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Real ethics has dirty feet – data collector perspectives on risk exposure during data collection in conflict-affected Eastern DRC

Stefan Jansen[1], Japhet Niyonsenga[1,2,3*], Epaphrodite Nsabimana[1], Mediatrice Kagaba[4], Eugene Rutembesa[1,2], Henny Slegh[6], Bonaventure Mihigo[1,5] and Jean Mutabaruka[1,2]

Abstract

Background Conducting research in humanitarian crisis settings poses multiple logistical and ethical challenges. We studied a community-based intervention called 'Living Peace Initiative', collecting household-based data in conflict-affected Eastern DRC, inevitably exposing data collectors and trial participants to risk.

Objective This study explores the perceptions of local study implementers on the ethics of collecting data in a humanitarian crisis setting.

Methods We used a grounded theory qualitative research Approach. Structured individual interviews were conducted with data collectors ($n = 19$) and local data supervisors ($n = 7$). Interviews were audiotaped, transcribed and analyzed using thematic analysis, combining deductive and inductive coding. The analysis was structured around six predefined themes drawn from prior literature, field experiences, and discussions with research team members: motivation, personal safety, trial participant safety, accessibility and working conditions, emotional challenges, and field navigation.

Results Several subthemes emerged. Motivation was reflected in scientific curiosity, professional growth, financial benefits, among others. Personal safety concerns included exposure to armed groups, road inaccessibility, harassment, and illness. Trial participant safety risks included armed conflict, IPV, stigma among others. Accessibility and working conditions were affected by harsh weather, poor infrastructure, network issues, and others. Emotional challenges included exposure to distressing narratives and secondary trauma. Field navigation strategies involved teamwork, and adaptation to local norms. Despite these challenges, data collectors and local data supervisors expressed that the risks were justified and worth taking.

Conclusion Even when fully implementing international ethical guidelines, some risks in humanitarian crisis settings cannot be entirely foreseen or avoided. Local data supervisors and data collectors recognize these risks and take partial ownership in managing them as active agents and contributors to the research. In this sense, real ethics has dirty feet: Data collection in such settings cannot be entirely risk-free; but it still might be important to do the research. The decision to accept such risks however should not solely be made by external researchers who

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*Correspondence:
Japhet Niyonsenga
niyonsengajaphet74@gmail.com

Full list of author information is available at the end of the article

follow international ethical guidelines. It should also be informed by the local data collectors and supervisors who understand the risks within context and culture; and include their judgment on whether the research effort is worth doing.

Keywords Ethical reflections, Data collectors, Emotional risk, Safety, Field navigation, Motivations

Introduction

Conducting health research in humanitarian response is complex, presenting both logistical and ethical challenges [10, 31]. At the same time, it remains imperative to ensure that humanitarian action is evidence-based, impactful and lay the foundation for post-crisis health planning and rehabilitation [2, 7, 12, 25]. Alarmingly, in 2021, 235 million people, corresponding to 1 in 33 people globally, were estimated to need humanitarian assistance and protection. By 2025, this figure was expected to rise to nearly 305 million, including 190 million facing life-threatening needs [33]. This marks a significant increase from 2020, when 1 in 45 people, already the highest figure of the century, required assistance [34]. Estimates indicate that more than 200 million people required humanitarian assistance by 2022 [34]. The situation is likely to worsen unless significant interventions address the root causes of conflict, including climate change [34].

Although the number of studies conducted on humanitarian crises such as armed conflict, forced displacement, natural disasters, and significant disease outbreaks has increased, the quantity and quality of studies is still insufficient [2, 12]. Concurrently, demands for greater accountability [2, 7] and concerns about ethical breaches in the research process are being highlighted [28, 29]. Research ethics deals with these issues by developing guidelines that provide ways of thinking through "ethical dilemmas", thus allowing researchers to safeguard the rights and well-being of research participants and the broader community [10, 31]. However, ethical issues in humanitarian crisis research are complex and, in some situations, ethical guidelines can appear prohibitive [2, 12, 28, 29]; so, there is a continued need to better understand the conditions under which such research can and should be performed.

