(20) while ensuring the participant discusses issues they feel are important.

Interviews can be undertaken face-to-face or using digital methods when the researcher and participant are in different locations. Audio-recording the interview, with the consent of the participant, is essential for all interviews regardless of the medium as it enables accurate transcription; the process of turning the audio file into a word-for-word transcript. This transcript is the data, which the researcher then analyses according to the chosen approach.

Types of interview

Qualitative studies often utilise one-to-one, face-to-face interviews with research participants. This involves arranging a mutually convenient time and place to meet the participant, signing a consent form and audio-recording the interview. However, digital technologies have expanded the potential for interviews in research, enabling individuals to participate in qualitative research regardless of location.

Telephone interviews can be a useful alternative to face-to-face interviews and are commonly used in qualitative research. They enable participants from different geographical areas to participate and may be less onerous for participants than meeting a researcher in person.(15) A qualitative study explored patients' perspectives of dental implants and utilised telephone interviews due to the quality of the data that could be yielded.(21) The researcher needs to consider how they will audio record the interview, which can be facilitated by purchasing a recorder that connects directly to the telephone. One potential disadvantage of telephone interviews is the inability of the interviewer and researcher to see each other. This is resolved using software for audio and video calls online – such as Skype - to conduct interviews with participants in qualitative studies. Advantages of this approach include being able to see the participant if video calls are used, enabling observation of non-verbal communication, and the software can be free to use. However, participants are required to have a device and internet connection, as well as being computer literate, potentially limiting who can participate in the study. One qualitative study explored the role of dental hygienists in reducing oral health disparities in Canada.(22) The researcher conducted interviews using Skype, which enabled dental hygienists from across Canada to be interviewed within the research budget, accommodating the participants' schedules.(22)

A less commonly used approach to qualitative interviews is the use of social virtual worlds. A qualitative study accessed a social virtual world – Second Life – to explore the health literacy skills of individuals who use social virtual worlds to access health information.(23) The researcher created an avatar and interview room, and undertook interviews with participants using voice and text methods.(23) This approach to recruitment and data collection enables individuals from diverse geographical locations to participate, while remaining anonymous if they wish. Furthermore, for interviews conducted using text methods, transcription of the interview is not required as the researcher can save the written conversation with the participant, with the participant's consent. However, the

researcher and participant need to be familiar with how the social virtual world works to engage in an interview this way.

Conducting an interview

Ensuring informed consent prior to any interview is a fundamental aspect of the research process. Participants in research must be afforded autonomy and respect; consent should be informed and voluntary.(24) Individuals should have the opportunity to read an information sheet about the study, ask questions, understand how their data will be stored and used, and know that they are free to withdraw at any point without reprisal. The qualitative researcher should take written consent before undertaking the interview. In a face-to-face interview, this is straightforward: the researcher and participant both sign copies of the consent form, keeping one each. However, this approach is less straightforward when the researcher and participant do not meet in person. A recent protocol paper outlined an approach for taking consent for telephone interviews, which involved: audio recording the participant agreeing to each point on the consent form, the researcher signing the consent form and keeping a copy, and posting a copy to the participant.(25) This process could be replicated in other interview studies using digital methods.

There are advantages and disadvantages of using face-to-face and digital methods for research interviews. Ultimately, for both approaches, the quality of the interview is determined by the researcher.(16) Appropriate training and preparation are thus required. Healthcare professionals can use their interpersonal communication skills when undertaking a research interview, particularly questioning, listening and conversing.(3) However, the purpose of an interview is to gain information about the study topic,(26) rather than offering help and advice.(3) The researcher therefore needs to listen attentively to participants, enabling them to describe their experience without interruption.(3) The use of active listening skills also help to facilitate the interview.(14) Spradley outlined elements and strategies for research interviews,(27) which are a useful guide for qualitative researchers:

- Greeting and explaining the project/interview;
- Asking descriptive (broad), structural (explore response to descriptive) and contrast (difference between) questions;
- Asymmetry between the researcher and participant talking;
- Expressing interest and cultural ignorance;
- Repeating, restating and incorporating the participant's words when asking questions;
- Creating hypothetical situations;
- Asking friendly questions;
- Knowing when to leave.

For semi-structured interviews, a topic guide (also called an interview schedule) is used to guide the content of the interview - an example of a topic guide is outlined in Box One. The topic guide, usually based on the research questions, existing literature and, for healthcare professionals, their clinical experience, is developed by the research team. The topic guide should include open ended questions that elicit in depth information, and offer participants the opportunity to talk about issues important to them. This is vital in qualitative research where the researcher is interested in exploring the experiences and perspectives of

participants. It can be useful for qualitative researchers to pilot the topic guide with the first participants,(10) to ensure the questions are relevant and understandable, and amending the questions if required.

