

ARTICLE

# Integrating Qualitative Methods within Intervention Mapping: A Practical Guide for Planning, Implementation, and Evaluation

Julia Schnepf and Michèle Denise Birtel

## Abstract

Qualitative research methods have historically been undervalued in psychology and health sciences, overshadowed by the dominance of behaviorism and a positivist research tradition that prioritized quantitative approaches. Qualitative methods were often dismissed as overly interpretive and subjective, perceived as incompatible with positivist principles. However, recent years have seen a resurgence in the use of qualitative methods, with growing recognition of their unique contributions, particularly as complementary to quantitative approaches. Despite this progress, concerns remain, including the resource-intensive nature of qualitative research and the perceived lack of generalizability of findings. Furthermore, many health scholars receive limited training in these methods, hindering their broader adoption and effective use. We argue for the indispensable integration of qualitative methods in the design, implementation, and evaluation of health interventions and advocate for improved training for health promoters and other professionals. Qualitative research can offer critical insights into why and how interventions succeed, capturing essential stakeholder perspectives that can inform adaptation and enhance effectiveness of interventions. Using the example of Intervention Mapping, we outline a guide to selecting appropriate qualitative methods for various contexts, target populations, and phases of intervention planning, implementation, and evaluation. We also provide an outlook on how the challenges of qualitative methods can be addressed.

**Key words:** Health interventions; Intervention mapping; Health promotion; Qualitative methods

*Julia Schnepf and Michèle Denise Birtel share first authorship.*

## 1. The Importance of Qualitative Methods in Health Intervention Research: Illustrated by the Example of Intervention Mapping

The longstanding ‘paradigm war’ between advocates of quantitative and qualitative research has shaped debates in the social sciences, including health research, for decades (Knappertsbusch, 2023). While this divide is less pronounced today, some misconceptions about qualitative methods persist. Before discussing how qualitative approaches can enrich health intervention research across various stages, we briefly clarify the definitions of qualitative and quantitative research we use here.

Qualitative research can be traced back to foundational work such as that of Kracauer (1952), who emphasized that beyond manifest meaning, i.e., shared social meanings of language, latent meaning should also be considered. Latent meaning reflects the subjective, individual interpretations that shape how people express and understand experiences. Since then, qualitative research has been understood as an interpretive approach focused on exploring and understanding people’s perspectives, motivations, and experiences. In contrast, quantitative research emphasizes numerical measurement and observable phenomena.

Qualitative approaches offer deep and nuanced insights into how individuals think, feel, and act, often through interviews, focus groups, and other interpretive techniques (Fernandez et al., 2019). They also support culturally and contextually sensitive intervention development. Health interventions are most effective when adapted to the specific needs and contexts of target populations (O’Mara-Eves et al., 2013). This aligns with community-based participatory research (CBPR), a “collaborative approach to research that equitably involves all partners in the research process and recognizes the unique strengths that each brings” (Wallerstein et al., 2018, p. 3). Rather than viewing qualitative methods as limited due to their emphasis on subjectivity, it is more productive to recognize how each method contributes distinctive strengths and can offset the other’s limitations. The question is not which method is superior, but how they can best be integrated. The final goal should be to align the research methods with the research questions and phenomenon under research to achieve the research aims, rather than acting from a preference for one method or another.

This perspective is reflected in established intervention development guidelines. For example, the guidance on developing complex interventions to improve health and healthcare (O’Cathain et al., 2019) and the Medical Research Council’s guidance for developing and evaluating complex interventions (Skivington et al., 2021) explicitly recommend incorporating qualitative approaches. These frameworks emphasize that qualitative methods are not merely optional complements to quantitative techniques, but essential to designing effective, context-responsive interventions.

Qualitative methods are also central to intervention planning frameworks such as Intervention Mapping (Bartholomew Eldredge et al., 2016; Kok et al., 2016), which emphasizes community involvement and seeks to design interventions from the ground up rather than through top-down expert-driven processes (Moore et al., 2015). Because of this, Intervention Mapping provides a valuable structure for demonstrating when and how qualitative methods can be applied throughout intervention planning, implementation, and evaluation. In the following section, we describe the use of qualitative methods in the different steps of the Intervention Mapping process.

## 2. Practical Guide: Which Qualitative Methods are Suitable for which Intervention Mapping Steps?

Intervention Mapping is a systematic approach to designing, implementing, and evaluating theory- and evidence-based behavior change programs (Bartholomew Eldredge et al., 2016; Kok et al., 2016). It includes six steps: (1) **Needs Assessment** to identify the health problem and its causes, (2) **Program Outcomes and Objectives** to define desired changes and behavioral determinants, (3) **Program Design** to select theory-based methods and practical strategies, (4) **Program Production** to develop and organize materials, (5) **Implementation Plan** to ensure program adoption and delivery, and (6) **Evaluation Plan** to assess both implementation and outcomes. Intervention Mapping has been used in a range of areas such as sexual health (Mevisen et al., 2017), digital health (Marcos et al., 2024), and stigma (Stutterheim et al., 2025). In the following sections, we would like to highlight how different qualitative methods can be used effectively in different phases of intervention mapping. For a condensed overview, Table 1 provides a concise overview of selected qualitative methods considered particularly suitable for the various phases of intervention mapping.

