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Research Article

A Literature Review of Studies that Have Compared the Use of Face-To-Face and Online Focus Groups

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Abstract
Online communication in our work and private lives has increased significantly since the COVID-19 pandemic. Qualitative research has evolved with this trend with many studies adopting online methods. It is therefore timely to assess the use and utility of online focus groups compared to face-to-face focus groups. Traditional Pearl Growing Methodology was used to identify eligible papers. Data were extracted on data collection methods, recruitment and sampling strategies, analytical approaches to comparing data sets, the depth of data produced, participant interactions and the required resources. A total of 26 papers were included in the review. Along with face-to-face focus groups ($n = 26$) 16 studies conducted synchronous, eight asynchronous and two both online focus group methods. Most studies ($n = 22$) used the same recruitment method for both face-to-face and online focus groups. A variety of approaches to compare data sets were used in studies. Of the studies reporting on depth of data ($n = 19$), nine found that face-to-face groups produced the most in-depth data, four online groups and six equivalent data. Participant interaction was reported to be greater during face-to-face groups in 10 studies; three reported online groups produced greater interaction and six equivalent interaction. Detailed resource use comparisons were not presented in any of the studies. This review demonstrates that to date there is not a clear consensus as to whether face-to-face or online focus groups hold specific advantages in terms of the data produced and the resources required. Given these findings it may be appropriate for researchers to consider using online focus groups where time and resources are constrained, or where these are more practicable.

Introduction

During the COVID-19 pandemic governments worldwide introduced restrictions on face-to-face meetings in both our work and personal lives, resulting in the rapid implementation and increased use of online communications (Rapson, 2020). For example, remote consultation in health settings have evolved considerably since the pandemic and will continue, where appropriate, particularly in primary care settings (Murphy et al., 2021). Research too has moved online and although the use of online qualitative data collection methods is not new (Thunberg & Arnell, 2021) In-person methods were until recently the most common modality for qualitative data collection (Willemsen et al., 2022). Whilst some researchers

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may have reservations about using online methods, such as data security, logistics (Lobe et al., 2020), and the depth and quality of the collected data (Richard et al., 2020), there are also many potential advantages such as less travel for participants (Al-Izzi et al., 2020) and the ability to include geographically dispersed participants (Reisner et al., 2018).

Focus groups are a qualitative data collection method where some of these potential advantages might be apparent and where online focus groups have offered an alternate modality of data collection, both in synchronous and asynchronous formats.

Synchronous online focus groups take place 'live' and participants interact directly with each other and the moderator in real time (Willemsen et al., 2022). They can be conducted either using spoken data collection through audio-visual technology such as Skype, Zoom or Microsoft Teams or via text-based discussions (Fox et al., 2007). As participants in synchronous audio-visual groups can see each other and have real-time discussions it has been argued that the data collected are likely to be similar to those collected in face-to-face groups (Ingram & Steger, 2015). Asynchronous focus groups usually take place in online forums, chatrooms or via email and can last for days or weeks (Kenny, 2005; Nicholas et al., 2010; Seymour, 2001; Synnot et al., 2014; Tates et al., 2009), with participants being able to log in and respond at a time convenient to them (Hooley et al., 2012; Mann & Stewart, 2000).

Where researchers decide to use focus groups, they may be faced with choices regarding the modality of data collection, face-to-face or online. Whilst it might be argued that provision of absolute comparisons of focus group modalities is difficult due to contextual variations in individual studies (e.g. setting, participants, moderator, online modality) this review aimed to provide a pragmatic overview of the body of existing research that has compared the use and utility of online focus groups with more traditional face-to-face focus groups across a range of disciplines.

Methods

Search

Eligible papers were identified through Traditional Pearl Growing methodology (Schlosser et al., 2006). Traditional Pearl Growing methodology seeks out pre-filtered evidence (retrieves similar content regardless of the terminology used by individual authors) and can be used in conjunction with other methods. It differs from other search methods because it uses indexed keywords from chosen articles rather than using a formalised systematic search strategy such as a building block strategy (Schlosser et al., 2006; Sandieson, Kirkpatrick, Sandieson, & Zimmerman, 2009).

