

Review

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Posted Date: 11 June 2025

doi: 10.20944/preprints202506.0759.v1

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Review

A Perspective on Innovating Qualitative Research Methods to Optimise Women’s Health Research

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Abstract: Qualitative research methods have historically been centered on framework analysis and narrative reporting, particularly in contexts like healthcare, where patient experiences are paramount. While this approach has yielded invaluable insights, it often underutilizes the full potential of qualitative data. This paper critically appraises the current state of qualitative methods, examining their traditional scope and exploring avenues for innovation. Through a systematic critique of existing literature and methodologies, this paper identifies limitations in conventional approaches and proposes novel strategies to maximize data outputs, enhancing the scope and utility of qualitative research. The researchers can obtain richer, real-time data from diverse populations integrating technology-driven approaches, including digital ethnography, AI-supported thematic analysis, and mobile health platforms. Co-design and community-based participatory research would also ensure the women’s voices are central in shaping interventions and policies. Innovative frameworks that consider cultural sensitivity, socio-economic disparities, and life course perspectives are crucial for addressing neglected areas like menopause, reproductive health, mental health, and gender-based violence. Methodological advancements must also prioritize ethical considerations, such as informed consent and safeguarding vulnerable populations, while embracing inclusivity in participant recruitment. Optimized qualitative methods can expand the understanding, foster engagement, and provide actionable insights for targeted interventions in terms of women’ health initiatives. Re-designing the scope of qualitative research, would not only improve health outcomes of women but also empower women as active agents in shaping their health and well-being.

Keywords: qualitative research; health disparities; women’s health; technology-driven approaches

Background

Qualitative research has long been a cornerstone of social science and healthcare studies, providing vital insights into patient experiences, behaviours, and perceptions [1]. Common methodologies, such as framework and thematic often constrains the potential applications of qualitative data beyond reporting patient experience, although it holds the promise of uncovering patterns, informing intervention tolerability, and integrating with quantitative methods to provide holistic insights [1,2]. This is an increasingly important aspect for improving women's health and wellbeing [3].

Historically, studies on women's health have used qualitative methods to explore experiences linked to conditions such as endometriosis, post-partum depression, and menopause [4,5]. For instance, qualitative research has revealed the stigma and misdiagnosis associated with endometriosis, emphasising the need for better diagnostic pathways and patient education. Similarly, narratives from women experiencing menopause have highlighted the diversity of symptoms and the inadequacy of existing healthcare responses, informing more tailored care strategies [6,7]. Traditional qualitative methods often focus on descriptive narratives, which, while rich in detail, may fall short in identifying broader patterns or generating actionable insights. For example, while patient narratives in reproductive health studies provide valuable data on individual experiences, they may not easily translate into predictive models or systemic changes. Furthermore, the reliance on manual coding and analysis can limit scalability, especially when dealing with large datasets [8].

Women's health can be effectively explored using a combination of quantitative and qualitative data, as each provides unique insights into health outcomes and lived experiences [1,2,6]. Quantitative methods offer a robust framework for generalisability and statistical analysis, enabling researchers to uncover trends and correlations [9]. Conversely, qualitative approaches provide a deeper understanding of contextual and individual experiences, essential for addressing multifaceted issues such as disease sequelae. Methodological innovation is vital in this field as it facilitates the exploration of complex, interwoven factors affecting health that traditional methods may overlook [10]. By enhancing reproducibility, innovative qualitative methods increase the reliability and validity of findings, while also expediting the discovery process through more efficient scientific workflows. Furthermore, the ability to apply insights across diverse contexts, disciplines, and populations ensures that research outputs remain relevant and impactful globally, promoting equity in women's health research and interventions [10,11].

This perspective critiques the historical reliance on narrative-driven reporting and argues for an expanded methodological toolkit that enhances the analytical and practical applications of qualitative research. By addressing these limitations and leveraging innovations such as computational tools and mixed methods, qualitative research can transcend its traditional boundaries, offering transformative insights for healthcare and beyond [12].

Overview

Current Practices and Limitations

Thematic analysis of the literature revealed the following dominant trends:

1. Reliance on Framework and Thematic Analysis

Framework and thematic analysis remain the most commonly used approaches in qualitative research, particularly in healthcare. These methods emphasize the coherence of narratives and fidelity to participant voices, ensuring authenticity and respect for the lived experiences of individuals⁶. However, this reliance often constrains the scope of interpretation to descriptive accounts, limiting the generation of theoretical or predictive insights. For instance, in studies on chronic illness management, predefined frameworks may overlook emergent themes that do not fit the established coding structure [1]. This rigidity can prevent researchers from capturing the dynamic

and evolving nature of healthcare experiences, reducing the potential for developing innovative solutions or informing policy changes.