**Table 1**

*A selection of qualitative methods for different phases of intervention mapping*

Intervention Mapping Step	Qualitative Methods	Purpose/Use
<b>1. Needs Assessment</b>	Focus groups, semi-structured interviews, qualitative content/thematic analysis, arts-based methods, body mapping technique	Explore individual, social, and structural causes of health problems; generate insights into motivations, contexts, and cultural perceptions.
<b>2. Program Outcomes &amp; Objectives</b>	Semi-structured interviews, Delphi method, qualitative meta-analysis/synthesis	Identify behavioral and environmental determinants; clarify objectives through expert consensus; synthesize contextual factors from prior research.
<b>3. Program Design</b>	Qualitative literature analysis, qualitative meta-analysis	Select appropriate theory-informed methods based on context; assess practical strategies' effectiveness through qualitative evidence.
<b>4. Program Production</b>	Focus groups, think-aloud interviews, open-ended questionnaires, qualitative content analysis	Test and refine program materials via direct feedback; identify usability issues and align with participant expectations
<b>5. Implementation Plan</b>	Semi-structured interviews, group discussions, open-ended questionnaires	Ensure feasibility and acceptability for implementers; identify support needs and possible barriers to adoption.
<b>6. Evaluation Plan</b>	Case studies, stakeholder interviews, process evaluation, grounded theory, open-ended survey questions	Understand implementation fidelity and effectiveness; capture participant and stakeholder feedback; identify causal links and areas for improvement.

### Step 1: Needs Assessment

In Step 1 of the Intervention Mapping process, qualitative methods help understand the causes of a health problem at individual, social, and structural levels (Bartholomew Eldredge et al., 2016). The planner conducts a detailed problem analysis, forms a planning group, performs a needs assessment to create a logic model of the problem, and sets the program goals. Step 1 is pivotal, as all subsequent steps build on it. Typically, intervention planners begin by reviewing relevant literature and existing data. At this stage, qualitative methods can already be helpful. For instance, for interventions to address teenage vaping, planners might start with a thorough literature review. By using qualitative content analysis software such as MAXQDA or Atlas.ti (Kuckartz and Rädiker, 2019; Smit and Scherman, 2021), relevant articles can be organized, thematically coded, and analyzed both deductively and inductively. This could involve classifying the actors mentioned in the literature (e.g., vaping teenagers, parents, teachers, therapists, physicians) and the variables under investigation (e.g., motives, contextual factors, peer pressure, role models), guiding both stakeholder selection and intervention planning.

Qualitative methods also benefit the needs assessment. Focus group discussions or (semi-) structured interviews with target groups, implementers, and stakeholders can yield deeper insights (Krueger and Casey, 2015). From a pragmatic perspective, the aim of Step 1 is to establish a shared understanding of the problem and identify potential solutions. In our example, observational data might show when and where teenagers vape, while statistics reveal how many vape, how frequently, and the immediate health effects (Ranjit et al., 2021). Yet these data alone represent an external view and a lack of in-depth understanding of teenagers' own perspectives on vaping.

A fuller picture emerges by asking teenagers themselves about their initial motivations, ongoing reasons for vaping, internal conflicts, and the circumstances under which they might quit. Such interview data can be analyzed using qualitative content (Charmaz and Belgrave, 2012) or thematic analysis (Braun and Clarke, 2006). Relevant content or thematic categories may be derived from existing research (deductive), emerge 'naturally' from the data (inductive), or combine both approaches. Two more methods that can be used in Step 1, especially when working directly with the recipients of an intervention, are more abstract interpretative methods such as arts-based approaches (Casey and Murray, 2022) or body mapping (Coetzee et al., 2017), which can also be assessed using qualitative interviews or thematic analysis (for an explanation see Table 1). Given that Intervention Mapping positions itself as a community-oriented approach, qualitative methods, particularly in the early stages of intervention planning, are valuable for gaining deeper insight into the target group's internal perspectives, perceptions, and needs.

## Step 2: Program Outcomes and Objectives – Logic Model of Change

Step 2 is a particularly comprehensive phase of the Intervention Mapping process (Bartholomew Eldredge et al., 2016; Kok et al., 2016). In this stage, qualitative methods help identify and specify behavioral determinants of a health behavior (Peters, 2014). Planners refine the target group, define target behaviors and performance objectives, determine relevant environmental determinants and actors, and outline how to positively influence them to achieve the intended outcomes. It concludes with creating a change matrix that documents these objectives, behaviors, and contextual factors.