Schlosser et al., (2006) reported a high degree of precision when using Traditional Pearl Growing methods to search for relevant articles and recommends that it be considered when evidence is scattered across disciplines and the researchers are unfamiliar with the research area. At the outset both issues were relevant to this research area and we were unsure about where and how this literature would be indexed in electronic databases. Our scoping searches had revealed that the relevant literature was poorly indexed and distributed across multiple disciplines such as health, education, social sciences, business, marketing, and psychology. In these circumstances we deemed Traditional Pearl Growing to be an appropriate choice for searching the literature (Papaioannou et al., 2010).

Firstly, we identified a "pearl" paper (Woodyatt et al., 2016) through initial scoping searches. This paper was the only one returned from the scoping search that reported on similar aims to this review. Secondly, searches of the following electronic databases were undertaken: Pubmed, the Social Sciences Citation Index (SSCI), Scopus, Web of Science, Proquest and the University of Birmingham library database. These databases were chosen as the most likely to include the types of studies we were interested in. The initial searches were based on the keywords indexed in the key paper. Next the keywords, if different from those of the pearl paper, the references and the citations of eligible papers were also searched to ensure no papers were missed due to differences in indexing and keywords (Papaioannou et al., 2010).

An example search strategy is provided in Appendix 1.

Eligibility Criteria

Primary research papers, qualitative and quantitative, were included if they reported comparisons of face-to-face focus groups and online synchronous and/or asynchronous focus groups, even where this was not a specific aim of the research. Searches were limited to English language papers published from January 2000 – December 2019, based on the assumption that any research on the subject prior to this date was likely to be outdated due to the rapid advances in technology since the start of the millennium (Hewson et al., 2003).

For the purposes of this review, we included all comparisons of face-to-face and online focus groups methods returned by the searches, regardless of subject area. These included text-based, chatroom/forums, Skype, other audio-visual. Synchronous and asynchronous focus groups were considered separately because of the differences between the two modalities as outlined earlier.

Data Extraction and Reporting

A data extraction form (Appendix 2) was developed, and the following data were extracted from papers:

- Data collection methods used
- Differences and similarities in the recruitment and sampling strategy for online and face-to-face focus groups
- Analytical approaches used to compare the data produced by face-to-face and online approaches

- Reported differences in the findings and depth of data produced by both methods
- Any reported differences in participant interaction
- Any reported information on the resources required by face-to-face and online data collection

These data items were chosen because it was felt that they provided the most pertinent information to enable researchers to make an informed choice when deciding on whether to use face-to-face or online focus groups in their research.

The first author (JJ) conducted the search and read all titles and abstracts to assess eligibility for inclusion. The full texts of potential papers were reviewed by JJ and independent double screening performed by a second reviewer (JM). If agreement could not be reached it was discussed with other authors. We identified studies using varied qualitative and quantified comparisons of focus group methodologies that were not suited to formal synthesis, either qualitative or quantitative. We therefore present a narrative synthesis of study findings from the literature search (Grant & Booth, 2009).

Results

The original searches returned 2481 studies, 11 of which were duplicates. After the screening of titles and abstracts, 19 studies appeared to be potentially eligible but after reading the full papers three were excluded because they did not provide data on the comparison between data collection methods. This resulted in 16 eligible papers plus the initial "pearl" paper (Woodyatt et al., 2016). Reference and citation searching identified an additional 15 studies of which six were excluded (three reported on interviews only, and three were excluded after assessment of the full text). In total, 26 eligible studies were included. Twenty-one studies specifically aimed to compare differences between online and face-to-face focus groups, the remaining five reported on the differences although this was not a specific aim of their research (Table 1).