The ongoing conflict in the Democratic Republic of Congo (DRC) stands as one of the most violent and deadly crises in recent decades. Since 1998, it is estimated that more than six million people have lost their lives due to conflict-related causes [19]. Conducting research in this volatile setting necessitates that researchers and data collectors navigate significant risks to ensure their safety while managing the emotions toll of their work. In his study conducted in the war-torn region of Northern Uganda, Ogora detailed the physical danger encountered and the profound challenges of interviewing traumatized victims and witnesses of severe atrocities [20]. These intense emotional experiences can adversely affect the data collectors, potentially leading to secondary trauma. Thomson and his colleagues emphasize the importance of acknowledging personal emotions and prioritizing the safety of both data collectors and participants [31]. Additionally, the accessibility to the trial participants and effectively navigating conflict zones present further obstacles. Vorrath [35] reported difficulties in reaching respondents during her research on political conflicts in Burundi, particularly during interviews with political elites. Often, collaborating with aid agencies already established in the area becomes the most practical and secure method to access active conflict zones, facilitating field navigation.

Study rationale

We conducted a Randomized Controlled Trial study in Eastern DRC from 2018 to 2020, evaluating the Living Peace Initiative, a community-based intervention aimed at reducing Intimate Partner Violence (IPV) by working with men perceived to be violent by their communities through positive masculinity approaches [16, 30]. The study, funded by Enhancing Learning and Research for Humanitarian Assistance [11], involved three rounds of structured surveys with 3600 trial participants per round (1800 women and 1800 men) across sixty villages in the North and South Kivu provinces [16].

Conducting research in such an unstable environment posed significant ethical and logistical challenges, particularly as rebel activities, an Ebola outbreak, and the COVID-19 pandemic impacted data collection. These circumstances raised concerns about the safety of data collectors and trial participants, necessitating ongoing ethical reflections. Could we ensure their safety? How could we intervene if the situation gets out of control? We made the case to the funder and ethical approval was obtained from IRB committees in Rwanda and the DRC after demonstrating our ability to implement the study in line with ethical guidelines. Additionally, we adhered to Erha's ethical guidelines to protect participants' rights, interests, and dignity of the participants were respected throughout the study [11].

Before the study implementation, all data collectors underwent comprehensive training on standard Operating Procedures (SOPs) and security protocols which were established to guide data collection in high-risk settings for safety concerns. These SOPs included security briefings and risk assessment training, instructions on personal safety precautions, and protocols for handling sensitive topics such as IPV and suicidal ideation. The study team also developed referral pathways for participants at risk of harm, working in collaboration with trial group facilitators who provided immediate support, while local researchers later followed up and offered additional support. Additionally, emergency response protocols were put in place for handling security threats, including evacuation procedures and designated communication channels for reporting incidents.

Also, after being awarded the grant, our research team engaged in extensive ethical discussions within the research team and with the implementing partners including Institut Supérieur du Lac (ISL) and the Living Peace Institution to assess feasibility. A major ethical concern was that data collectors would interact with rebel groups and interview women in violent households, potentially increasing risks even under strict confidentiality protocols. The local implementing organizations and the Rwandan research team determined that the study was both valuable and possible. Drawing parallels to war journalism, the team argued that while some risks were unavoidable, the study's contribution to understanding IPV in conflict zones justified these risks [18]. The findings aimed to provide critical insights for policymakers and organizations working to reduce IPV in Eastern DRC [39].

Although the data collectors were all residents of North and South Kivu, and therefore familiar with the broader security context, this did not imply that they were fully accustomed to the specific risks they encountered during data collection. Many had never faced direct interactions with armed groups, roadblock extortion, or threats while conducting research. When we started implementing the study and training our data collectors, we discussed foreseeable risks, mitigation strategies, and whether they found these risks acceptable. All data collectors decided to be part of the team; nobody stepped out. The process proved difficult, with data collectors facing harassment at roadblocks, harsh living conditions, and suspicion from community members. Additionally, exposure to trial participants' traumatic stories including IPV and suicide ideation, heightened their risk of vicarious traumatization [4].

This 'ethical reflection study' examines the experiences and perceptions of data collectors and the data collection supervision team after the data collectors had been exposed to different risks during field activities. It explores the risks they faced, their views on whether the data collection was worth doing, whether the risks were worth taking; and whether they felt adequately supported by the research team and the Living Peace Initiative. Specifically, it addresses motivations, personal and trial participants' safety, emotional challenges, accessibility, and field navigation in the Eastern DRC. Additionally, it reflects on the broader ethical implications of data collection in crisis settings, where the experiences of over 235 million people in need of humanitarian assistance remain understudied [34].

