

## ARTICLE

# The value of qualitative longitudinal research for researchers and policy-makers: Lessons learnt from exploring long-term impacts of flooding

Lorna J. Philip<sup>1</sup>  | Margaret Currie<sup>2</sup> | Gillian Lyon<sup>3</sup>

<sup>1</sup>Geography and Environment, School of Geoscience, University of Aberdeen, Aberdeen, UK

<sup>2</sup>Social, Economic and Geographical Sciences Department, The James Hutton Institute, Aberdeen, UK

<sup>3</sup>School of Medicine, Medical Sciences and Nutrition, University of Aberdeen, Aberdeen, UK

## Correspondence

Lorna J. Philip, Geography and Environment, School of Geoscience, University of Aberdeen, Aberdeen, UK.  
 Email: [l.philip@abdn.ac.uk](mailto:l.philip@abdn.ac.uk)

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## Abstract

This paper offers reflections about the use of a longitudinal qualitative research design in a project which explored the long term impacts of flooding in two communities in North-East Scotland. A temporal turn in the social sciences has raised the profile of longitudinal qualitative approaches, research whose diachronic framing allows trajectories and nuanced understandings of change to emerge. With reference to research which utilised a planned prospective longitudinal design, we offer reflections on methodological and project management 'lessons learnt' from undertaking a longitudinal qualitative study. Our experiences highlighted the importance of: (i) participant recruitment processes, including a need to 'oversample' to accommodate anticipated attrition rates; (ii) developing and sustaining a relationship between participants and researchers; (iii) reporting interim findings to participants, the funder and flood risk management stakeholders via a project Steering Group in particular; and (iv) agreeing a regular reporting schedule which allowed the funder and stakeholders access to findings during the lifetime of the project which, in turn, allowed impact to be generated before the final report was presented. In sharing our experiences our intention is two-fold: to open a debate in human geography about how longitudinal qualitative research could be used more widely, in natural hazards research, rural community change and other research areas; and to illustrate that longitudinal qualitative research generates insights that can contribute to evidence-based policy development, implementation and evaluation.

## KEYWORDS

evidence-based policy, flood risk management, longitudinal qualitative research, long-term impacts of flooding, participant recruitment, retention and attrition, Scotland

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## 1 | INTRODUCTION

This paper reflects on our experience of employing a longitudinal qualitative design to explore the long-term impacts of flooding on individuals and the wider communities in which they live. Flood impacts research commonly focuses on the immediate aftermath of an event. Our study focused on the post-immediate recovery period. It presents some of the methodological and project management lessons we have learnt and illustrates how our approach contributed to policy developments that were directly informed by the experiences of those who had been flooded. It is our intention to encourage more social scientists, including human geographers, to use longitudinal qualitative designs in their work by offering insights and guidance to other researchers considering this methodological approach and to those who fund and manage policy-aligned research.

Longitudinal qualitative research offers insights into experiences, patterns and processes of change. It exploits the person-centred advantages of cross-sectional qualitative research and provides insights that quantitative longitudinal research lacks. Longitudinal qualitative research is increasingly seen as a means by which evidence to support policy development, implementation and evaluation can usefully be generated (Holland et al., 2006; Thomson & McLeod, 2015). One such policy area is flood risk management, which has received increased global political and policy prominence as climate change is predicted to increase the frequency and severity of flooding.

The paper is structured as follows. First, we present an overview of the attributes of longitudinal methods, focusing specifically on longitudinal qualitative research (hereafter LQR). We then illustrate how longitudinal methods have been used in flood impacts research and introduce our long-term impacts of flooding project. Drawing upon issues raised in the methods literature, we reflect on some of the practicalities and research management lessons we have learnt through undertaking our own LQR project and offer some observations about how the strengths of LQR in policy-aligned research could be promoted to encourage more researchers and funders to consider this methodological approach to support evidence-based policy-making.

## 2 | LONGITUDINAL RESEARCH

Longitudinal research provides insights into patterns and processes of change through repeated phases of data collection. Numerous longitudinal research projects on a wide variety of topics have been undertaken by scholars from many disciplines to study diverse topics. Most longitudinal research adopts quantitative methods. In the social science methods literature, including the geography methods literature, longitudinal methods are overwhelmingly presented as quantitative approaches.<sup>1</sup> However, longitudinal *qualitative* research has a long history within the social sciences and has become more prominent recently, emerging 'as a distinct methodological paradigm around the turn of the millennium, named within the UK through journal special issues, literature reviews and funding commitments' (Thomson et al., 2014, p. 1) and aligned with 'a "temporal" turn within the social sciences' (Thomson & McLeod, 2015, p. 244). This increased prominence has, however, not been reflected in the qualitative methods in human geography literature, and little reference is made to longitudinal designs in qualitative studies.<sup>2</sup> To date, few human geographers appear to have engaged with debates about the opportunities and benefits LQR offers their scholarship.

In this section we introduce *diachronic* research designs, longitudinal research that seeks to develop an understanding of processes, causes and consequences of change over time, with a focus on longitudinal qualitative designs. We outline how longitudinal designs have been used in flood impacts research and introduce the *Assessing the Long-Term Impacts of Flooding* project, work that prompted our reflections on the practicalities of designing, deploying and managing a LQR design in policy-aligned research.

### 2.1 | From synchronic to diachronic designs

Most social science research is cross-sectional in design, providing snapshot-in-time insights into a wide range of phenomena. Such research is *synchronic* and, in consequence, research participants' changing opinions and attitudes cannot be captured effectively. To do that, researchers must move to a *diachronic* framing, where two or more periods of data collection capture information from which trajectories of individuals, households, communities or places may emerge and an understanding of processes, causes and consequences of change, and how these are reframed over time by research participants are elucidated. Longitudinal research supports a *diachronic* framing. In quantitative longitudinal designs,

panel-based (the same people take part in each phase of data collection) or a repeat cross-sectional (new participants take part in each successive phase of the research) study design may be deployed. Both have been used for many years in large-scale survey-based research to track changes in social behaviour and attitudes, and to generate statistically robust accounts of how society is evolving and changing. Panel-based designs have the advantage of being able to track change at the level of the individual or household, offering insights that repeat cross-sectional designs would miss.