Summary of the Data Collection Methods Reported By The Included Studies

All included studies conducted face-to-face focus groups, alongside which 16 conducted synchronous online focus groups, eight asynchronous online focus groups and two used both synchronous and asynchronous online methods (Table 1). Three (Banfield et al., 2014; Perdok et al., 2016; van Eeden-Moorfield et al., 2008) reported using online methods as a way of triangulating the data collected with those collected from face-to-face groups and one as a means to increase the range and inclusivity of participants (Hinton, 2018). The remainder of the studies reported using face-to-face and online focus groups to compare the outputs from both methods to assess the feasibility of using online focus groups (Gadalla et al., 2016; Krol et al.,

2014) or both (Brubaker et al., 2013; Campbell et al., 2001; Walsh et al., 2009).

Recruitment and Sampling Strategy

A different approach to recruitment for the face-to-face groups and the online focus group was described in three studies. For example, in Guise's (2007) study, face-to-face participants were recruited via letters sent through support group committees and online participants were recruited via messages posted on a web-based support group. (Table 2).

13 studies considered the value and effectiveness of their chosen recruitment and sampling strategy. For example, Nicholas et al., (2010) reflected on the bias which they may have introduced by allowing participants to select which focus group format they took part in or to allocate participants to either a face-to-face focus group or an online focus group based on availability and location. Krol et al., (2014) considered the difficulties faced in recruiting young children and adolescents to both the face-to-face and online asynchronous text-based focus groups. Based on their effectiveness for paediatric patients reported by Tates and colleagues, they surmised that adolescents, in particular, would be interested in the online asynchronous focus groups (Tates et al., 2009). However, the response rate for these groups in Krol's et al., (2014) study was just 2%. Three studies reported successful recruitment to their face-to-face and online focus groups by using gatekeepers such as an independent research company to access relevant populations (Hinton, 2018; Rupert et al., 2017; van Eeden-Moorfield et al., 2008. (Table 2).

Analytical Approaches used to Compare Data Derived From Face-To-Face And Online Focus Groups

The included studies reported the use of a range of analytical approaches to comparisons made between the data produced via face-to-face and online focus groups, such as comparisons using qualitative methods alone, discourse and/or conversational analysis, reflective practice, thematic analysis, statistical methods (i.e. counting and scoring systems), or a combination of statistical and qualitative methods. The statistical analyses included comparisons of the duration of discussions, the number of words used by each participant to compare equality of participation, the number of relevant and irrelevant comments, quality and quantity of ideas, and a survey of participants' views. Seven studies did not state how comparisons were carried out. Appendix 3 provides a summary of methods used to compare data sets and the purpose of the analysis.

The Depth of Data Produced

'Depth of data' describes the characteristics and qualities of qualitative data that facilitate an effective understanding of how research participants make sense of their experiences and

Table 1. Summary of Included Studies.

Author/Year	Discipline	Face-to-face (synchronous)	Online text (synchronous)	Online text (asynchronous)	Forum and chat~(both)	Audio-visual (synchronous)	Audio only (synchronous)	Simulated* (synchronous)	Avatar^ (synchronous)
Studies comparing the use and utility of face-to-face and online focus groups									
Abrams et al. (2015)	E	Y	Y			Y			
Bruggen & Willems (2009)	MR	Y	Y						
Campbell et al. (2001)	H	Y	Y						
Cheng et al. (2009)	MR	Y	Y				Y		
Dewitte et al. (2002)	MR	Y	Y						
Gadalla et al. (2016)	MR	Y							Y
Graffigna & Bosio (2006)	SS	Y	Y	Y	Y				
Guise et al. (2007)	H	Y		Y					
Ingram & Steger (2015)	H	Y		Y		Y			
Kite & Philayrath (2017)	E	Y				Y			
Krol et al. (2014)	H	Y		Y					
Nicholas et al. (2010)	H	Y		Y					
O'Neal (2009)	E	Y		Y					
Reid & Reid (2005)	MR	Y	Y						
Richard (2018)	SS	Y	Y						
Rupert et al. (2017)	H	Y	Y			Y			
Schneider et al. (2002)	H	Y	Y						
Synnot et al. (2014)	H	Y		Y					
Underhill & Olmsted (2003) *	SS	Y	Y					Y	
van Eeden-Moorefield et al. (2008)	SS	Y	Y						
Woodyatt et al. (2016)	H	Y	Y						
Studies reporting comparisons between face-to-face and online focus groups, although not a specific aim of the study									
Banfield et al. (2014)	H	Y		Y					
Brubaker et al. (2013)	H	Y	Y						
Hinton (2018)	H	Y		Y	Y				
Perdok et al. (2016)	H	Y		Y					
Walsh et al. (2009)	H	Y	Y						

