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Perspective Article

Addressing the Gaps in Mixed Research Methods in Rwanda: A Critical Perspective

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Abstract

Abstract

Mixed Research Methods (MRM), which combine both qualitative and quantitative techniques, present an effective approach for tackling intricate research inquiries. However, despite their widespread use, MRM continues to face numerous challenges that hinder the overall quality and reliability of research. This article thoroughly examines several critical issues in MRM, including difficulties in merging data, lack of clear methodological processes, researcher bias, and the scarcity of interdisciplinary expertise. Through a combination of literature review and fieldwork experience from health sciences, education, and public health research conducted in Rwanda, we propose practical strategies to bridge these challenges. We emphasize the importance of refining methodological frameworks, increasing training, fostering researcher reflexivity, and establishing clearer ethical protocols to enhance MRM in future research endeavors.

Keywords (MeSH terms): Gaps; Challenges; Mixed; Research; Methods

Introduction

Mixed Research Methods (MRM) have become a pivotal tool in academic research by enabling the integration of both qualitative and quantitative approaches (Creswell & Plano Clark, 2021). This hybrid method allows researchers to gain a more comprehensive understanding of complex issues by combining measurable trends with rich, contextual insights (Creswell & Plano Clark, 2021). However, despite its promise, there are several ongoing gaps in MRM practices, which limit its full potential. Key challenges include issues with data integration,

methodological transparency, researcher bias, and insufficient interdisciplinary knowledge (Teddlie & Tashakkori, 2022). This article addresses these issues, drawing from relevant literature and examples based on recent fieldwork experiences in Rwanda's healthcare, education, and public health sectors. These examples highlight the practical challenges faced during mixed-methods research, particularly in settings where methodological rigor and interdisciplinary collaboration are often lacking (Bazeley, 2020). We aim to propose solutions for these gaps and improve the effectiveness of mixed-methods research, emphasizing the need for stronger frameworks, better training for researchers, and clearer ethical guidelines (Johnson & Onwuegbuzie, 2020).

Research Methods

The analysis in this article is based on a thorough review of relevant literature, combined with thematic analysis drawn from real-world field experiences. The sources used for this review were extracted from reputable academic databases like PubMed, JSTOR, and Google Scholar, focusing on studies utilizing mixed methods in healthcare, education, social sciences, and public health. Fieldwork experiences from research conducted in Rwanda, such as assessments of healthcare service delivery, evaluations of community-based education, and malaria prevention initiatives in Gicumbi District and Kigali City, provide additional insight into the practical challenges faced in mixed-methods studies.

1. Challenges in Data Integration

Identified Issue: One of the most significant obstacles in MRM is effectively integrating quantitative and qualitative data. Often, researchers present these two data types separately, rather than synthesizing them into a cohesive analysis (Johnson & Onwuegbuzie, 2020).

Fieldwork Experience: During a malaria prevention study in Gicumbi District, our survey results indicated that 85% of households used mosquito nets. However, in-depth interviews revealed that the use of nets was inconsistent, with many participants repurposing them for fishing or crop protection. Initially, this discrepancy was overlooked, leading to a false impression of high compliance rates.

Bridging the Gap: To overcome this, it is essential for researchers to adopt iterative integration techniques, where both data types inform and refine one another throughout the research process (Creswell & Plano Clark, 2021). Employing advanced tools like joint displays, matrices, and mixed-methods software can facilitate more comprehensive data synthesis.

2. Lack of Methodological Transparency

Identified Issue: Many mixed-methods studies fail to clearly outline how their methods are selected, linked, and integrated, which can limit their replicability and understanding (Teddlie & Tashakkori, 2022).

Fieldwork Experience: In a 2022 study of adolescent sexual health education in Gatsibo District, we neglected to clarify the rationale behind the sequencing of focus group discussions after survey administration. This lack of clarity was flagged by reviewers and posed challenges in understanding the study's design and replicability.

Bridging the Gap: To improve transparency, it is crucial for researchers to follow specific reporting guidelines like CONSORT-M (Consolidated Standards of Reporting Trials - Mixed Methods). This includes providing clear explanations for methodological choices and how they are integrated, ensuring that the research can be effectively replicated.

3. Viewing Mixed Methods as an Integrated Approach

Identified Issue: Many researchers treat MRM as simply combining two separate methods, instead of adopting it as an integrated research approach (Creswell & Clark, 2017).

Fieldwork Experience: In a study on health service satisfaction conducted at a hospital in Kigali, our team initially analyzed survey responses separately from qualitative interviews. When the data were eventually combined, it became clear that high satisfaction scores in the surveys were masking significant complaints about long waiting times, which had been revealed in the interviews.

Bridging the Gap: MRM should be regarded as a unified methodology, not just a combination of two approaches. It is important that training programs and academic literature emphasize the interconnectedness of qualitative and quantitative data, enabling researchers to synthesize findings more effectively.

4. Addressing Researcher Bias and the Need for Reflexivity

Identified Issue: Researchers may develop a bias toward either quantitative or qualitative methods, leading to skewed results. A lack of reflexivity only exacerbates this issue (Maxwell, 2020).

Fieldwork Experience: In a study on maternal health services, our team, primarily trained in quantitative methods, initially downplayed qualitative responses indicating dissatisfaction with services. Reflexive discussions helped us recognize our bias and led to a more balanced interpretation of the data.

Bridging the Gap: Incorporating reflexivity practices such as maintaining field journals, conducting bias audits, and engaging in peer debriefings is crucial for reducing bias and enhancing the credibility of mixed-methods findings.