## 2.2 | Longitudinal qualitative designs

The benefits of qualitative approaches, research grounded in an interpretivist tradition, are captured in longitudinal qualitative studies where ‘the interplay of time and texture—or the temporal and cultural dimensions of social life’ (Neale & Flowerdew, 2003, p. 192) make LQR distinctive. Repeat encounters with people and places in a qualitative study facilitate looking forwards and backwards through the research. In interrogating prospective–retrospective narratives, researchers can move beyond the descriptions of change elicited from analysis of quantitative longitudinal data and ‘begin to grasp the nature of social change, the mechanisms and strategies used by individuals to generate and manage change in their personal lives, and the ways in which structural change impacts on the lives of individuals’ (Neale & Flowerdew, 2003, p. 190).

There is potential for any qualitative method to be deployed in LQR, but repeat interview-based methodologies appear the most common (Corden & Miller, 2007). The flexibility of qualitative methods espoused for cross-sectional studies is extended within a LQR design. Analysis which focuses on individuals’ or collective attributes at specific points in time allows findings to be identified and, if required, formally reported for each phase of a study. Successive waves or rounds of cross-sectional analysis build on each other, pointing to themes associated with single points in time and others which change as the research progresses. An issue of relevance to the study can therefore be considered in a new way or with explicit reference to what was discussed in an earlier encounter; a qualitative design offers flexibility, allowing topics or themes to be revisited, approached in a different way and reviewed with participants over time. A LQR design facilitates researchers ‘being able to draw on participants’ earlier contributions to analyse later contributions’ (Bennet et al., 2020, p. 491). Once all rounds of data collection have been concluded, summative approaches to analysis may be deployed, allowing researchers to explore the overall profile and circumstances of those who participated in the research, focusing upon the trajectories of individuals or the collective.

Time is a central concept in LQR. Neale (2019, p. 5) describes the *longitudinal frame* as being based on two elements: the *time frame* is the overall period of time during which a study will unfold and the *tempo* ‘reflects the number, duration and frequency of visits to the field’. Timeframe and tempo are influenced by whether or not a longitudinal study was intended from the outset—as in *planned prospective research*—or whether an opportunity is presented to repeat an earlier study or return to individuals or communities a researcher engaged with previously in what had been considered a completed cross-sectional study—*follow-up studies*. These styles of longitudinal study are two of the four dominant models of LQR identified by Holland et al. (2006, pp. 36–37).

## 2.3 | Longitudinal methods and flood impacts research

Longitudinal approaches have been used to inform policy development, implementation and evaluation. Policy-makers and researchers recognise that LQR has ‘potential to generate unique insights into the ways that social policies and interventions are “lived” and “survived” by individuals, families, communities and organisations’ (Thomson & McLeod, 2015, p. 244). With climate change predicted to make flood events in many regions across the world more frequent, severe and disruptive (cf. IPCC, 2021), more longitudinal perspectives have been incorporated into flood impacts research, work which is often designed to generate evidence that can be used to support the development of more effective flood risk management policy and planning.

Natural disasters such as floods are known to have serious impacts upon peoples’ lives. The immediate impacts of flooding are often well publicised. For example, reports of events in Belgium, the Netherlands and Germany in July 2021 highlighted the devastation left in the wake of serious flooding: more than 200 people lost their lives, 100 were injured, and 1000 had to evacuate their homes (cf. JBA Risk Management, 2021). The number of properties exposed to flooding in the UK and elsewhere is expected to increase in the future due to climate change (Committee on Climate Change, 2015; IPCC, 2021). The Environment Agency (2009) estimated one in six properties in England were at risk of

flooding. Worldwide more numerous and more severe flood events are likely to affect remote and rural communities, cities and other urban centres. A better understanding of the long-term impacts of flooding in diverse geographical contexts is therefore important, as is exploring the specific needs of and challenges faced by different types of communities as they recover from a flood event.

In a policy context, longitudinal designs may provide insights into what types of intervention and support best suits immediate and longer-term responses to events. Flooding has numerous impacts on those whose homes and business premises are inundated with water and for others who live and work in flooded communities in the immediate aftermath and in the months and years following. LQR can offer nuanced insights into longer-term impacts of flooding, tangible (largely economic/financial) and intangible (including physical health and psychological and emotional effects). We suggest that flood risk management benefits from understanding immediate, short *and* longer-term experiences and impacts of flooding. The latter—identifiable in longitudinal studies—can suggest how flood resilience planning and post-flooding recovery efforts could most effectively be designed and deployed to meet needs as they change during a recovery process.

Flood impacts research has focused primarily upon the experiences of individuals and communities during and in the immediate aftermath of a flood event. UK examples include Butler et al. (2018), Lamond et al. (2015) and Ogunbode et al. (2019). Studies extending beyond about 18 months after a flood are rare. A longer-term approach has been used in some studies addressing long-term health impacts of flooding (e.g., Jermacane et al., 2018; Tunstall et al., 2006). Werritty et al.'s (2007) study explored the impact of a number of different flood events experienced by communities across Scotland, some of which had occurred 10+ years before the research was undertaken. Interview-based qualitative longitudinal studies have explored the long-term health and wellbeing of individuals after a flood, but the duration of these studies has rarely exceeded two years (cf. Walker-Springett et al., 2017; Medd et al., 2015). Tapsell and Tunstall's (2008) study, which used focus groups and continued for four and a half years after a flood event, explored change over an exceptionally long period.

Despite longitudinal qualitative approaches having been used in disaster-related research, and in flood impacts research specifically, this literature includes no reflections on the practicalities of conducting longitudinal research or commentaries about the utility of qualitative designs in research which could inform flood-related policy and practice. This contribution is designed to address this omission.