Key: H = Health, SS = Social Sciences, MR = Market Research, E = Education.
~Combines asynchronous forum and synchronous chat. Participants take part in a forum for 2 days, a chat on the evening of the second day and then a final day on the forum.
*This research was carried out on a naval base where it was difficult to be geographically dispersed. To simulate geographical distance participants were separated so they were unable to see or hear verbal and non-verbal cues and could only communicate via an internet chat room.
^In avatar groups, the participants enter an online world taking on the persona of an avatar, which can then interact with other avatars in the same environment.

Table 2. Summary of Recruitment and Sampling.

Author/Year	Recruitment approach for F2F and online groups	Allocation to groups	Sampling approach	Geographically diverse participants
Abrams et al. (2015)	Same for both	Randomisatio	Purposive	No
Banfield et al. (2014)	Different	N/A	Convenience	Both groups
Brubaker et al. (2013)	Same for both	Randomisation	Purposive	Both groups
Bruggen & Willems (2009)	Same for both	Not stated	Purposive	No
Campbell et al. (2001)	Different	N/A	Purposive	No
Cheng et al. (2009)	Same for both	Not stated	Purposive	Both groups
Dewitte et al. (2002)	Same for both	Randomisation	Purposive	No
Gadalla et al. (2016)	Same for both	Not stated	Purposive	No
Graffigna & Bosio (2006)	Same for both	Randomisation	Purposive	No
Guise et al. (2007)	Different	N/A	Convenience	No
Hinton (2018)	Same for both	Not stated	Purposive	Online only within same country
Ingram & Steger (2015)	Same for both	Not stated	Purposive	No
Kite & Philayrath (2017)	Same for both	Participant choice	Purposive	No
Krol et al. (2014)	Same for both	Participant choice	Purposive	Online only within same country
Nicholas et al. (2010)	Same for both	Other	Purposive	International
O'Neal (2009)	Same for both	Participant choice	Purposive	No
Perdok et al. (2016)	Same for both	Not stated	Purposive	Online only within same country
Reid & Reid (2005)	Same for both	Other	Purposive	No
Richard (2018)	Same for both	Randomisation	Purposive	No
Rupert et al. (2017)	Same for both	Randomisation	Purposive	Online only within same country
Schneider et al. (2002)	Same for both	Other	Purposive	Online only within same country
Synnot et al. (2014)	Same for both	Other	Purposive	Online only within same country
Underhill & Olmsted (2003)	Same for both	Randomisation`	Convenience	No
van Eeden-Moorefield et al. (2008)	Same for both	Participant choice	Purposive	Online only within same country
Walsh et al. (2009)	Same for both	Randomisation	Convenience	No
Woodyatt et al. (2016)	Same for both	Participant choice	Purposive	No

Key: F2F = face-to-face, N/A = not applicable.

the meanings they place on those experiences (Braun & Clarke, 2013; Ritchie et al., 2013). 19 of the studies reported which of their chosen data collection methods they perceived as generating greater context and data richness around the identified themes and ideas. Nine reported that face-to-face focus groups produced the greatest depth of data even though some of those data were perceived as "off-topic" (Synnot et al., 2014). When comparing the data produced in face-to-face focus groups to those produced in online focus groups, three studies made the following observations: synchronous online groups tended to elicit short, superficial answers lacking contextual detail and sometimes became more like question and answer sessions (Abrams et al., 2015; Bruggan and Willems, 2009; Schneider et al., 2002). Abrams et al., (2015) was concerned that the ability of participants to see themselves on the screen in audio-visual groups hindered

self-disclosure and non-verbal expressions. Dewitte et al., (2002) noted that the contributions from participants in the online groups remained at a constant level and less in-depth throughout the sessions whereas in the face-to-face groups, participants became more involved as the discussion progressed. Nicholas et al., (2010) found that their asynchronous group lacked contextual detail. (Table 3).