2. *Underutilisation of Computational Tools*

Despite advancements in technology, the adoption of computational tools such as natural language processing (NLP) and machine learning in qualitative research remains limited. These tools have the potential to analyse large datasets, uncover hidden patterns, and enhance the objectivity of qualitative analysis. For example, NLP could be used to identify linguistic markers of emotional distress in patient narratives, enabling early intervention strategies in mental health care. However, concerns about the technical expertise required and the perceived loss of depth and nuance in automated analysis have hindered widespread adoption [13]. Furthermore, the integration of these tools requires careful calibration to ensure that the richness of qualitative data is not compromised.

3. *Limited Integration with Quantitative Data*

The separation between qualitative and quantitative methods persists in much of healthcare research, limiting the potential for multidimensional analysis. Qualitative insights, while rich and context-specific, often remain siloed from quantitative findings, reducing their applicability in broader healthcare contexts [5]. For example, in studies on patient adherence to treatment regimens, qualitative interviews may reveal barriers such as stigma or lack of support, while quantitative data might capture adherence rates. The integration of these datasets could provide a comprehensive understanding of the issue, leading to more effective interventions. However, methodological silos and the lack of frameworks for integrating diverse data types pose significant challenges [14].

4. *Focus on Lived Experiences*

While the focus on lived experiences is a strength of qualitative research, it can also be a limitation when broader systemic or predictive applications are required. Patient-centered studies often prioritize the documentation of individual narratives, providing valuable insights into personal experiences but rarely addressing systemic factors or predictive trends [3]. For instance, studies on menopause often highlight the variability of symptoms and personal coping strategies but may fail to link these findings to broader healthcare system inadequacies or predictive models for identifying at-risk populations. Expanding the scope of qualitative research to include systemic analyses and predictive modelling could significantly enhance its impact.

Innovations in Qualitative Methods

Emerging trends in the literature suggest potential avenues for expanding qualitative methodologies:

1. *Integration of Big Data Analytics*

The integration of big data analytics into qualitative research is a transformative innovation that enables researchers to analyse large, complex datasets efficiently. Computational tools, such as NLP, sentiment analysis, and clustering algorithms, can uncover patterns and relationships that manual analysis might overlook. For example, NLP has been employed to analyse patient narratives, identifying recurring themes in healthcare experiences, such as dissatisfaction with service delivery or barriers to accessing care [8]. These tools not only enhance the scalability of qualitative analysis but also provide a level of objectivity that helps mitigate researcher bias. However, adopting big data analytics in qualitative research requires interdisciplinary collaboration and technical expertise, which are barriers that need to be addressed through training and resource allocation [15].

2. *Dynamic Frameworks*

Dynamic frameworks, such as iterative coding and reflexive thematic analysis, offer a more flexible approach to qualitative research. Unlike traditional frameworks, which rely on predefined codes and categories, dynamic frameworks adapt to emergent themes during the analysis process [1]. This flexibility is particularly valuable in exploratory research, where the phenomena under

study may not fit neatly into existing theoretical models. For instance, reflexive thematic analysis has been used in studies on women's reproductive health to capture the evolving understanding of stigma and cultural norms around menstruation [16]. Dynamic frameworks enhance the depth and authenticity of qualitative insights, though they require researchers to maintain rigorous reflexivity to avoid interpretative bias.

3. *Mixed Methods Approaches*

Mixed methods approach combines qualitative and quantitative data, providing a more comprehensive understanding of complex phenomena. This integration enables researchers to corroborate findings across methodologies, enhancing the validity and generalizability of their conclusions [5]. For example, a mixed methods study on postpartum depression might use qualitative interviews to explore mothers' lived experiences while analysing quantitative data on prevalence rates and treatment outcomes. This dual approach provides both depth and breadth, making it particularly valuable in healthcare research, where patient experiences and clinical outcomes must be understood in tandem. However, mixed methods research can be resource-intensive and requires careful planning to ensure methodological coherence

4. *Participatory and Co-creation Models*

Participatory and co-creation models engage stakeholders in the research process, fostering shared ownership and producing outcomes that are both actionable and contextually relevant [1]. These models are especially effective in community-based research, where involving participants in data collection and analysis can lead to more culturally sensitive and sustainable interventions. For instance, co-creation approaches have been employed in studies on maternal health in low-resource settings, where local women collaborate with researchers to identify barriers to care and design interventions [11]. While participatory models democratize the research process, they require significant time and effort to build trust and ensure equitable participation.