## 2.4 | *Assessing the Long-Term Impacts of Flooding study*

Severe flooding in parts of Scotland in winter 2015/16 prompted the Scottish Government, via Scotland's Centre of Expertise for Water (CREW), to commission research to generate an evidence base to inform flood risk management activities, including to better understand the impacts of flooding upon people and communities and to consider what types of support and advice are needed in the months and years following a flood. The resulting *Assessing the Long-Term Impacts of Flooding* study was conducted over a three-year period, commencing a year after the flooding. A Steering Group (including representatives from Scottish Government, the Scottish Environment Protection Agency [SEPA], NHS Scotland and Scottish Flood Forum) was involved with the research from the outset and provided invaluable support to the research team as the work progressed. The Steering Group approved the selection of two case study areas in North-East Scotland, which were both severely affected by flooding in winter 2015/16. For one community this was the first serious flood event in decades; for the other it was the most recent, and severe, of a number of flood events to affect their local area. Full details of the project's methodology are available in the end of project comprehensive report (Philip et al., 2020). A LQR approach was envisaged when the project was opened to tender. Design decisions were made by the research team when they prepared their application and in response to discussions with the funder at the project approval stage. Other decisions that shaped the design of the project were made in consultation with, and with the approval of, the project Steering Group as the research progressed and may be described as responses to 'in the field' challenges and opportunities.

The first data collection phase, utilising a household survey and business survey, was undertaken 16–19 months after the winter 2015/16 flooding. Both surveys provided a very successful means of identifying individuals willing to take part in the next, qualitative, phase of the research for which a planned prospective LQR design was developed involving three rounds of semi-structured interviews to be undertaken during the remainder of the funded period of the project. This approach, using repeat interviews to track individuals at regular intervals up to 42 months after the flood waters had dissipated, was novel and the volume of rich qualitative data the project generated may not have been exceeded in other flood impacts studies. For logistical reasons including, for example, the time required for (i) the funder to allocate monies



to support the research, (ii) the tendering and commissioning processes, and (iii) formal agreement of project milestones and deliverables between funder and research team it was impossible to start data collection earlier. In retrospect, our timing was appropriate. Some interviewees commented that starting our research earlier than we did would have been perceived as insensitive. Also, with so many residents living in temporary accommodation, often at a distance from their homes and for many months after the flooding, it would have proved difficult to identify potential participants if we had commenced data collection activities any earlier. Starting the research when we did meant that 'real time' accounts of the immediate post-flood recovery period could not be elicited. However, the research team made explicit attempts to try and minimise the 'dulling of memory' during the first round of interviews by, for example, using photographs of the flooding provided by participants or images used in media reports at the time of the flooding as prompts.

### 3 | DESIGNING LONGITUDINAL RESEARCH: LESSONS LEARNT FROM CONDUCTING A PROSPECTIVE LONGITUDINAL QUALITATIVE RESEARCH PROJECT

Having outlined attributes of LQR and introduced our study we now turn to reflect on some features of our research that made the deployment of a LQR design successful. Under three headings – (i) recruiting participants, (ii) establishing and maintaining a connection between researchers and participants and (iii) conveying research impact to participants – we consider actions and decisions ultimately directed towards maximising participant retention and engagement with the research. Finally, we explicitly consider how LQR can enhance policy-aligned research projects.

#### 3.1 | Participant recruitment and expecting attrition

Participants for the first round of interviews, conducted in the first year of the project and 17–21 months after the case study communities were flooded, were purposefully recruited in a variety of ways (see Philip et al., 2020), but the majority of interviewees were selected from individuals who had completed a survey and expressed an interest in being involved in further stages of the research. This method of recruitment was particularly advantageous as it facilitated the deployment of selection criteria that allowed diverse attributes of those affected by the flooding to be captured.

A key challenge facing all researchers undertaking a longitudinal study, quantitative or qualitative, is to ensure that sufficient participants remain engaged with the study in the final stages. Attrition can be anticipated (although exact numbers are uncertain), and will be influenced, amongst other things, by the research topic, personal circumstances of participants, and the duration and number of interactions expected between participants and researchers. Few accounts of attrition in quantitative or qualitative longitudinal studies appear in the flood impacts literature. Hudson et al.'s (2019) study involved three rounds of surveys involving participants who had been affected by flooding in Germany in 2013. Here high attrition rates were reported: 'about 60% for both Waves 2 and 3' (p. 14). In research where three rounds of focus groups were conducted with people whose homes had been inundated with flood waters in Oxfordshire, England, the last encounter being four and a half years after flooding, Tapsell and Tunstall (2008) reported an attrition rate of around 25%. These examples illustrate that there is a huge degree of uncertainty around likely attrition rates, with implications for project planning and resourcing.

In LQR studies, data saturation should be achieved during final interactions with participants, necessitating a 'backwards solution' to recruitment whereby the pool of participants identified for the first round must be large enough to accommodate expected attrition as the study progresses, and to allow some flexibility in selecting participants to progress from one round of interviews to the next. A planned prospective LQR study can explicitly plan for samples in early stages of the study being larger than would be expected in a cross-sectional study in anticipation of participant attrition. Our flood impacts study was designed at the outset to include a large number of participants in year one with fewer individuals expected to participate in subsequent years. In total, 161 interviews were conducted, as follows: round 1: 77 interviews, 94 participants; round 2: 53 interviews, 64 participants; and round 3: 31 interviews, 35 participants.

The research team initially thought that interview numbers in the first round were too high, but in hindsight this was required to ensure data saturation in round 3. Some participants voluntarily withdrew from the study, a handful between rounds 1 and 2 and approximately 17% between rounds 2 and 3. Two individuals moved out of the case study communities during the study and ceased involvement when they were no longer local residents. After round 1 interviews had been analysed, the research team identified some individuals who were unlikely to contribute more to understanding

the diversity of post-flooding journeys. A purposive sampling approach worked in the context of our study, but we recognise that in other studies it would not be an appropriate means of selecting interviewees for successive waves of a longitudinal study.