In contrast, Cheng et al., (2009) reported that synchronous online audio groups produced superior results to face-to-face groups in that the replies were of a higher quality, produced more information, and participants were more open. Both van Eeden Moorefield et al., (2008) and Willemsen et al., 2022 who were researching gay relationships suggested that the in-depth answers elicited online might be due to the perceived anonymity of the environment, which may give participants the confidence to talk about the issues more openly. Similarly,

Table 3. Summary of Depth of Data and Participant Interaction.

Author/Year	Greatest depth of data	Greatest participant interaction
Abrams et al. (2015)	F2F	F2F
Banfield et al. (2014)	NR	NR
Brubaker et al. (2013)	F2F	F2F
Bruggen & Willems (2009)	F2F	Equal between modalities
Campbell et al. (2001)	No difference between modalities	NR
Cheng et al. (2009)	Synchronous online text	Synchronous online text
Dewitte et al. (2002)	F2F	F2F
Gadalla et al. (2016)	No difference between modalities	Equal between modalities
Graffigna & Bosio (2006)	No difference between modalities	Equal between modalities
Guise et al. (2007)	No difference between modalities	NR
Hinton (2018)	NR	NR
Ingram & Steger (2015)	Asynchronous audio-visual	F2F
Kite & Philayrath (2017)	No difference between modalities	Equal between modalities
Krol et al. (2014)	F2F	F2F
Nicholas et al. (2010)	F2F	F2F
O'Neal (2009)	NR	Equal between modalities
Perdok et al. (2016)	NR	F2F
Reid & Reid (2005)	NR	F2F
Richard (2018)	NR	NR
Rupert et al. (2017)	NR	NR
Schneider et al. (2002)	F2F	F2F
Synnot et al. (2014)	F2F	F2F
Underhill & Olmsted (2003)	No difference between modalities	Equal between modalities
van Eeden-Moorefield et al. (2008)	Synchronous online text	NR
Walsh et al. (2009)	F2F	Synchronous online text
Woodyatt et al. (2016)	Synchronous online text	Synchronous online text

Key: F2F = face-to-face, NR = not reported.

Ingram (2015) in their research on public attitudes and perceptions of regional hospitals found that the online asynchronous text group provided slightly more substantial answers (e.g. more distinctive, relevant to the research aims, and providing the attitude and reasoning behind participants responses) when compared to the face-to-face groups. The remaining six studies did not find any discernible differences between online focus groups and face-to-face focus groups in terms of depth of data. Whilst seven studies did not report on the depth of the data produced by each method, they did report that all the methods used generated similar topics. Of the four studies reporting a greater depth of data from the online focus groups, three used synchronous text based modalities (Cheng et al., 2009; van Eeden-Moorefield et al., 2008; Woodyatt et al., 2016) and one asynchronous audio-visual (Ingram & Steger, 2015).

Participant Interaction

Of those reporting on participant interaction ($n = 19$) 10 studies found that face-to-face groups had the most interaction between the participants. For example, Reid (2005) who compared face-to-face focus groups with online asynchronous

groups, found that face-to-face participants showed more empathy, agreement, and solidarity compared to the online focus groups. Of the two online synchronous methods (text and audio-visual) used, Abrams et al., (2015) reported that only the audio-visual method had participant interaction which was comparable to the face-to-face groups. Walsh et al., (2009) suggested that interaction between participants in their online focus groups was facilitated using emoticons, capitalisation of text for emphasis and using an asterisk when making corrections. However, participants in this study were male college students familiar with communicating online. Cheng et al., (2009) concluded that synchronous online focus groups provided more interaction and believed that this was due to the perceived anonymity and distance between participants providing the freedom to express opinions. Similarly, Willemsen (2022) believed that participants felt confident to discuss their personal experiences on a sensitive subject because of the perceived confidential and anonymous online environment. The remaining studies reported that interaction was equal between the groups. For example, Gadalla et al., (2016) who used an online synchronous group found that participants in both the face-to-face focus groups and the online focus group interacted and shared their opinions

Table 4. Brief Guide to the Advantages and Disadvantages of Different Online Focus Group Modalities.