Methods

Study design

This study applied an explorative qualitative research design using a structured individual interview guide (SIIG), [32]. This study selected SIIG for the data collection process because it can help people explore and clarify ideas in ways that could be more difficult to access in focus group discussions.

Study setting and participants

This study targets 19 data collectors and 7 data supervisors (Mean age = 37.68, SD = 5.88) who had participated in the aforementioned Randomized Control study conducted by the University of Rwanda in collaboration with the Living Peace Institute. The study took place in Goma, North Kivu province, Eastern DRC.

Procedures

We obtained ethical clearance from the University of Rwanda - College of Medicine and Health Sciences Institutional Review Board (No 157/CMHS IRB/2019); and from Commission d'éthique de l'Institut Supérieur du Lac à Goma (No 059/ISL/PCE/MB/2018). The study design and protocol complied with the ethical principles outlined in the Declaration of Helsinki [27].

After obtaining informed consent, moderators distributed a structured interview guide with 14 open questions to the data collectors ($n = 19$); and similar set of questions to the data supervisors ($n = 7$). Given the logistical challenges and the sensitive nature of the topics discussed, we opted for peer-to-peer interviews where data collectors interviewed each other in pairs [22]. This approach leveraged their familiarity with the study context, fostered open discussions, and ensured a level of confidentiality that external interviewers might not have provided. Data collectors had been trained in research ethics and qualitative interviewing techniques, ensuring consistency and adherence to ethical guidelines.

While data collectors were instructed to adhere to the structured interview guide and avoid leading questions, probing and follow-up questions were permitted to ensure clarity and depth in responses. The researcher team was present during interviews to monitor adherence to the protocol, provide clarifications and ensure consistency in data collection process. Additionally, external researchers helped maintain objectivity and mitigated limitations of peer-to-peer interviewing, such as unclear responses and off-topic discussions, while preserving its benefits, including rapport-building and open discussions [22]. Afterwards, the Rwandan researchers conducted seven individual interviews with the data supervisors to capture their perspectives independently.

Data collection tools

Sociodemographic characteristics

This interview section was designed to collect participants' sociodemographic characteristics such as age, education level, residence, marital status, number of participations in studies conducted in humanitarian crises and number of family members.

Semi-structured interview guide

Based on the theoretical framework developed for this study and grounded in prior literature, field experiences, and discussions with research team members, the authors predefined six key themes to structure the interview questions: motivation, personal safety, trial participant safety, accessibility and working conditions, emotional challenges, and field navigation. These themes were selected as they reflect core challenges commonly encountered in research conducted in humanitarian crisis settings [2, 12, 28, 29]. A set of structured questions was developed to cover all themes questions to cover all themes (Table 1) and was used to interview the data collectors. An adapted version of the questionnaire was used for the data supervisors, focusing on their perspectives on the experiences of the data collectors.

Data analysis

All sessions were recorded, transcribed verbatim and analyzed using a thematic analysis approach combining both inductive and deductive coding [3]. To enhance validity and minimize researcher bias, two independent research teams analyzed the transcripts separately—one using NVivo 12 (www.qsrinternational.com), and the other employing a manual pen-and-paper method. Both teams followed the same process, applying deductive coding based on predefined themes drawn from prior literature, field experiences, and research team discussions, while also using inductive coding to identify subthemes emerging from participant narratives.

After independent coding was completed, findings were compared, discrepancies were discussed, and consensus was reached to refine the final coding framework. For each theme, superordinate and subordinate themes were identified, and coded transcript extracts were systematically organized in NVivo. As analysis progressed, transcripts were re-examined to ensure accurate theme representation, and any individually coded items not relevant were removed. Towards the end of the process, no new themes or subthemes emerged, indicating data saturation.

Finally, all authors reviewed the coded transcripts, discussed remaining discrepancies, and finalized the coding framework. Furthermore, discrepancies between the two methods were revised, and areas were reconsidered until consensus was achieved. Any subtheme reported only once (1/26) was removed from the results. To maintain coherence with the study's focus, we present numerous verbatim quotes related to ethical reflections and fewer for the six predefined themes.