Our 'oversampling' strategy highlighted a challenge pointed out by Calman et al. (2013), who suggested that 'oversampling', if unselective, could overstretch researchers. Calman's observation hints at the challenges associated with managing large amounts of data and resource implications, such as the number of researchers required to work on a project at specific phases and the time and cost of undertaking extensive fieldwork. In the first year of our project, we designed, administered, analysed and wrote up findings from household and business surveys and conducted 77 interviews, analysed the transcripts and wrote up our findings: it was a very labour-intensive period. The second and third years were less hectic, requiring interview-based data collection on a reduced scale compared with that undertaken in the first year. Personnel requirements that evolve over the course of a project are more difficult to plan, cost and manage than requirements that remain consistent over time. We managed this by exploiting the ability of the research institute based co-Principal Investigator to select a core-funded researcher from a pool of staff to work intensively for some months and then reduce the time they spent on the project. Interviews in both case study areas required day travel away from our home institutions. This kept fieldwork costs down. We would not have been able to 'oversample' in the first round of interviews and remain within the pre-set budget for the project if our Steering Group had wanted to include one or more case study areas located elsewhere in Scotland.

Many people gave time to the study and shared harrowing narratives of the impact of flooding on themselves and others in their household, friends, neighbours and the wider community. In the first round of interviews we engaged with more participants than strictly necessary to meet study aims: data saturation was reached before all the planned interviews were undertaken. However, in retrospect, achieving a specific number of interviews, rather than focusing on elicitation of diverse experiences, was necessary to ensure that diverse experiences were captured in round three. Without 'oversampling' early on in the project, the pool of interviewees in the final phase could have been too small to meet study aims and we would have risked not being able to capture the range of experiences we did amass.

Notwithstanding the potential challenges associated with what was *necessary* 'oversampling' our experiences suggest that a 'backwards solution' to recruitment is essential and must be considered by others designing LQR projects. It is impossible to predict exactly how many participants will be required for data saturation to be achieved in the final stages of a project, but a generous estimate should ensure that a 'backwards solution' works. How many people will drop out of a study or be identified as unsuitable for inclusion in all rounds of data collection is uncertain. Initial sampling decisions should, wherever possible, err on the side of caution and ethical review applications should present an explicit rationale for 'oversampling'. Based on our experiences, it would be prudent to plan for the number of participants in the first stage of a study being twice as many as those envisaged as taking part in the final stage. We acknowledge that this has financial and personnel implications, which may be impossible to accommodate under the parameters of grants offered by some funding bodies.

Despite LQR becoming more prominent in the past couple of decades, 'prospective qualitative studies are still scarce and tend to be relatively small-scale studies conducted over modest periods of time' (Neale & Flowerdew, 2003, p. 194). Further, the intensive, time-consuming nature of qualitative research results in most LQR being 'small-scale, in-depth studies of individuals or small collectives ... [tracked] intensively over relatively modest time frames' (Neale, 2019, p. 9). This could be partly due to constraints associated with available funds (which influence the scope of a study, including the duration) and how (in)flexibly researcher time requirements can be built into grant applications and staffing models. We hope that funders can be persuaded of the benefits of planned prospective LQR studies, allowing realistically costed LQR to be undertaken over time frames that suit explorations of the topic in question and which accept that the type of 'backwards solution' to recruitment we adopted are necessary.

### 3.2 | Establishing and maintaining a connection between researchers and participants

Other strategies could also be useful in offsetting attrition. Our experiences suggest that establishing and maintaining a connection between researchers and participants is an important means of encouraging participants to remain involved with a longitudinal study. Some ways in which we tried to do this are described below.

A 'brand identity' was created at the outset of our project that included photographs taken in each study area that clearly associated the research with specific places (see Figure 1). The logos of the research team's institutions were also incorporated into all hard copy materials we produced and were used on our social media and web pages. Using images



The **'Long-Term Impacts of Flooding'** project team would like to thank you for your participation in our research project in 2018



A summary report of our Year 2 findings will soon be available via the project website: <http://www.crew.ac.uk/project/assessing-impacts-flooding-people-and-communities>

We will soon be commencing the final Year 3 follow-up interviews, where we will be interested in continuing to learn about impacts associated with the aftermath of the 2016 flood in the **Garioch area**. These interviews will be carried out with fewer participants than required in Year 2.

*With best wishes, The Project Team.*



If you would like any further information about the Year 3 interviews, or if you no longer wish to be contacted regarding participating in these for any reason, please contact: [Gillian.Dowds@abd.ac.uk](mailto:Gillian.Dowds@abd.ac.uk)

or  
 Dr Gillian Dowds, Geography and Environment, Room 110,  
 St Mary's, Elphinstone Road, Aberdeen, AB24 3UF.

Unless we hear from you advising otherwise, it is likely that we will contact you over the next few weeks. If you don't hear from us, once again, thank you for your participation.

**FIGURE 1** Front and back of the postcard sent to study participants before the second round of interviews commenced. Project materials were tailored to each case study area. (images © L Philip).



directly associated with the two case study communities conveyed that the researchers knew the local context and established a place-based connection between the research topic and the researchers. We think highlighting that the research was being undertaken by researchers from local institutions was a means of making a connection between participants and the project team that engendered trust. We were not strangers parachuting in from unknown organisations in the aftermath of the flooding.

Initial contact with a research project sets the tone for any future engagements with the study. For most of those we interviewed the first direct contact with the research was in the spring of 2017 when a survey inviting contributions to research seeking to understand impacts of the winter 2015/16 flooding in North-East Scotland arrived through letter boxes. The survey was issued 16 months after the flooding, allowing enough time to elapse for the recovery process to be underway, (most of) those displaced from their property to have returned home following remedial works and for community members to be aware of immediate and longer-term flood impacts. The survey was accompanied by a participant information form which used the 'brand identity' discussed above, introduced the survey and invited expressions of interest in subsequent stages of the research.