Advantages	Disadvantages
Text-based focus groups	
Cost-effective - text can easily be transferred to a working document, no transcription costs (Synnot, 2014; Walsh, 2009)	Lack of non-verbal cues (Im & Chee, 2012)
The use of emojis and creative use of text can replace non-verbal cues (Nicholas, 2010; Gadalla, 2016)	The need to set up a platform to host the discussions (Hewson, 2003)
Asynchronous text-based groups allow participants to participate at a time suitable to them	Synchronous text-based groups require proficiency of typing. If a participant is too slow the discussion may have moved on and leaving them feeling excluded (Fox, 2007)
Asynchronous text-based groups allow time for participants to consider their replies	Asynchronous text-based groups allow for more considered replies however this loses the spontaneity of participant responses (Murgado-Armenteros, 2012)
Audio-visual focus groups	
Synchronous audio-visual groups are closest to face-to-face groups allowing greater participant interaction (Murgado-Armenteros, 2012)	The ability for participants to see each other may make participants feel uncomfortable and restrict disclosure (Abrams, 2015)
Synchronous audio-visual groups often observe turn taking rather than participants speaking simultaneously (Murgado-Armenteros, 2012)	There may be technological problems with the audio-visual equipment (Morgan, 2013; Pennell, 2015)
Applicable to all online modalities	
Participants may feel comfortable communicating in this perceived anonymous environment which can facilitate disclosure (Tates, 2009; Woodyatt, 2016)	Not everyone may have access to the internet (Seale, 2010)
Geographically dispersed participants can be included (Synnot, 2014; Seymour, 2001)	There may be security and confidentiality concerns (Tates, 2009; Im, 2012)
	It can be difficult to develop a rapport with other participants (Seymour, 2001; Im, 2012)
	Logging-on difficulties/forgetting passwords (Tates, 2009; Im, 2012)
	Ensuring participants understand how to use the technology can be time-consuming (Seymour, 2001; Im, 2012)
	Facilitators may need to prompt more to get in-depth answers (Murgado-Armenteros, 2012)

N.B. The references quoted in this table refer to studies that have made these observations.

equally. The three studies reporting greater participant interaction in the online focus groups used synchronous text-based modalities. (Table 3).

Duration and resource use

The average duration of face-to-face and online focus groups was reported in nine studies (Cheng et al., 2009; Gadalla et al., 2016; Krol et al., 2014; Reid & Reid, 2005; Rupert et al., 2017; Synnot et al., 2014; van Eeden-Moorfield et al., 2008; Walsh et al., 2009; Woodyatt et al., 2016). For example, Reid (2005) commented that the synchronous online focus groups lasted twice as long as the face-to-face groups but found that the online groups generated less communication. Willemsen et al., 2022 suggested that the reason why the online synchronous groups took longer was due to "non-data elements" such as off-topic discussions, intragroup conflict, and the number of words used by the moderator. Asynchronous focus groups collect data in a different way to data collected by face-to-face

and synchronous focus groups and they were reportedly conducted over a period of 1 month (Banfield et al., 2014; Synnot et al., 2014) or 1 week (Hinton, 2018; Krol et al., 2014; Nicholas et al., 2010; Perdok et al., 2016). None of the included studies provided any detailed information about the resources required to conduct face-to-face focus groups, online synchronous focus groups or online asynchronous focus groups.