5. Limitations in Researchers' Skill Sets

Identified Issue: A common obstacle in mixed-methods research (MRM) is that many researchers are specialized in either quantitative or qualitative research, but lack expertise in both. This disparity limits the effectiveness of mixed-methods studies, as the integration of both approaches requires a distinct set of skills that researchers often do not possess. When researchers are trained primarily in one method, they may find it challenging to apply the other approach in ways that complement the primary method. This lack of dual expertise can undermine the comprehensive nature of the research, potentially leading to a study that is either skewed toward one method or fails to integrate data effectively (Bazeley, 2020). As a result, essential information may be overlooked or poorly analyzed, limiting the research's overall impact.

Fieldwork Experience: This issue became apparent during a 2023 evaluation of a health worker training program in rural Rwanda. The study involved both quantitative surveys and qualitative focus group discussions (FGDs) to assess the program's success. While the survey instrument was designed to gather numerical data on the effectiveness of the training, the qualitative component was more challenging. The team, with a strong background in quantitative research, struggled to design effective focus group guides that could encourage open-ended discussions and yield in-depth insights into the participants' experiences. Without the necessary qualitative skills, the team initially faced difficulties in crafting questions that would elicit meaningful and detailed responses, which led to concerns about the quality of the qualitative data. Recognizing the limitations in qualitative expertise, the team consulted with experts in qualitative research, who helped refine the focus group guides and provided training on conducting effective FGDs. This collaboration significantly enhanced the study design, ensuring that the qualitative data would provide valuable context to the quantitative findings. With the guidance of the qualitative experts, the focus group guides were revised to include open-ended questions that encouraged participants to share their perspectives in greater detail. Additionally, the team received training on moderating group discussions to ensure the conversations were productive and revealing. As a result, the qualitative component was able to complement the quantitative data, providing a fuller picture of the training program's effectiveness and identifying contextual factors that might not have been captured through surveys alone.

Bridging the Gap: To address the gap in skill sets, researchers must receive comprehensive training that includes both quantitative and qualitative methodologies. This balanced approach can be achieved by integrating mixed-methods courses into research programs and curricula. Such courses should focus on the practical aspects of using both methods and emphasize how they can be seamlessly integrated within a single research design. In particular, training should teach researchers how to design studies that effectively combine both data types to offer a richer and more nuanced analysis.

Collaboration across disciplines is another important strategy for addressing skill set limitations. Researchers who specialize in one method can work with colleagues who are experts in the other. Through collaboration, both researchers can bring their strengths to the project, ensuring the study is well-rounded and methodologically sound. For example, a researcher with a background in quantitative analysis could collaborate with a qualitative expert to design and carry out a study that fully integrates both methods. This partnership allows for the exchange of knowledge and skills, strengthening the study's overall design and execution. Additionally, researchers should be encouraged to engage in fieldwork that incorporates both qualitative and quantitative techniques. This hands-on experience provides an opportunity to practice and refine mixed-methods skills in real-world settings, making it easier to integrate both data types during a study. By learning from the challenges encountered during fieldwork, researchers can gain a deeper understanding of how to balance and combine the two approaches effectively.

Finally, it is essential to promote ongoing learning in mixed-methods research. Researchers should be encouraged to stay informed about the latest trends and developments in both qualitative and quantitative methodologies. Workshops, seminars, and professional development opportunities should focus on the integration of these approaches, ensuring that researchers remain adaptable and proficient in using both methods. Continuous professional growth will help researchers refine their skills and keep their studies relevant and rigorous. In summary, overcoming the gap in researchers' skill sets is critical to improving the quality of mixed-methods research. Providing balanced, integrative training, fostering interdisciplinary collaborations, and encouraging field-based experience will help researchers develop the necessary expertise to conduct high-quality studies that fully utilize both qualitative and quantitative approaches. These strategies will enhance the depth and breadth of research, ultimately leading to more comprehensive and insightful findings.

6. Ethical Issues in MRM

Identified Issue: Mixed-methods research (MRM) introduces distinct ethical dilemmas, particularly when gathering both qualitative and quantitative data. The necessity of obtaining separate consents for these different data types can lead to participant confusion, especially if the purpose and processes are not clearly articulated.

Ensuring that participants understand their involvement and the rights they hold throughout the research process is crucial to upholding ethical standards.

Fieldwork Experience: In a 2023 evaluation of a community nutrition initiative, we encountered a situation where participants were unclear about the necessity of signing separate consent forms for surveys and interviews. This lack of clarity initially caused confusion among the participants, prompting us to reassess our consent procedures. As a result, we revised our consent protocols to provide detailed, understandable explanations that made the process more transparent and ensured that participants were fully aware of the different phases of data collection.

*Bridging the Gap***:** To address these challenges, it is important to create specific ethical guidelines tailored for MRM. These should focus on ensuring transparency during the consent process, helping participants fully understand the scope of their participation. Additionally, these guidelines should emphasize the importance of maintaining participants' autonomy, making it clear that they have the right to ask questions or withdraw from the study at any point without facing any repercussions.

Conclusion

Mixed Research Methods offer a promising approach to tackling complex research questions. However, realizing their full potential requires addressing significant gaps related to data integration, methodological transparency, researcher bias, and ethical challenges. By refining methodological frameworks, providing comprehensive training, promoting reflexivity, and enhancing ethical guidelines, mixed-methods research can evolve into a more coherent and effective methodology. This will contribute to producing more credible, impactful, and transformative research outcomes.

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