Most round 1 interviews were conducted within a few months of participants' first contact with the research and consent was secured from interviewees to retain their contact details in anticipation of them being invited to participate in the next round of interviews. Thereafter a strategy of keeping in touch was deployed to help sustain awareness of, and interest in, the research. A reminder postcard (Figure 1) was sent to all round 1 interviewees 2 months before the round 2 interviews were due to commence and to all round 2 interviewees before the final round of interviews began. It prompted people to recall that they had agreed to be contacted again and provided a web link to end of year reports so those interested in reading about interim findings could do so. Maintaining contact with participants who could take part in subsequent rounds of a LQR study is 'integral to LQR but must be balanced with participants' rights to discontinue their involvement' (Bennet et al., 2020, p. 492). Feedback we received suggested that the postcards were read by all recipients, considered an effective reminder about the study and involvement in the research and enhanced receptiveness to subsequent contact inviting participants to take part in another interview. More frequent contact could have been made, but it may have come across as being intrusive, discouraging continued participation; we were lucky to have struck an appropriate balance.

As mentioned above, most of our interviewees were recruited because they had completed a survey administered at the start of the project and indicated willingness to take part in follow-up research. They had provided an email address and/or mobile telephone number via which a named individual could be contacted. This meant that we only recruited one individual per household<sup>3</sup> for year 1 interviews and that individual was our point of contact for subsequent stages of the research. Email was our primary means of contacting participants. Postal contact was limited to the reminder postcard, and we did not receive any 'return to sender' notifications. We are aware that in larger, more mobile communities, maintaining contact with participants by post may not be so successful. Being prepared to track participants in multiple ways, by post and/or email and/or telephone, is a means by which others undertaking a LQR study could ensure they keep in contact with participants, minimising attrition.

Key findings from the previous round were outlined to participants at the start of round 2 and 3 interviews, illustrating to interviewees how their previous contributions were reported. We could show how both unique and more common experiences were incorporated into our findings, demonstrating how individual narratives were combined to create the bigger story. A strategy of drawing connections between the specifics of an individual interview and the wider project was supported by our decision to precede every follow-up encounter with the interviewer reading the transcript of the previous interview. Specific issues raised by participants could then be followed up in future conversations, helping convey to interviewees that the researchers were genuinely interested in them and their experiences, as well as facilitating discussions of how experiences, attitudes and interpretation of events unfolded over time. The strategy was a form of personalising encounters with participants and was particularly beneficial if the interviewer had not met the interviewee earlier in the project. It complimented our evolutionary approach to the design of interview topic guides where we exploited a strength of LQR, well documented in the literature, of early findings informing subsequent data collection. Having a small research team allowed all the interviews to be conducted by just three researchers, and in most cases round 2 and 3 interviews were led by the same researcher who had conducted the previous interview. This staffing attribute engendered continuity for participants and allowed rapport between participants and researchers to be sustained: we think this contributed to our (relatively) low attrition rate.

At a time when the merits of video calls are now well established, including their potential use as a means of overcoming financial and distance (e.g., travel time) barriers when undertaking 'fieldwork', the advantages of in-person interactions can be overlooked and are worth rehearsing. Most interviewees chose to be interviewed in their home and,



in hindsight, this was hugely important in our research. During many in-person interviews the interviewer was taken around participants' homes and shown, for example, where flood water rose to, post-flood renovations in the home, garage, garden and so forth, and any flood resilience or resistance measures that had been installed during or after home renovations. Discussing the damage caused and remedial work in situ helped the researchers appreciate the extent of flood-related damage and the impact this had on home environments. Having time to walk around the case study areas, to see evidence of flood impacts 'on the ground' and to visit community resilience hubs and to see the changes that had been made there post-flooding was also useful. Repeat visits to the same participants allowed the interviewers to notice changes in interviewees' appearance and demeanour (positive and negative), their home, and to clearly see facial expressions and body language when talking about what remained a distressing topic. Interacting with participants in their homes helped to make interviewees more comfortable and willing to talk openly about distressing events and provided the research team with invaluable contextual understanding and appreciation of personal and community circumstances which, in turn, contributed to participant retention.

### 3.3 | Research impact

The project's Steering Group met approximately three times a year, providing us with regular opportunities to report and discuss interim findings and for Steering Group members to tell us how our findings were being used to inform developments in flood risk management policy and practice. In turn, we were able to report to our participants how findings were received by decision-makers and, importantly, what was being done as a result.

Our research was included in an impact evaluation commissioned by our funder, the purpose of which was to 'investigate, showcase and explain how CREW projects develop impact ... with an emphasis on creating "theories of change" that visually encapsulated the CREW impact process' (Institute for Methods Innovation, 2020, no page numbers). A theory of change overview of the long-term impacts of flooding project was included in CREW's *Programme Report 2016–2022* and included the following examples of impact. Impact that occurred during the lifetime of the project was the research providing evidence, documented in the year 1 report, to support an increase in core funding for the Scottish Flood Forum. This reduced pressure on the organisation to leave flooded communities earlier than could have been optimal. Once the research was completed, findings were used to inform how parties associated with flood risk management, including insurance agencies, surveyors, construction and building standards agencies could engage more directly with flood-affected communities. This work included, for example, Scottish Flood Forum and FloodRe<sup>4</sup> co-organising community engagement events in areas which had experienced flooding. Based on interim and end of project findings, the Scottish Environment Protection Agency adapted their services which help the public and businesses be better prepared and able to take appropriate action if flooding is expected, including implementing 'improvements to our flood early warning and real-time water level information' (CREW, 2022, p. 16).

The focus of LQR can evolve over time in response to findings from successive rounds of a study. In our case, and facilitated by a good working relationship with the Steering Group, an element of co-production (categorised as an impact activity in the project's evaluation) was introduced in the second round of interviews. This saw participants being invited to offer advice (i) to others who live in a flood risk area and may find themselves having to deal with a serious flood in the future, (ii) to those directly involved in flood risk management, and (iii) insurance companies. It was a means of allowing participants to reflect on how they had responded to the unfolding emergency of the winter 2015/16 floods and articulate what they were glad they had done and what, in hindsight, they thought they could have done differently or known more about. Compiled under seven themes, respondent-voiced 'advice to others' was included in our end of year 2 report. Analysis of this material provided the basis of a tool deployed in the final round of interviews which elicited participants' views about the importance of specific advice that could be communicated, as part of flood risk management strategies, to other people living in areas at risk of flooding.