As discussed previously, there are a variety of modalities which can be adopted when undertaking online focus groups. Synchronous methods include audio-visual, Skype, and text-based modalities whilst asynchronous groups are usually carried out using text, chatrooms and/or forums. This variety of options means that it is difficult to directly compare and contrast between the modalities. To help researchers to make decisions about which online focus group method to use in their research we have provided a brief guide to the advantages and disadvantages of online focus groups by modality. (Table 4).

Discussion

To the best of our knowledge this is the first study to attempt to synthesise literature that has compared face-to-face and online focus group methods. Whilst more studies found advantages in terms of depth of data and participant interaction for face-to-face groups, others reported that online focus groups produced depth of data and interaction equivalent to, or better than, face-to-face groups.

The findings of this research are particularly pertinent following the rapid introduction and adoption of online communication methods due to COVID-19. During this period most qualitative data collection was undertaken using online methods and it seems likely that online methods will remain a viable option for qualitative researchers in the future (Thunberg & Arnell, 2021).

Although not a specific element of this review, it is important to recognise that there are several differences between spoken and text-based communications and these are to be considered alongside our findings when designing a focus group research study. Briefly, these differences largely fall into two categories; media richness – the ability of the modality to generate immediate interaction and feedback; and social presence – how similar a modality is to the immediacy of face-to-face interactions (Daft & Lengel, 1986; Tu, 2000). Written communication is often regarded as a more permanent account of events and tends to be more trustworthy compared to spoken communication (Prabavathi et al., 2018). Although asynchronous methods of written information can give responders time to consider and provide a more thoughtful reply, feedback on this type of written communication is not immediate and therefore does not easily fit into either of the above categories. In comparison, synchronous spoken communication is quick and direct with no option to edit what has been said and will often receive an immediate response. Additionally, spoken communication is supplemented with non-verbal cues such as body language and tonal inflections to convey meaning but can still be misinterpreted (Prabavathi et al., 2018; Kotik, 2020). By providing immediate feedback this mode of online focus group falls into both of the categories above; however, only audio-visual focus groups can be regarded as the most similar to face-to-face groups.

Our findings resonate with a recently published scoping review that focused specifically on accounts of health experiences synthesising 11 articles examining the use of face-to-face and online accounts (Davies et al., 2020). Similar to our broader review of comparative literature, Davies (2020) and colleagues found that face-to-face data collection options have some advantages in terms of data collected, contextual information and the relational aspects of data collection. However, as seen in our review they suggested that online modalities were often well suited to the consideration of particularly sensitive topics. Whilst logistically online formats had some advantages, they did not find evidence that they were less costly in terms of time and resources. In a further

systematic review of self-disclosure in online and offline formats Nguyen (2012) found no evidence to support one data collection method over the other.

Some of the included studies that focussed on sensitive topics found that participants felt more comfortable discussing their experiences in the perceived anonymity of online groups (Seale et al., 2010) and recent online focus group research agrees with this finding (Flayell et al., 2022). For example, participants who may be more introverted or those who live in culturally reserved but IT driven societies, such as the Taiwanese participants in Cheng's (2009) study, may feel more comfortable communicating online (Nicholas et al., 2010). Others have suggested that participants reveal more intimate details in an environment that they perceive to be anonymous (Estrada-Jaramillo & Farrimond, 2022; Howells et al., 2017; Reisner et al., 2018; Seale et al., 2010; Skelton et al., 2018).

The role of the moderator may also vary based on modality of data collection. A more structured intervention by the moderator may be required for online groups compared to face-to-face (Murgado-Armenteros et al., 2012; Zwaanswijk et al., 2014). This can, however, result in the facilitator unintentionally prompting and influencing replies (Murgado-Armenteros et al., 2012), and may also result in a question and answer session, rather than a discussion (Reid & Reid, 2005). Conversely, others have found that when online participants are probed for more information, they provide answers as detailed as those given in face-to-face groups (Curasi, 2001; Howells et al., 2017). We found no clear r distinction in the reported data richness between synchronous and asynchronous online focus group methods.