5. *Data Visualisation Techniques*

Data visualisation techniques, such as thematic maps, network diagrams, and interactive dashboards, are powerful tools for analysing and presenting qualitative data. These techniques allow researchers to identify patterns, relationships, and trends that might not be apparent in textual data alone [12]. For example, network diagrams have been used to map the social support systems of individuals with chronic illnesses, providing insights into the role of family, friends, and healthcare providers in patient outcomes [17]. Visualization enhances the accessibility and impact of qualitative findings, making them more comprehensible to diverse audiences, including policymakers and practitioners. However, developing effective visualizations requires technical skills and an understanding of the principles of graphic representation [18].

6. *Intersectionality*

Incorporating intersectionality to address diversity in women's health research provides a transformative framework for understanding health disparities. By examining overlapping identities such as race, class, gender, and sexuality, this approach reveals the nuanced ways systemic inequalities shape health experiences and outcomes. It allows for more targeted interventions, as it considers barriers to care that traditional single-axis analyses might overlook [19–21]. For instance, analysing how systemic biases affect Black women experiencing menopause uncovers specific structural and cultural challenges, offering opportunities for tailored solutions. However, operationalizing intersectionality poses challenges, including complexity in data collection and analysis, and the risk of oversimplifying multifaceted identities [22]. Despite these hurdles, integrating intersectional methods can enhance equity and inclusivity in research and healthcare delivery.

7. *Innovative Interview Techniques*

Innovative interview techniques, such as photo-elicitation, body mapping, and diary studies, offer a dynamic approach to exploring complex health experiences. By incorporating visual and participatory elements, these methods enable participants to express experiences that may be difficult to articulate verbally, fostering deeper engagement and richer responses [23]. For example, body mapping to visualise menstrual pain and its impact on daily life provides a powerful tool for capturing both the physical and emotional dimensions of such experiences. These techniques enhance reflexivity, allowing participants to explore their narratives in nuanced ways. photo-elicitation can significantly improve health studies by fostering deeper engagement and richer data collection [24]. This technique involves the use of photographs either provided by researchers or participants themselves to prompt discussion during interviews. It allows participants to reflect on their lived experiences more vividly and facilitates the exploration of complex or sensitive topics, such as chronic pain, mental health, or health-related behaviours, that may be difficult to articulate through traditional interviews. Photo-elicitation enhances participant-centered research by shifting the focus to their perspectives, encouraging more detailed and personal responses. It can also uncover contextual and cultural nuances that might be overlooked in standard data collection methods. Moreover, visual stimuli can bridge communication gaps, particularly when working with populations that might face language, literacy, or cognitive barriers. However, this method is not without challenges [25,26]. It can require significant preparation, including ethical considerations around privacy and consent for photo use. Interpretation of visual data can also be subjective, necessitating careful triangulation with other data sources. Despite these limitations, photo-elicitation remains a powerful tool to enrich health research by capturing the complexity and depth of participants' lived experiences. Additionally, implementation can be resource-intensive, requiring skilled facilitators and participant buy-in. Additionally, data interpretation may be complex, as visual and narrative outputs are highly subjective. Despite these challenges, these methods provide invaluable insights, particularly in areas like menstrual health, where lived experiences are deeply personal and context-specific.

8. *Digital Ethnography*

Digital ethnography, which involves analysing online forums, social media, and digital health platforms, offers a powerful means of capturing real-time and authentic health experiences. This approach is particularly valuable for exploring stigmatised or underreported topics such as endometriosis, Premenstrual Dysphoric Disorder (PMDD), or menopause, where individuals may feel more comfortable sharing their experiences in digital spaces than in traditional research settings [26]. By studying these discussions, researchers can access diverse perspectives and identify emerging themes that may not surface in clinical or structured interviews [27,28]. For instance, analysing how women discuss menstrual health challenges in online communities can reveal common misconceptions, emotional burdens, and unmet needs, informing targeted education campaigns and interventions. However, digital ethnography also has limitations. Online discussions may not represent all demographics, as access to and participation in digital platforms can vary based on socioeconomic, geographical, and cultural factors. Furthermore, ethical considerations, such as informed consent and privacy in publicly available online data, require careful navigation [29]. Despite these challenges, digital ethnography is an innovative tool that can complement traditional methods, enriching understanding and driving evidence-based solutions in women's health.