Being able to demonstrate impact as the research progressed, and explicitly describing impacts to interviewees, provided tangible evidence to participants that their experiences were valued. By involving interviewees in the development of advice and recommendations we showed that the research was 'useful' and that efforts were being made within the flood risk management community to learn lessons from the experiences of those directly affected by the winter 2015/16 flooding. Although some participants found taking part in the study emotionally taxing, knowing that their contributions could help others who found themselves in a similar situation helped them overcome emotional barriers to continued participation. If researchers wish to keep options for a follow-up study open, highlighting how individual contributions were 'useful' could make participation in a future round of interviews easier to secure.

### 3.4 | LQR and policy-aligned research

Government and public sector bodies regularly commission research it is hoped will contribute to the development, implementation and evaluation of public policy. Those commissioning research often want evidence and recommendations quickly and need to demonstrate value for money. This can put researchers undertaking the work under time pressure and require them to work within a tight budget. From the funder perspective, there is an understandable reluctance to avoid risk and a desire to get results quickly which, in turn, favours cross-sectional research. However, carefully planned prospective LQR designs can specify a schedule for reporting interim findings and if emerging findings are shared at regular intervals, before production of a final report, those who commission research can access, and act upon, findings at various points during the lifetime of a longitudinal project.

In our research, it was agreed at the project design stage that three annual reports and an end of project report would be prepared and published. Cross-sectional analysis underpinned the annual reports: an explicitly summative, longitudinal analytical perspective was reserved for the final report. Annual reports provided evidence that informed developments within flood risk management policy and practice (see section 3.3). If we had not formally reported interim findings, our work could not have been used in these ways. Our cross-sectional analysis of each (annual) round of data also allowed decision-makers to identify questions they wanted to ask participants in future rounds of data collection. Encouraged by the funder and Steering Group we presented findings at a number of conferences that brought together academics, policy-makers, private sector and third sector organisations. These presentations allowed us to share findings with the wider flood risk management community, many of whom have statutory responsibility to plan for emergencies and deal with immediate responses to a flood. Using powerful, personal accounts of the impacts of flooding, our presentations 'personalised' the impacts of flooding, which hopefully encouraged the stakeholder community to think about flood impacts in a different way. Successive presentations demonstrated that our long-term perspective brought new insights which could inform how the flood risk management community supported flood recovery processes. Combined these efforts benefited the funder, but they also benefited the research team as 'impact' was generated iteratively as the project progressed.

Steering Groups are routinely established to support and monitor progress on funded projects. Our experience was one where Steering Group meetings and other interactions with Steering Group members constituted a supportive learning environment. As researchers, we learnt from Steering Group members, experts in various fields of flood risk management, which led us to ask better questions of our participants and interpret our findings from a better informed standpoint. Input from Steering Group members allowed some issues of particular concern or interest to them and their organisations to be incorporated into our data collection tools. For example, we asked questions about property level flood resistance and resilience measures and about the use of the UK's free flood warning and alerts system, FloodLine, and our findings directly informed work on these topics being undertaken by Steering Group members, from Scottish Government and SEPA respectively, whilst our project was ongoing. Discussing our initial ideas for an 'advice to others' section of the final report with the Steering Group allowed us to compile recommendations that both reflected issues deemed important by our participants and which were feasible/do-able from a policy perspective. Steering Group members learnt from the research team too. Informal discussions allowed the Steering Group, which included individuals representing the 'policy client', to better understand how research providers (in our case a university and a research institute) cost grant applications and what a seemingly large sum of money can actually fund in terms of duration and scope. How much research staff time costs came as a surprise. If funders have a better understanding of these costs they will be better placed when commissioning longitudinal research in the future.

As the project evolved, the research team realised that, at the outset, the funder (Scottish Government via CREW) had viewed the work as potentially risky. At the first Steering Group meeting we discussed what would be done if there was another flood in one or both of the case study areas during the lifetime of the project. In agreeing a contingency plan, we ensured that there would be no detriment to the research team if another flood made it impossible to continue the longitudinal programme of work as agreed in the research contract. The funder and the Steering Group had legitimate concerns that very few participants would stay with the project for three rounds of interviews, making it impossible for meaningful insights into long-term impacts of flooding to be elicited. As Steering Group members and the research team got to know each other, mutual trust developed. Regular reporting of activities and interim findings reassured the Steering Group and funder that the work was progressing well and delivering meaningful findings. Recruitment of interviewees in one study area was more difficult than in the other area, largely because in one community more than 300 homes had been flooded in winter 2015/16 whilst in the other the number was around 100, resulting in a much smaller potential pool of interviewees directly affected by the flooding. By discussing data saturation, the ethics of returning to

participants we felt had little more to contribute to the study, and by encouraging a focus on the quality of data rather than the number of participants, a more flexible approach to sampling evolved than had been agreed in the initial project plan. Mutual trust allowed 'on the ground' circumstances to be responded to, academic judgement to be respected and concerns about the riskiness of the project to be assuaged.

Finally, the way in which the project was funded, commissioned and managed contributed to the success of our work. The research was funded via and overseen by CREW, Scotland's Centre of Expertise for Waters, a Scottish Government funded Centre of Expertise which undertakes research that will *support the development and implementation of water policy*. New research themes or projects to address a specific topic or challenge may be requested by one of CREW's partner organisations (see <https://www.crew.ac.uk/> for details) and all projects funded by CREW should inform policy and practice in more than one partner organisation. Every project funded by CREW is overseen by a steering group, the membership of which includes representatives from CREW partner organisations. There is also an opportunity for researchers at one of Scotland's core funded Research Institutes to propose research topics; this was the mechanism which led to a tender being issued for our long-term impacts of flooding project. CREW, as the intermediary between the 'policy client' (the CREW partner who wanted the research to be undertaken) and the research team, coordinated Steering Group meetings, the publication of interim and final reports, and facilitated formal opportunities to disseminate findings such as presenting at stakeholder conferences. The policy client wanted the project to produce systematic evidence that would support a case for organisational change within flood risk management to be made, and understood that to do this a long-term perspective was essential. The partnership nature of CREW meant our project Steering Group members included individuals who, despite having different needs and expectations, were keen to ensure the project was successful and able to generate useful findings and achievable recommendations for their organisations. We doubt our research would have generated the impact it did if it had been funded and managed differently. Without the constructive working relationship that developed between the Steering Group and the research team, the 'in the field' responsiveness we were able to bring to our LQR design may not have been possible. The Centre of Expertise structure is translatable to other policy areas and, we suggest, has the potential to be replicated by other funders who commission applied research on many other topics.