Results

Demographics

Interviews ($N = 26$) with data collectors (DCs, $n = 19$), and data supervisors ($n = 7$) lasted between 25 and 50 min. Nine out of 19 DCs were females, and all KIs (data supervisors) were male (Table 2). The data analysis confirmed the six hypothesized themes around risk exposures and an additional theme on the ethics of data collection. (1) Motivation of the data collectors, (2) personal safety, (3) trial participants safety, (4) emotional challenge, (5) accessibility, (6) field navigation and (7) ethical reflection.

Table 1 Structured interview guide

Themes	Research questions
1. Motivations	1. What were your motivations for participating in the data collection?
2. Personal safety	2. For you personally, what were the largest risks and dangers you encountered during data collection? 3. To what extent were you concerned about your safety, given the different risks in the field? 4. Did you meet any challenges during data collection because you are a man or a woman?
3. Trial participant Safety	5. What were the main risks and dangers for the trial participants?
4.Accessibility/work conditions	6. What were the main difficulties you met during data collection?
5. Navigation	7. What decisions did you make to better navigate the field? 8. Did you encounter situations that you were unable to manage or were very difficult to manage? 9. How was the reality of data collection different from how you imagined it to be?
6. Emotional challenges	10. For you personally, did the data collection affect you emotionally? How?
7. Ethical reflections	11. Did you sometimes feel that the amount of risk you took was worth taking and why? 12. In your moral judgement, was doing this data collection the right or the wrong thing to do? And why? 13. What are the advantages/disadvantages of being a local research team? 14. What would you recommend doing differently if returned to the field? (Looking at the importance of good logistics and finance management to avoid friction or hurdles).

Table 2 Sample demographic characteristics

Name	Frequency	Percentage
1. Age categories		
28–33 years	7	26.9%
34–39 years	10	38.5%
40–44 years	4	15.4%
45–49 years	4	15.4%
68 years	1	3.8%
2. Marital status		
Single	7	26.9%
Married	19	73.1%
3. Education level		
Bachelors' degree	23	88.5%
Master's degree	1	3.8%
PhD holder	2	7.7%
4. Number of children		0.0%
No child	7	26.9%
1–2 Children	6	23.1%
3–4 Children	6	23.1%
5–6 Children	4	15.4%
9–10 Children	3	11.5%
5. Number of times worked in data collection in a conflict setting		
1–2	5	19.2%
3–4	14	53.8%
5–7	4	15.4%
9	2	7.7%
13	1	3.8%

Motivation of data collectors

Data collectors and data supervisors cited a variety of motivations for participating in the study [Table 3]. The most frequently reported motivator was scientific curiosity which included a strong interest in the intervention itself, the desire to evaluate Living Peace activities, the drive to explore field realities, and a thirst for deeper knowledge about living peace initiative. Data collector (DC) 4 reflected this sentiment:

> *"My love for research and scientific curiosity drove me to participate. When I saw the call for recruitment to evaluate the impact of the Living Peace approach on promoting positive masculinity, I was immediately drawn to the topic. Of course, financial motivation also played a role, but my main drive was the curiosity and interest in understanding how this intervention works."*

Additionally, professional experience enhancement emerged as another significant motivator. This encompassed the experience of being part of a collaborative team, learning opportunities, the chance to take on leadership roles, and the novelty of the study. Data supervisors (**KI**) **2**, for example, emphasized the blend of professional growth and commitment to the study's subject matter:

> *"I wore two hats—one as a Living Peace member and the other as someone passionate about research. From the beginning, I was involved in identifying researchers. Some saw it as an opportunity to get a job, while others were genuinely motivated by the subject of gender and positive masculinity. They realized that their research could contribute to lasting solutions, even though financial incentives initially motivated most of them."*

Personal interest was also recurring theme, particularly in terms of financial benefits, building on previous experience, and a general enthusiasm for participating in research. Several data collectors and