1. *Participatory Action Research (PAR)*

PAR is a transformative methodology that actively involves participants as co-researchers, allowing them to identify issues and co-design interventions. This collaborative approach empowers communities, particularly women, by valuing their lived experiences and fostering ownership of the research process. For example, collaborating with underserved groups to develop culturally sensitive health materials on menopause ensures that interventions are both relevant and effective, addressing specific community needs and cultural contexts [30]. The impact of PAR extends beyond the research

itself, as it fosters trust in outcomes by promoting transparency and mutual respect. By giving participants a voice in decision-making, it also enhances the acceptability and sustainability of interventions. However, the approach presents challenges, including power dynamics between researchers and participants, which may inadvertently influence the process. Additionally, PAR can be time- and resource-intensive, requiring sustained engagement and negotiation to balance diverse perspectives and priorities [31]. Despite these challenges, PAR offers a powerful way to address health inequities and develop contextually appropriate solutions. Its emphasis on co-creation ensures that research not only generates knowledge but also contributes to meaningful, community-driven change.

2. Longitudinal studies

Longitudinal qualitative studies offer a unique and valuable approach to understanding how experiences, behaviours, and perceptions evolve over time. Unlike cross-sectional studies, they allow researchers to capture the dynamic and temporal nature of phenomena, particularly in areas like health, where changes occur gradually or unpredictably [25,29]. By repeatedly engaging with participants over an extended period, these studies provide rich, in-depth data that reveal patterns, transitions, and critical turning points in individual or group narratives. This method is particularly useful in exploring complex and sensitive topics, such as chronic illness, mental health, or life-stage transitions like menopause [30]. It enables researchers to understand how individuals adapt to changing circumstances and how external factors, such as social support or healthcare interventions, influence these adaptations. Moreover, longitudinal qualitative studies can identify causal pathways and inform interventions by highlighting when and how specific factors impact outcomes.

However, these studies are not without challenges. They require significant time, financial, and logistical investments, often making them resource-intensive. Maintaining participant engagement over time can be difficult, particularly if trust is not well-established or if participants experience fatigue or life changes. Attrition is a common issue, which can introduce bias and limit the generalizability of findings. Additionally, the volume of data generated necessitates robust analytical frameworks to ensure consistency and rigor. Despite these challenges, longitudinal qualitative studies provide unparalleled insights into the lived experiences of participants, offering a nuanced understanding of change and continuity over time. When conducted thoughtfully, they can produce transformative findings that inform policy, practice, and theory in meaningful and contextually relevant ways [32,33].

3. Integration of mixed-methods

The integration of mixed methods, combining qualitative insights with quantitative data, offers a comprehensive approach to understanding complex health issues. By leveraging the strengths of both methodologies, this approach balances depth and generalisability [34]. Qualitative data provide rich, contextualized insights into lived experiences, while quantitative data enable pattern detection and statistical analysis across larger populations [35,36]. Together, they create a holistic framework that strengthens the validity and relevance of research findings. For example, pairing interviews on contraceptive preferences with survey data can reveal both the nuanced motivations behind individual choices and broader trends in family planning practices. This integration allows for a deeper understanding of how personal, cultural, and systemic factors intersect, informing the design of more effective and user-centered healthcare services.

However, mixed-methods research presents challenges, including the need for expertise in both qualitative and quantitative methodologies, which can increase the complexity of study design and execution. Ensuring methodological rigor in both components is crucial to avoid bias or imbalance. Additionally, the integration process where findings from the two methods are combined requires thoughtful alignment to ensure coherence and avoid misinterpretation. Despite these challenges, the mixed-methods approach is highly impactful, particularly in health research. It provides a more robust evidence base to inform policy and practice, ensuring that interventions are not only

empirically sound but also contextually meaningful and responsive to the diverse needs of target populations.

4. Ethnophysiological approaches

Ethnophysiological approaches, which examine the intersection of cultural beliefs and biological understandings of health, provide critical insights into how diverse populations conceptualize health and illness. By acknowledging that health practices are deeply embedded in cultural contexts, these approaches foster culturally respectful and contextually relevant healthcare interventions. For example, studying perceptions of menstruation in different cultural settings can reveal taboos, myths, and societal attitudes that shape individuals' access to menstrual health resources. These insights are invaluable for addressing challenges such as period poverty in ways that resonate with the cultural realities of target communities [35–37]. The impact of ethnophysiological approaches lies in their ability to bridge the gap between biomedical models of health and the lived experiences of individuals. They ensure that interventions are not only scientifically sound but also culturally acceptable, thereby increasing their effectiveness and uptake. Such approaches are particularly useful in addressing health disparities and improving equity by tailoring solutions to specific populations [33,37]. However, these approaches are not without challenges. They require a nuanced understanding of cultural diversity and the ability to navigate complex and, at times, conflicting belief systems. Researchers must also be cautious to avoid imposing their own biases or perpetuating stereotypes about cultural practices. Additionally, translating ethnophysiological findings into actionable interventions requires collaboration between cultural experts, healthcare providers, and community members, which can be resource-intensive.