Qualitative methods can be employed extensively here. For instance, open-ended semi-structured interviews with stakeholders (e.g., teenage vapers, experts) might help to define feasible intervention objectives. Another suitable approach is the Delphi method, which is often used in market and consumer research to obtain a precise trend diagnosis or reach consensus on specific topics through several rounds of expert surveys, each followed by feedback rounds (Boulkedid et al., 2011). In Intervention Mapping, this method can be applied to jointly identify priorities and clarify which objectives matter most to the planning group (Boulkedid et al., 2011).

Planners can also use similar approaches as in Step 1 to systematically review the literature and detect relevant environmental determinants and actors. Qualitative meta-syntheses, for example, can help to identify which contextual factors in prior health interventions have facilitated or obstructed success. Unlike quantitative meta-analyses which draw attention to the numerical effect sizes of a variable, qualitative approaches such as qualitative meta-analyses or meta-syntheses are based more strongly on an author's own interpretation of the meaning of previous research (findings) within a specific field, which allows researchers an inclusion of methodologically different research articles (Timulak and Creaner, 2022). Rahimi et al. (2008), for instance, conducted a qualitative meta-analysis to identify the effectiveness of health information systems in diverse healthcare contexts, extracting factors that either facilitated or hindered implementation.

In addition, in-depth or semi-structured interviews with stakeholders can also reveal important environmental determinants. Aira and colleagues (2003), for example, used open-ended interviews to identify contextual factors influencing physicians' discussions about problematic alcohol use in Eastern Finland. Hence, these diverse qualitative approaches are key to shaping a more targeted and context-sensitive intervention.

## Step 3: Program Design

Step 3 of the Intervention Mapping approach involves selecting theory-informed methods and translating them into practical applications to influence health behaviors, group dynamics, and broader organizational or societal factors (Bartholomew Eldredge et al., 2016; Kok et al., 2016). Qualitative methods provide deeper insights into the applicability of theoretical models within specific contexts. This step includes defining program themes, identifying evidence-based change methods, and designing practical applications. As in Step 2, qualitative methods can help pinpoint which behavior change techniques (e.g., information campaigns, role modeling, nudging, incentives) are most likely effective based on existing research. In the example of youth vaping, one could draw on adolescent smoking research and conduct a qualitative literature analysis to classify successful methods (e.g., Garrison et al., 2003; Grimshaw and Stanton, 2006). Performing a qualitative meta-analysis may help to organize behavior change instruments by thematic focus and assumed effectiveness, linking them to benefits and drawbacks (Schnepf and Groeben, 2019). Building on such findings, planners can then select campaign elements grounded in prior evidence, even if drawn from related contexts.

## Step 4: Program Production

Step 4 focuses on producing the intervention: finalizing its structure, materials, and protocols. It involves refining components, developing communication tools, and ensuring alignment with participant needs (Steps 1 and 2) and the broader context (Bartholomew Eldredge et al., 2016; Kok et al., 2016). Pilot testing with implementers and recipients is vital to assess materials and strategies before full-scale implementation. This is also where qualitative methods may come into play, such as incorporating feedback loops with the target group to prevent designing solutions that fail to address their needs. For instance, Nicholas et al. (2017) conducted a qualitative content analysis of mental health apps reviews and revealed many unmet user needs. Likewise, focus groups (Krueger and Casey, 2015), semi-structured interviews, open-ended questionnaires (Charmaz and Belgrave, 2012) or the think-aloud technique (Anderson, 1987) can be used to pre-test and refine program components (also see Table 1). These methods can help to identify strengths and weaknesses in the draft program, reveal potential misalignments with the target audience's needs or expectations, and inform necessary adaptations. They support an iterative, user-centered refinement process that aligns with the goals of Step 4.

### Step 5: Program Implementation Plan

Step 5 addresses the practical implementation of the program, ensuring adopters are aware, motivated, and equipped to use it effectively over time (Bartholomew Eldredge et al., 2016; Kok et al., 2016). Without sufficient usage, even well-designed health programs have little impact (Glasgow et al., 2004). Therefore, Fernández et al. (2019) extended Intervention Mapping with Implementation Mapping, offering a roadmap for translating ‘what works’ into ‘what is used’ in daily practice. It is vital to consider the needs of those who will implement the intervention. Feedback loops with these implementers can reveal which components work well and where adjustments are needed. Such loops can be well created through open-ended questionnaires, semi-structured interviews (Charmaz and Belgrave, 2012), or group discussions (Krueger and Casey, 2015).