Table 3 Frequency of motivations for data collectors

The motivation of data collectors		Subcategories
Category	**Subcategory**	**Frequency**
Scientific curiosity	A strong interest in the intervention itself	10/26 (9DC + 1KI)
	The desire to evaluate Living Peace activities	8/26 (6DC + 2KI)
	The drive to explore field realities	6/26 (5DC + 1KI)
	Thirsty for deeper knowledge about Living Peace initiative	2/26 (2DC)
The opportunity to enhance their professional experience	The experience of being part of a collaborative team	5/26 (2DC + 3KI)
	The novelty of the study	4/26 (4DC)
	Learning opportunities	3/26 (3DC)
	The chance to take on responsibilities as team leaders.	2/26 (1DC + 1KI)
Personal interest	Financial benefits	8/26 (6DC + 2KI)
	Building on previous experience	5/26 (3DC + 2KI)
	A general enthusiasm for participating in research.	2/26 (2DC)
Willingness to help	Drive to complete research tasks	5/26 (4DC + 1KI)
	Support trial participants	5/26 (2DC + 3KI)
	Raise awareness within community	2/26 (2DC)

Note: DC: data collector/s; KI: data supervisor/s supervisors mentioned that the financial compensation provided them with a strong incentive to engage in the study while also emphasizing the intrinsic satisfaction of contributing to research with social impact.

Personal safety

All data collectors and supervisors identified significant risks and dangers associated with their personal safety during data collection [Table 4]. The most frequently reported risks included insecurity due to armed groups, road inaccessibility, harassment for money, fear of death or injury, illness, getting sick, fear of robbers, poor food quality, financial extortion at roadblock, and the risk of fire outbreaks. **DC 7** recounted an experience that encapsulates these dangers:

> *"There were life-threatening risks. We encountered roadblocks set up by bandits and government soldiers who demanded money to let us pass. Additionally, we had to travel to remote areas where some people were aggressive and refused to cooperate unless we paid them. Bad weather was another challenge—we often rode motorcycles for long distances in harsh conditions."*

Similarly, **KI 6** detailed the overarching risks faced across the study's 60 villages, emphasizing the challenges of navigating conflict zones:

> *"The greatest danger was insecurity due to ongoing armed violence in nearly 60 villages. There was always a fear of being harmed. The poor road conditions also posed risks, especially during the rainy season. Some researchers had to walk for long hours or ride motorcycles for 5–6 hours to reach their destinations. In one case, a researcher resigned due to these extreme conditions."*

To mitigate these risks, data collectors and supervisors employed various coping strategies to enhance their personal security. These included taking precautions (such as seeking security information, traveling with facilitators, making frequent phone calls, hiding tablets, carrying medications, staying in hotels), adhering to ethical principles, teamwork and collaboration, and frequent relocations in response to security threats. Additional strategies included praying, dressing inconspicuously to blend in (adjusting clothing and walking instead of using vehicles) and seeking local security advice. As DC 9 explained:

> *"To ensure my safety in the field, I strictly followed ethical principles, such as obtaining informed consent, maintaining confidentiality, and avoiding anything that would make me stand out. For instance, I chose not to wear a vest that could make me easily recognizable in the community."*

Additionally, nearly one-fourth of participants reported gender-specific challenges, primarily related to sexual

Table 4 Frequency of largest risks and dangers, coping strategies to improve personal security, and gender-specific challenges and mobility in the field

Personal safety

Category	Subcategories	Frequency
The largest risks and dangers encountered		
	Insecurity due to armed groups	15/26 (10DC + 5KI)
	Road inaccessibility and accidents	7/26 (5DC + 2KI)
	Harassment for money	6/26 (2DC + 4KI)
	Illness	5/26 (4DC + 1KI)
	Fear of injured or death	5/26 (2DC + 3KI)
	Fear of robbers	4/26 (2DC + 2KI)
	Poor food quality	4/26 (3DC + 1KI)
	Roadblocks	3/26 (2DC + 1KI)
Coping strategies to improve personal security		
	Taking precaution	11/26 (9DC + 2KI)
	Adhering to ethical principles	4/26 (3DC + 1KI)
	Frequent relocations in response to insecurity.	2/26 (2KI)
	Blending in with the community	2/26 (2DC)
	Praying	2/26 (1DC + 1KI)
	Team working and collaboration in the field	2/26 (1DC + 1KI)
Gender-specific challenges and mobility in the field		
	Mobility challenges in mountainous terrain	3/26 (3KI, Male)
	Exposure to sexual harassment.	2/26 (DC f, + KI m)