## 4 | CONCLUSIONS

This paper has argued that using a longitudinal, qualitative design generates rich insights into the aftermath of natural disasters such as flooding, findings of academic merit and of relevance to public policy. Cross-sectional studies of flood impacts are valuable, they can provide detailed, nuanced and powerful personal accounts. However, only a longitudinal study, with repeated encounters with participants, can allow powerful stories to emerge over time, narratives which demonstrated common and individual dimensions to post-flooding journeys at individual, household and wider community levels. There is a place for both types of study; by illuminating how recovery from a flood unfolds over time and through a process of iterative engagement with participants and policy stakeholders, our research has been able to offer insights that have directly informed flood risk management policy and practice in Scotland. Our experiences suggest that there is considerable potential for LQR studies to contribute to an evidence base aligned with policy topics beyond natural hazards management.

As discussed above, our experiences have identified a number of factors we suggest other researchers consider to help ensure that future longitudinal qualitative studies are successful. Initial recruitment of a large cohort of participants, timely communication about upcoming phases of the project, being well prepared to ask questions about distressing events and reinforcing to participants that their contributions are valuable are all important means by which a positive participant experience can be established and maintained, attrition from the study minimised and a wide mix of experiences captured across all rounds of a study. Funders may be reluctant to commission LQR research, assuming they will have to wait until the conclusion of the project to be presented with 'results'. An agreed schedule of regular reporting to funders ensures that a robust evidence base is developed cumulatively and that early findings can be used, where appropriate, to inform policy decisions and work being led by other stakeholders before the end of the project. A project Steering Group whose membership are committed to supporting the design and deployment of good quality research and who are open to bringing new ideas and practises into the work of their organisation in light of findings generated during and at the end of research projects they have oversight of further ensures that policy-aligned LQR can have impact. In presenting our experiences, we hope that other researchers, especially those whose research is aligned with policy development, implementation and evaluation, consider what longitudinal qualitative methods could bring to their work, and we encourage those who commission and manage policy-aligned research to support LQR studies in the future.

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## DATA AVAILABILITY STATEMENT

Data cannot be shared.

## ORCID

Lorna J. Philip  <https://orcid.org/0000-0002-4788-2798>

## ENDNOTES

- <sup>1</sup> Social science research methods textbooks, if they explicitly mention longitudinal methods, invariably present this approach as the preserve of quantitative studies or, as is the case in Bryman (2016), mention in passing how qualitative methods could support a longitudinal design. The impression gleaned from reviewing key geographical reference materials such as entries in the *International encyclopaedia of human geography* (1st and 2nd editions), successive editions of the *Dictionary of human geography* and from scanning the indexes of geography methods texts (including, for example, Cloke et al., 2004; Flowerdew & Martin, 2005; Clifford et al., 2016) is that longitudinal research in the discipline is overwhelmingly associated with quantitative approaches if indeed the term 'longitudinal' is mentioned at all.
- <sup>2</sup> The qualitative methods in human geography literature makes negligible reference to longitudinal methods. For example, 'longitudinal' does not appear in the index of DeLyser et al.'s (2009) *Sage handbook of qualitative geography*; Dunn's (2021) chapter in *Qualitative methods in human geography* refers to 'repeat interviews' but these are not described using the term 'longitudinal'.
- <sup>3</sup> Interviews with a single participant were anticipated, but in a few instances a second household member joined the individual who had been invited to take part in an interview, allowing the experiences of two people to be captured in one interview.
- <sup>4</sup> FloodRe is a joint UK Government–insurance industry initiative which aims to make flood cover a more affordable component of household insurance policies.

## REFERENCES

- Bennet, D., Kajamaa, A. & Johnston, J. (2020) How to ... Do longitudinal qualitative research. *The Clinical Teacher*, 17, 489–492. Available from: <https://doi.org/10.1111/tct.13203>
- Bryman, A. (2016) *Social research methods*, 5th edition. Oxford, UK: Oxford University Press.
- Butler, C., Walker-Springett, K. & Adger, N.W. (2018) Narratives of recovery after floods: Mental health, institutions, and intervention. *Social Science and Medicine*, 216, 67–73. Available from: <https://doi.org/10.1016/j.socscimed.2018.09.024>
- Calman, L., Brunton, L. & Molassiotis, A. (2013) Developing longitudinal qualitative designs: Lessons learnt and recommendations for health services research. *BMC Health Services Research Methodology*, 13(14), 1–10. Available from: <https://doi.org/10.1186/1471-2288-13-14>
- Clifford, N.J., Cope, M., French, S. & Valentine, G. (2016) *Key methods in geography*, 3rd edition. London, UK: Sage.
- Cloke, P., Cook, I., Crang, P., Goodwin, M., Painter, J. & Philo, C. (2004) *Practising human geography*. London, UK: Sage.
- Committee on Climate Change. (2015) *Preparing for UK water extremes: Flooding and drought*. Available from: <https://www.theccc.org.uk/2015/10/29/preparing-for-uk-water-extremes-flooding-and-drought/> [Accessed 9th September 2022].
- Corden, A. & Miller, J. (2007) Qualitative longitudinal research for social policy - introduction to themed section. *Social Policy and Society*, 6(4), 529–532. Available from: <https://doi.org/10.1017/S1474746407003910>
- CREW. (2022) *CREW programme report 2016–2022*. Available from: <https://www.crew.ac.uk/publication/crew-programme-report-2016-2022> [Accessed 10th July 2023].
- DeLyser, D., Herbert, S., Aitken, S., Crang, M. & McDowell, L. (Eds.). (2009) *Sage handbook of qualitative geography*. London, UK: Sage.
- Dunn, K. (2021) Engaging interviews. Chapter 9. In: Hay, I. & Cope, M. (Eds.) *Qualitative methods in human geography*, 5th edition. Oxford, UK: Oxford University Press, pp. 148–185.
- Environment Agency. (2009) *Flooding in England: National assessment of flood risk*. Available from: <https://www.gov.uk/government/publications/flooding-in-england-national-assessment-of-flood-risk> [Accessed 9th September 2022].
- Flowerdew, R. & Martin, D. (2005) *Methods in human geography: A guide for students doing a research project*, Second edition. Harlow, UK: Prentice Hall.
- Holland, J., Thomson, R. & Henderson, S. (2006) *Qualitative longitudinal research: A discussion paper*. Working paper No. 21, families and social capital ESRC research group. London, UK: London South Bank University. Available from: [https://www.lsbu.ac.uk/\\_\\_data/assets/pdf\\_file/0019/9370/qualitative-longitudinal-research-families-working-paper.pdf](https://www.lsbu.ac.uk/__data/assets/pdf_file/0019/9370/qualitative-longitudinal-research-families-working-paper.pdf)
- Hudson, P., Thieken, A.H. & Bubeck, P. (2019) The challenges of longitudinal surveys in the flood risk domain. *Journal of Risk Research*, 23(5), 642–663. Available from: <https://doi.org/10.1080/13669877.1617339>