### Step 6: Evaluation Plan

In Step 6, the planner designs an evaluation of the intervention, covering both effectiveness and process dimensions. In addition to quantitative outcome measurements, qualitative approaches enable process evaluations to understand whether the program was implemented as planned and which aspects worked well and which did not work well. Also, for effect evaluations, qualitative methods can provide insight and fill gaps (Bartholomew Eldredge et al., 2016). As mentioned in Step 2, success criteria of an intervention should be measurable. For example, measuring a reduction in vaping among adolescents is straightforward, but purely quantitative methods can be one-sided: they reveal little about the challenges teens face in staying abstinent or which program components helped them succeed. Hence, qualitative methods are strongly recommended (Lub, 2014).

According to Lub (2014), various qualitative methods are suitable for evaluation purposes. Case studies with extreme cases, i.e., those who benefited greatly or not at all, can reveal relevant context factors of success and failure. Similarly, supplementing quantitative measures with open-ended survey questions or qualitative stakeholder interviews can offer a more complete understanding. Lub (2014, p. 54) also notes grounded theory as effective for pinpointing causal relationships in qualitative data, such as conflicting program components. Another essential method is process evaluation, involving feedback from multiple perspectives on how the intervention was carried out. Stakeholders might discuss ‘what worked well’ (instrumental perspective) or consider the intervention’s underlying norms and values (constructivist perspective). This approach ensures that any changes in behavior can be interpreted through both numbers and their context. By blending quantitative and qualitative insights, planners can refine the intervention and measure its impact more accurately, ensuring the program’s ongoing development. In this way, Step 6 allows for an in-depth understanding of how and why an intervention works, and where it might need improvements.

## 3. Conclusion

In Intervention Mapping, qualitative methods prove invaluable in several ways. They can assist in understanding the causes of a health problem at individual, social, and structural levels. They might increase cultural sensitivity, i.e. they help understand how cultural factors influence health behaviors, and what adjustments to the intervention may be necessary. They can improve contextual relevance as they allow the adaption of interventions to specific challenges and resources within different communities. Finally, they might also facilitate linguistic accessibility, help to understand the communication needs of the target group and with this an appropriate adaptation of Intervention Mapping. In sum, they provide insight into the cultural values, social norms, and specific challenges of target populations to ensure that interventions are feasible, accepted and effective (Bartholomew Eldredge et al., 2016; Kreuter et al., 2003).

In this overview article, we have discussed only a limited selection of qualitative methods that are commonly used in the literature at different phases of Intervention Mapping. However, the field is much broader, and intervention researchers must decide for themselves which qualitative (or quantitative) method seems most appropriate for their research question, the intervention goals, and the target group. As Schreier (2012) pointed out: there is no “one-size-fits-all approach.” The research method should never dominate the research object. Researchers should always choose the method that is most suitable and appropriate for their research question and object.

## 4. Outlook

Looking ahead, the integration of qualitative methods in health intervention planning is likely to become even more critical, especially as complex societal challenges demand context-sensitive and culturally grounded solutions. Advances in digital tools, such as AI-assisted transcription and analysis software, will further streamline qualitative research processes, increasing their accessibility and scalability. Embedding qualitative methods more systematically in intervention development frameworks, such as Intervention Mapping, can support co-creation with stakeholders and improve long-term impact. Future research should also focus on mixed-methods designs that equally value qualitative and quantitative insights, avoiding the marginalization of interpretive approaches. Finally, like all research methods, qualitative methods require in-depth education and training. Although there are practical instructions for the use of qualitative methods in literature synthesis, this also requires practice (Kuckartz and Rädiker, 2019; VERBI Software, 2023). In practice, however, interventions often have to be planned under a certain time pressure, so there may not be enough time for careful familiarization with the peculiarities of qualitative methods.

Addressing these challenges requires greater integration of qualitative methods in psychology curricula, increased methodological training, and broader acceptance of diverse epistemological approaches within psychological and health sciences research (Cooper et al., 2015; Lyons and Coyle, 2007; Povee and Roberts, 2014). This will be key to equipping future researchers and practitioners with the skills needed to design inclusive, effective, and sustainable interventions.

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**Julia Schnepf** works at the Department of Work and Social Psychology, Faculty of Psychology and Neuroscience, Maastricht University, The Netherlands.  
 ORCID: 0000-0002-5008-7226  
 Email: [julia.schnepf@maastrichtuniversity.nl](mailto:julia.schnepf@maastrichtuniversity.nl)  
 Website: <https://cris.maastrichtuniversity.nl/en/persons/julia-schnepf/>



**Michèle Denise Birtel** is the lead of the Centre for Mental Health at the University of Greenwich, London, United Kingdom.  
 ORCID: 0000-0002-2383-9197  
 Email: [M.D.Birtel@greenwich.ac.uk](mailto:M.D.Birtel@greenwich.ac.uk)  
 Website: [www.michelebirtel.com](http://www.michelebirtel.com)