Despite these challenges, ethnophysiological approaches are essential for developing healthcare strategies that respect and incorporate the values and beliefs of diverse populations. By doing so, they contribute to more inclusive and effective health interventions, particularly in areas where cultural beliefs heavily influence health behaviours and outcomes

Case Studies of Innovative Applications

A few illustrative examples below demonstrate the potential of these innovations:

Healthcare Systems Analysis

The application of NLP in healthcare systems analysis represents a significant advancement in the use of qualitative data. By analysing patient narratives, NLP can identify systemic issues such as inefficiencies in care coordination, unmet patient needs, and communication gaps within healthcare systems [19]. For example, a study using NLP to evaluate electronic health records and patient feedback found recurring themes of dissatisfaction with appointment scheduling and delays in diagnostic testing. These insights informed the redesign of care pathways, improving patient satisfaction and operational efficiency [10]. However, the integration of NLP requires significant technical expertise and resources, which may limit its accessibility in low-resource settings. Furthermore, the ethical considerations around patient data privacy must be carefully managed to ensure compliance with regulations such as General Data Protection Regulation (GDPR).

Educational Policy Development

In the field of education, mixed methods research has been instrumental in linking qualitative insights from teacher interviews with quantitative performance metrics of students. This approach enables a comprehensive understanding of the factors influencing educational outcomes, from classroom practices to systemic inequities [5]. For instance, a study combining qualitative interviews with teachers about curriculum challenges and quantitative data on student performance highlighted disparities in resource allocation as a key barrier to equitable education [7]. These findings led to evidence-based policy changes, including targeted funding and professional development programs. Despite its strengths, mixed methods research in educational policy faces challenges such as the complexity of integrating datasets and the potential for methodological inconsistencies. Ensuring

coherence between qualitative and quantitative findings requires rigorous design and clear analytical frameworks.

Community-Based Research

Participatory methods in community-based research empower marginalized groups to actively contribute to data collection and analysis, fostering culturally relevant and actionable outcomes [2]. For example, a participatory study on maternal health in rural sub-Saharan Africa engaged local women to identify barriers to accessing prenatal care. Through focus groups and collaborative data analysis, participants highlighted issues such as transportation difficulties and lack of female healthcare providers. These findings informed the development of community-driven solutions, including mobile health clinics and training programs for local midwives [11]. While participatory methods enhance the relevance and sustainability of interventions, they require significant time and effort to build trust and ensure equitable participation. Additionally, power dynamics between researchers and community members must be carefully managed to avoid tokenism and ensure genuine collaboration.

Conclusion

Our critique underscores a need to reframe qualitative research not just as a tool for storytelling but as a dynamic method capable of informing policy, enhancing systems, and predicting trends.

Qualitative research methods have historically prioritised narrative fidelity, offering invaluable insights into human experiences. However, as this critique demonstrates, their potential extends far beyond traditional boundaries. By embracing innovation, qualitative research can evolve into a transformative tool that not only captures lived experiences but also informs actionable insights, shapes systems, and bridges the gap between qualitative and quantitative paradigms. Future research should prioritize methodological experimentation and interdisciplinary collaboration, ensuring that qualitative methods remain at the forefront of scientific inquiry.

Authors' contributions: GD developed the ELEMI program which includes a cross-cutting theme on innovative methodology development for Women's Health. GD conceptualised the methodology. First draft was written by GD and ES and furthered by all other authors. GD completed data collection. VP, TM, BM, DI, HC, EI, LE, KP, HFK, OK, PP, GE, MH and NR critically appraised, reviewed and commented on all versions of the manuscript. All authors read and approved the final manuscript.

Funding: Not applicable

Ethics approval and consent to participate: Not applicable

Consent for publication: All authors consented to publish this manuscript

Availability of data and materials: The data shared within this manuscript is publicly available.

Acknowledgements: Not applicable

Competing interests: All authors report no conflict of interest. The views expressed are those of the authors and not necessarily those of the NHS, the National Institute for Health Research, the Department of Health and Social Care or the Academic institutions.

Abbreviations

NLP - Natural Language Processing

PMDD - Premenstrual Dysphoric Disorder

PAR - Participatory Action Research

GDPR - General Data Protection Regulation

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