Note: DC: data collector/s; KI: data supervisor/s; m: males; f: females

Table 5 Frequency of risks for trial participant

Participants safety		
Category	**Subcategories**	**Frequency**
Security risks	Armed groups or robbers attack	3/26 (DC + 2KI)
	Partner Violence	2/26 (DC + KI)
Social risks		
	Breaches of confidentiality or risks of being prejudged	3/26 (2DC + KI)
	Community discrimination	2/26 (1DC + 1KI)

Note: DC: data collector/s; KI: data supervisor/s

harassment and mobility challenges in mountainous areas. Female data collectors shared experiences of harassment from men in the field, as highlighted by DC 8:

> *"Yes, being a woman presented challenges. Some men found us attractive and tried to harass us, but we managed to handle the situation."*

In contrast, male supervisors reported that some female data collectors faced difficulties navigating the mountainous terrain, which required adjustments in attire and mobility support. KI 1 described these observations:

> *"As a male researcher, I didn't face significant challenges in coordination. However, for female data collectors, some struggled with walking long distances in the mountains. They had to use walking sticks, wear boots, and abandon skirts for more practical attire."*

These accounts suggest that mobility challenges were identified by male supervisors rather than female data collectors themselves, indicating an external perception rather than self-reported difficulties. The findings highlight the importance of gender-sensitive fieldwork preparations, including ensuring that both male and female researchers have adequate equipment and preparation for the physical demands of the data collection process.

Trial participants' safety

In terms of participants safety, risks for trial participants included security threats from armed groups, exposure to partner violence, and social risks such as stigmatization and breaches of confidentiality. [Table 5]. **DC 1** shared their concerns:

> *"Despite obtaining consent, some participants were hesitant. They feared we might use their information against them. Some even accused us of planning to harm them through the research process."*

Table 6 Frequency of main difficulties encountered during data collection

Accessibility/work conditions		
Category	**Subcategories**	**Frequency**
Principle difficulties encountered		
	Harsh weather conditions	14/26 (9DC + 5KI)
	Insecurity	10/26 (5DC + 5KI)
	Poor network connection	8/26 (6DC + 2KI)
	Trial participants' refusals	8/26 (7DC + 1KI)
	Lack of accommodation and restaurant.	5/26 (4DC + 1KI)
	Difficulty locating trial participants	4/26 (3DC + 1KI)
	Lack of electric power	3/26 (1DC + 2KI)
	Language barriers	2/26 (1DC + 1KI)

Note: DC: data collector/s; KI: data supervisor/s

Additionally, some participants expressed distrust towards digital data collection tools, as noted by KI 1:

> *"Participants unfamiliar with technology were suspicious of tablets, seeing them as foreign objects. Some believed that those who participated were given money, leading to resentment from others. Others feared that we would expose their personal information."*

These responses underscore the importance of transparency and trust-building measures to ensure participant cooperation and reduce fears associated with digital data collection methods.

Accessibility/work conditions

Several significant accessibility challenges complicated the data collection process. These included harsh weather conditions, insecurity, lack of basic infrastructure (such as accommodation, restaurants and electric power), poor network connectivity, trial participants' refusals, difficulty locating trial participants and language barriers [Table 6]. **DC 2** highlighted the impact of these barriers:

> *"One of the biggest challenges was the harsh weather—heavy rains made roads impassable. We also lacked reliable internet, and in some areas, there were no markets, hotels, or places to eat. We had to carry our own food and cook for ourselves."*

Beyond weather and infrastructure issues, technical difficulties also hindered the research process. **KI 3** elaborated on the challenge of maintaining digital connectivity in remote areas:

> *"Beyond security issues, the lack of electricity was a major challenge. Although we had planned for alternative power sources, some areas had no access at all. Poor internet connectivity also delayed our data submissions."*

These findings underscore the logistical difficulties faced by data collectors and the necessity of improved field support to ensure smoother data collection.