<p>Study focus: Parents' experiences of brushing their child's (aged 0-5) teeth</p> <ol style="list-style-type: none">1. Can you tell me about your experience of cleaning your child's teeth? Prompts: How old was your child when you started cleaning their teeth? Why did you start cleaning their teeth at that point? How often do you brush their teeth? What do you use to brush their teeth and why?2. Could you explain how you find cleaning your child's teeth? Prompts: Do you find anything difficult? What makes cleaning their teeth easier for you?3. How has your experience of cleaning your child's teeth changed over time? Prompts: Has it become easier or harder? Have you changed how often and how you clean their teeth? If so, why?4. Could you describe how your child finds having their teeth cleaned? Prompts: What do they enjoy about having their teeth cleaned? Is there anything they find upsetting about having their teeth cleaned?5. Where do you look for information/advice about cleaning your child's teeth? Prompts: What did your Health Visitor tell you about cleaning your child's teeth? (If anything) What has the Dentist told you about caring for your child's teeth? (If visited) Have any family members given you advice about how to clean your child's teeth? If so, what did they tell you? Did you follow their advice?6. Is there anything else you would like to discuss about this?

Box One: Example of a topic guide

Regardless of the medium of interview, the researcher must consider the setting of the interview. For face-to-face interviews, this could be in the participant's home, in an office or another mutually convenient location. A quiet location is preferable to promote confidentiality, enable the researcher and participant to concentrate on the conversation, and to facilitate accurate audio-recording of the interview. For interviews using digital methods the same principles apply: a quiet, private space where the researcher and participant feel comfortable and confident to participate in an interview.

Focus groups

A focus group is a moderated group discussion on a pre-defined topic, for research purposes.(28, 29) While not aligned to a particular qualitative methodology (e.g. grounded theory or phenomenology) as such, focus groups are used increasingly in healthcare research, as they are useful for exploring collective perspectives, attitudes, behaviours and experiences. Consequently, they can yield rich, in-depth data and illuminate agreement and inconsistencies (28) within and, where appropriate, between groups. Examples include public perceptions of dental implants and subsequent impact on help-seeking and decision making,(30) and general dental practitioners' view on patient safety in dentistry.(31)

Focus groups can be used alone or in conjunction with other methods, such as interviews or observations, and can therefore help to confirm, extend or enrich understanding and provide alternative insights.(28) The social interaction between participants often results in lively discussion and can therefore facilitate the collection of rich, meaningful data. However, they are complex to organise and manage, due to the number of participants, and may also be inappropriate for exploring particularly sensitive issues that many participants may feel uncomfortable about discussing in a group environment.

Focus groups are primarily undertaken face-to-face but can now also be undertaken online, using appropriate technologies such as email, bulletin boards, online research communities, chat rooms, discussion forums, social media and video conferencing.(32) Using such technologies, data collection can also be synchronous (e.g. online discussions in 'real time') or, unlike traditional face-to-face focus groups, asynchronous (e.g. online/email discussions in 'non-real time'). While many of the fundamental principles of focus group research are the same, regardless of how they are conducted, a number of subtle nuances are associated with the online medium.(32) Some of which are discussed further in the following sections.

Focus group considerations

Some key considerations associated with face-to-face focus groups are: how many participants are required, should participants within each group know each other (or not) and how many focus groups are needed within a single study? These issues are much debated and there is no definitive answer. However, the number of focus groups required, will largely depend on the topic area, the depth and breadth of data needed, the desired level of participation required (29) and the necessity (or not) for data saturation.

The optimum group size is around six to eight participants (excluding researchers) but can work effectively with between three and 14 participants.(3) If the group is too small, it may limit discussion, but if it is too large, it may become disorganised and difficult to manage. It is, however, prudent to over-recruit for a focus group by approximately two to three participants, to allow for potential non-attenders. For many researchers, particularly novice researchers, group size may also be informed by pragmatic considerations, such as the type of study, resources available and moderator experience.(28) Similar size and mix considerations exist for online focus groups. Typically, synchronous online focus groups will have around three to eight participants but, as the discussion does not happen simultaneously, asynchronous groups may have as many as 10-30 participants.(33)

The topic area and potential group interaction should guide group composition considerations. Pre-existing groups, where participants know each other (e.g. work colleagues) may be easier to recruit, have shared experiences and may enjoy a familiarity, which facilitates discussion and/or the ability to challenge each other courteously.(3) However, if there is a potential power imbalance within the group or if existing group norms and hierarchies may adversely affect the ability of participants to speak freely, then 'stranger groups' (i.e. where participants do not already know each other) may be more appropriate.(34, 35)

Focus group management

Face-to-face focus groups should normally be conducted by two researchers; a moderator and an observer.(28) The moderator facilitates group discussion, while the observer typically monitors group dynamics, behaviours, non-verbal cues, seating arrangements and speaking order, which is essential for transcription and analysis. The same principles of informed consent, as discussed in the interview section, also apply to focus groups, regardless of medium. However, the consent process for online discussions will probably be managed somewhat differently. For example, while an appropriate participant information leaflet (and consent form) would still be required, the process is likely to be managed electronically (e.g. via email) and would need to specifically address issues relating to technology (e.g. anonymity and use, storage and access to online data) (32).