Explanations for observed differences in levels of interaction in online groups may inform choice of format. Murgado-Armenteros (2012) and Rolls (2019) report that there can be difficulties in achieving interaction and cohesion between participants in online synchronous focus groups, and Greenbaum (2000) and Genoe (2018) argue the lack of non-verbal cues and difficulties establishing a presence behind the computer screen can compound the problem. Nevertheless, the literature suggests that text-based synchronous and asynchronous focus groups can in some instances provide levels of interaction comparable to face-to-face groups (Gordon et al., 2021; Reisner et al., 2018; Skelton et al., 2018; Walsh et al., 2009; Woodyatt et al., 2016). Abrams (2015) in their synchronous online groups observed participants creating their own sense of community and belonging and suggest that the desire to establish an individual presence and personality may explain the need to develop a community type atmosphere.

Implications for use in Research

Online focus groups can provide advantages for researchers compared to face-to-face groups. They can be time saving and cost effective by reducing the amount of researcher and

participant travel to and from focus group locations (Hinkes, 2021; Keemink, 2022). Additionally, an online focus group can include geographically diverse participants which can be moredifficult to achieve in a face-to-face environment (Richard, 2021). Audio-visual synchronous focus groups can, to a certain degree, simulate the face-to-face environment without incurring the time and cost elements associated with face-to-face groups (Howlett, 2021; Richard, 2018).

Regardless of online focus group modality moderators may, at times, feel a lack of control especially if technical issues arise during a focus group. Hinkes (2021) recommends moderators familiarise themselves with the software and carry out a practice run prior to the commencement of focus groups. The perceived advantages of online focus groups include the simultaneous data capture of text-based groups removing the need for transcription and with Zoom and Microsoft Teams increasingly being used for synchronous online audio/visual focus groups the ability to take advantage of in-built functions such as audio/video recording, chat, and emoticons (Flayelle, 2022; Willemsen, 2022).

When deciding on which modality of focus group to include in a study the advantages and disadvantages of online groups will need to be weighed against those of face-to-face groups. It is likely that optimal formats for data collection will be influenced by the research topic of interest, the context for data collection (e.g. cultural context), the personal characteristics of those taking part in studies, as well as logistical concerns (Willemsen et al., 2022).

Strengths and Limitations

With the growth of available digital research methods, its use since the COVID-19 pandemic and increasingly time and cost limited funding we feel that this is a timely addition to the current literature in this area. This research used Traditional Pearl Growing methodology to search for relevant literature. Traditional Pearl Growing is a novel and under used methodology. It proved to be an efficient approach to searching the literature and we believe that it was the right choice of methodology for this research topic. The use of Traditional Pearl Growing methodology should be considered if researchers are faced with a similar dilemma of finding literature that is scattered across disciplines. However, due to database indexing issues our searches may have missed some of the relevant literature. Another limitation to this work is the key differences between spoken and text-based communications making comparisons between face-to-face and online focus groups complex. Factors such as participants' characteristics, different moderators, the sensitive nature of the discussion and research questions will impact on the nature of the comparisons that were possible from the included studies. The data presented in this review are reliant on the authors' interpretations of their data and their conclusions. It was not the aim of some of the included papers to compare data collection methods therefore the information in these papers is limited.

Conclusions

Increasingly peoples' lives are moving online and the COVID-19 pandemic accelerated this transition. It is therefore important that we reflect on the relative advantages and disadvantages of online and face-to-face qualitative data collection methods. This review has found that face-to face focus groups appear to produce the most in-depth data and participant interaction however, some studies reported contrary findings and ultimately decisions about optimal modalities are likely to be contextual and situational. Whilst logistically online options would appear to have several advantages researchers should carefully consider potential impacts on the data generated. For particularly sensitive and difficult to discuss issues there is reasonably good evidence that online options can provide advantages. Further research is required to evaluate whether online qualitative data collection methods may hinder participation from under-served groups and/or those without access to technology.

Data Availability Statement

All relevant data are within the paper and its supporting information files.

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Supplemental Material

Supplemental material for this article is available online.

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