Field navigation

To overcome fieldwork challenges, data collectors and supervisors employed various navigation strategies. This included fostering collaboration and promoting a strong team spirit among supervision teams, facilitators and data collectors; adapting to the local lifestyle (e.g., seeking help from translators and adjusting clothing styles), following guidance from local leaders; gathering information and seeking accompaniment from trial participants. DC 4 shared how strategic alliances facilitated their work:

> *"We built strong collaborations with local leaders and facilitators. We even consulted pastors and community leaders before entering certain areas. We also relied on motorcycle drivers for local insights."*

However, language barriers posed an additional difficulty in certain villages. KI 3 recounted one particularly complex situation:

> **KI 3:** *"One of our researchers encountered a language barrier in a village. We had to find a local interpreter who not only understood the language but also grasped the research context. It was a difficult but necessary decision."*

Additionally, data collectors and supervisors often faced resistance from local authorities and encountered unrealistic compensation expectations from trial participants, particularly those in polygamous relationships. The expectation for greater compensation appeared to stem from participants' perceptions of the time investment required for the interviews and the logistical challenges of managing multiple household members who wished to participate researchers often faced resistance from local authorities or trial participants. As KI 7 explained:

> *"At times, participants weren't available, and we had to wait or find replacements. In some cases, local authorities resisted the research, forcing us to negotiate and convince them of its importance. Additionally, some participants, particularly those in polygamous relationships, expected greater compensation. For example, when both wives wanted to participate, they anticipated additional financial incentives, which sometimes led to tension and logistical difficulties."*

Nearly all data collectors and supervisors noted a stark contrast between their expectations and the realities of conducting data collection in a humanitarian conflict setting. Many were unprepared for the harsh living conditions including limited access to technology, security concerns, and severe weather. DC 10 reflected on the difficulties faced:

> *"Before, I thought we would have at least some level of comfort, maybe places to stay and eat. But in reality, we had to sleep in extremely difficult conditions, sometimes on the floor, and carry our own food because there were no restaurants. I had not imagined how tough it would be."*

Beyond the physical challenges, many data collectors and supervisors found the work emotionally and psychologically demanding. They were particularly shocked by the high levels of fear among trial participants, the frequent reports of suicidal thoughts, and the extent of domestic violence [Table 7]. DC 6 shared their emotional struggle:

> *"I knew I would hear difficult stories, but I wasn't ready for the level of suffering I encountered. Women talked about being raped multiple times, men described losing everything due to conflict, and there were participants who openly expressed their desire to end their lives. It was overwhelming."*

Additionally, some data collectors expected the research process to be more straightforward, but they encountered significant resistance from both trial participants and local authorities. KI 7 recounted one particularly difficult situation:

> *"I thought once we had approval, things would be easy. But when we arrived in some villages, people refused to talk to us because they were afraid. Others believed we were there to expose them. It took a lot of time and effort just to gain their trust."*

Moreover, data collectors and supervisors were surprised by how hard the job was physically, particularly due to difficult terrain and unpredictable security situations. DC **3** described the demanding nature of the work:

> *"I thought data collection would just involve asking questions and recording responses. But I didn't expect the exhaustion that came with traveling for hours on rough roads, walking long distances in*

Table 7 Frequency of the field navigation decisions taken, difficulties to manage during data collection, and expectations versus the reality of data collection

Navigation		
Category	**Subcategories**	**Frequency**
Field navigation Decision		
	Collaboration and team working spirit	11/26 (7DC + 4KI)
	Adjusting to the local lifestyle	6/26 (4DC + 2KI)
	Following instructions of local leaders	4/26 (3DC + 1KI)
	Seeking information from trial participants	3/26 (3DC)
Difference between Expectations and Reality of data collection		
	Surprised by harsh living conditions	9/26 (5DC + 4KI)
	Surprised by high levels of positive change	6/26 (6DC)
	Surprised by how hard the job was	6/26 (6DC)
	Surprised by trial participants' levels of anxiety	2/26 (2KI)
	Surprised by an elevated rate of suicidal thoughts	2/26 (KI + DC)
	Surprised by high levels of domestic violence	2/26 (DC + KI)
Difficult situations to manage		
	Difficulty locating trial participants	3/26 (3KI)
	Insecurity	3/26 (3KI)
	Language barriers	3/26 (3DC)
	Trial participants' expectations of high compensation	3/26 (3DC)
	Rain	2/26 (2DC)