The venue in which the focus group is conducted should be of a suitable size, private, quiet, free from distractions and in a collectively convenient location. It should also be conducted at a time appropriate for participants,(28) as this is likely to promote attendance. As with interviews, the same ethical considerations apply (as discussed earlier). However, online focus groups may present additional ethical challenges associated with issues such as informed consent, appropriate access and secure data storage. Further guidance can be found elsewhere.(8, 32)

Before the focus group commences, the researchers should establish rapport with participants, as this will help to put them at ease and result in a more meaningful discussion. Consequently, researchers should introduce themselves, provide further clarity about the study and how the process will work in practice and outline the 'ground rules'. Ground rules are designed to assist, not hinder, group discussion and typically include:(3, 28, 29)

- Discussions within the group are confidential to the group
- Only one person can speak at a time
- All participants should have sufficient opportunity to contribute
- There should be no unnecessary interruptions while someone is speaking
- Everyone can be expected to be listened to and their views respected
- Challenging contrary opinions is appropriate, but ridiculing is not

Moderating a focus group requires considered management and good interpersonal skills to help guide the discussion and, where appropriate, keep it sufficiently focused. Avoid, therefore, participating, leading, expressing personal opinions or correcting participants' knowledge (3, 28) as this may bias the process. A relaxed, interested demeanour will also help participants to feel comfortable and promote candid discourse. Moderators should also prevent the discussion being dominated by any one person, ensure differences of opinions

are discussed fairly and, if required, encourage reticent participants to contribute.(3) Asking open questions, reflecting on significant issues, inviting further debate, probing responses accordingly, and seeking further clarification, as and where appropriate, will help to obtain sufficient depth and insight into the topic area.

Moderating online focus groups requires comparable skills, particularly if the discussion is synchronous, as the discussion may be dominated by those who can type proficiently.(36) It is therefore important that sufficient time and respect is accorded to those who may not be able to type as quickly. Asynchronous discussions are usually less problematic in this respect, as interactions are less instant. However, moderating an asynchronous discussion presents additional challenges, particularly if participants are geographically dispersed, as they may be online at different times. Consequently, the moderator will not always be present and the discussion may therefore need to occur over several days, which can be difficult to manage and facilitate and invariably requires considerable flexibility.(32) It is also worth recognising that establishing rapport with participants via online medium is often more challenging than via face-to-face and may therefore require additional time, skills, effort and consideration.

As with research interviews, focus groups should be guided by an appropriate interview schedule, as discussed earlier in the paper. For example, the schedule will usually be informed by the review of the literature and study aims and will merely provide a topic guide to help inform subsequent discussions. To provide a verbatim account of the discussion, focus groups must be recorded, using an audio-recorder with a good quality multi-directional microphone. While videotaping is possible, some participants may find it obtrusive,(3) which may adversely affect group dynamics. The use (or not) of a video recorder, should therefore be carefully considered.

At the end of the focus group, a few minutes should be spent rounding up and reflecting on the discussion.(28) Depending on the topic area, it is possible that some participants may have revealed deeply personal issues and may therefore require further help and support, such as a constructive debrief or possibly even referral on to a relevant third party. It is also possible that some participants may feel that the discussion did not adequately reflect their views and, consequently, may no longer wish to be associated with the study.(28) Such occurrences are likely to be uncommon, but should they arrive, it is important to further discuss any concerns and, if appropriate, offer them the opportunity to withdraw (including any data relating to them) from the study. Immediately after the discussion, researchers should compile notes regarding thoughts and ideas about the focus group, which can assist with data analysis and, if appropriate, any further data collection.

Conclusion

Qualitative research is increasingly being utilised within dental research to explore the experiences, perspectives, motivations and beliefs of participants. The contributions of qualitative research to evidence-based practice are increasingly being recognised, both as standalone research and as part of larger mixed-method studies, including clinical trials. Interviews and focus groups remain commonly used data collection methods in qualitative research, and with the advent of digital technologies, their utilisation continues to evolve.

However, digital methods of qualitative data collection present additional methodological, ethical and practical considerations, but also potentially offer considerable flexibility to participants and researchers. Consequently, regardless of format, qualitative methods have significant potential to inform important areas of dental practice, policy and further related research.

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