- Institute for Methods Innovation. (2020) *Scotland's centre of expertise for waters impact evaluation*. Available from: <https://www.methodsinnovation.org/crew-impact-evaluation/> [Accessed 10th July 2023].
- Intergovernmental Panel on Climate Change. (2021) Sixth assessment report, *climate change 2021: The physical science basis*, United Nations. Available from: <https://www.ipcc.ch/report/ar6/wg1/#FullReport> [Accessed 9th September 2022].
- JBA Risk Management. (2021) *Summer floods in Europe 2021*. Available from: <https://www.jbarisk.com/flood-services/event-response/summer-floods-in-europe-2021/> [Accessed 9th September 2022].
- Jermacane, D., Waite, T.D., Beck, C.R., Bone, A., Amlôt, R., Reacher, M. et al. (2018) The English National Cohort Study of flooding and health: The change in prevalence of psychological morbidity at year 2. *BMC Public Health*, 18, 330. Available from: <https://doi.org/10.1186/s12889-018-5236-9>
- Lamond, J., Joseph, R. & Proverbs, D. (2015) An exploration of factors affecting the long-term psychological impact and deterioration of mental health in flooded households. *Environmental Research*, 140, 325–334. Available from: <https://doi.org/10.1016/j.envres.2015.04.008>
- Medd, W., Deeming, H., Walker, G., Whittle, R., Mort, M., Twigger-Ross, C. et al. (2015) The flood recovery gap: A real-time study of local recovery following the floods of June 2007 in Hull, north-East England. *Journal of Flood Risk Management*, 8, 315–328. Available from: <https://doi.org/10.1111/jfr3.12098>
- Neale, B. (2019) *What is qualitative longitudinal research?*. London, UK: Bloomsbury Academic.
- Neale, B. & Flowerdew, J. (2003) Time, texture and childhood: The contours of longitudinal qualitative research. *International Journal of Social Research Methodology*, 6(3), 189–199. Available from: <https://doi.org/10.1080/1364557032000091798>
- Ogunbode, C.A., Böhm, G., Capstick, S.B., Demski, C., Spence, A. & Tausch, N. (2019) The resilience paradox: Flooding experience, coping and climate change mitigation intentions. *Climate Policy*, 19(6), 703–715. Available from: <https://doi.org/10.1080/14693062.2018.1560242>
- Philip, L., Currie, M. & Dowds, G. (2020) *Long-term impacts of flooding following the winter 2015/16 flooding in north-East Scotland: Comprehensive report CREW2016\_02*. Scotland's Centre of Expertise for Waters (CREW). Available from: [www.crew.ac.uk/publications](http://www.crew.ac.uk/publications) [Accessed 10th July 2023].
- Tapsell, S. & Tunstall, S. (2008) 'I wish I'd never heard of Banbury': The relationship between 'place' and the health impacts from flooding. *Health and Place*, 14, 133–154. Available from: <https://doi.org/10.1016/j.healthplace.2007.05.006>
- Thomson, R., Hadfield, L., Holland, K., Henwood, K., Moore, N., Stanley, L. et al. (2014) *New Frontiers in QLR: Definition, design and display*. National Centre for Research Methods Report. Available from: [https://eprints.ncrm.ac.uk/3297/1/new\\_frontiers\\_in\\_QLR.pdf](https://eprints.ncrm.ac.uk/3297/1/new_frontiers_in_QLR.pdf) [Accessed 1st September 2022].
- Thomson, R. & McLeod, J. (2015) New frontiers in qualitative longitudinal research: An agenda for research. *International Journal of Social Research Methodology*, 18(3), 243–250. Available from: <https://doi.org/10.1080/13645579.2015.1017900>
- Tunstall, S., Tapsell, S., Green, S., Green, C., Floyd, P. & George, C. (2006) The health effects of flooding: Social research results from England and Wales. *Journal of Water and Health*, 4(3), 365–380. Available from: <https://doi.org/10.2166/wh.2006.031>
- Walker-Springett, K., Butler, C. & Adger, W.N. (2017) Wellbeing in the aftermath of floods. *Health and Place*, 43, 66–74. Available from: <https://doi.org/10.1016/j.healthplace.2016.11.005>
- Werritty, A., Houston, D., Ball, T., Tavendale, A. & Black, A. (2007) *Exploring the social impacts of flooding and flood risk in Scotland*. Edinburgh, UK: Scottish Executive Social Research. Available from: <http://www.gov.scot/Publications/2007/04/02121350/0>

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