Note: DC: data collector/s; KI: data supervisor/s

Table 8 Frequency of emotional challenges

Emotional challenges		
Category	**Subcategories**	**Frequency**
Hearing distressing life histories from trial participants		
	Exposure to trial participants' adverse events	12/26(9DC + 3KI)
	Suicidal ideation and attempt shared by participants	5/26 (3DC + 2KI)
Dealing with stress		
	Development of effective coping strategies for traumatic events	4/26 (4DC)
	Overwhelmed by fear or emotional breakdowns.	4/26 (4DC)
Affected by bad life conditions		
	Difficulties with food, sleeping and transport.	3/26 (3DC)
	Harassment, roadblocks, or security-related issues Harassment, roadblocks, and security-related issues	3/26 (2DC + 1KI)

> *unsafe areas, and sometimes even fearing for my own safety.”*

These experiences highlight the discrepancy between expectations and realities, emphasizing the need for better preparation, mental health support, and logistical planning for future research teams.

Emotional challenges for data collectors

All data collectors reported experiencing emotional distress due to exposure to harrowing trial participants testimonies of violence, rape, incest, sexual violence, extreme poverty, and suicidal ideation (Table 8). **DC 6** recounted one particularly distressing case:

> *“Listening to women share their daily struggles—how they were raped, beaten, and humiliated—deeply affected me. One woman told me, ‘I have been raped more than twice. I have never told anyone, not even my husband or family. This is the first time I am speaking about it.’ This was heartbreaking.”*

Similarly, DC 4 described the emotional burden of interviewing individuals contemplating suicide:

> *“Two cases affected me emotionally. In Masisi, one participant openly expressed suicidal thoughts, saying he had already attempted suicide multiple times. I was scared but managed to complete the interview. Later, I reported it to my team leader, and we found a way to support him.”*

Supervisors also noted the heavy emotional toll the research took on their teams. **KI 6** observed:

> *"Hearing about extreme suffering—violence, poverty, suicide—took an emotional toll on our data collectors. Some recorded testimonies from people who had lost the will to live. When we returned for follow-ups, some of the participants had passed away. It was a difficult experience."*

Additionally, the challenging living and working conditions during data collection, including poor accommodation and transportation, further exacerbated the emotional burden. Some data collectors developed adequate coping strategies to manage the stress of these traumatic events. Others however, found it difficult to cope and reported feelings of fear, emotional distress, or even breaking down in tears. These reflections emphasize the importance of emotional support mechanisms for researchers conducting data collection in high-risk, trauma-exposed environments.

Ethical reflections

Perceptions on whether doing data collection was the right thing or wrong thing to do; and whether the risk of data collection was worth taking

Perceptions on whether doing data collection was the right thingorwrong thing to do All data collectors and supervisors unanimously agreed that conducting data collection in humanitarian conflict setting was the right thing to do. No data collector or supervisor perceived it as a mistake. The most frequent reported reasons included understanding the impact of the LPint, facilitating positive changes within community, gaining insights into gender-based violence, and building resilience in challenging environments [Table 9]. Many data collectors and supervisors also highlighted the trial participants' enthusiasm, which reinforced the importance and relevance of the research. **DC 8** emphasized the positive influence of the intervention, not just on direct participants but also on the wider community:

> *"In my opinion, it was beneficial because it brought about the changes, not only for the participants but also for their neighbours. The participants of LPint became role models for others…."*

The study also provided valuable insights into the dynamics of violence within families and how gender attitudes evolved over time. **DC4** explained how the research process deepened their understanding of these issues:

> *"The data collection process helped us to understand how violence manifests within families. It also allowed us to see how the LPint facilitated changes in gender attitudes, contributing to the reduction of violence. Through therapeutic follow-up sessions, we observed participants' progress from negativity to positivity, providing valuable insights into the intervention's impact. Overall, it was an enriching experience."*

Beyond academic and programmatic value, the research allowed for a more targeted and sustainable intervention design. **KI 6** elaborated on how the study helped tailor solutions to community needs:

> *" The data collection process within the living Peace helped us tailor the intervention to the real needs of the community, moving beyond temporary fixes to provide lasting solutions. This research allowed us to better understand and address those needs effectively. In general, it was a positive experience—participants trusted us, shared their stories, and allowed us to capture the essence of their lives…. "K6.*

Table 9 Frequency of ethical reflections (perceptions of whether data collection was the right vs. wrong thing to do)

Ethical reflections		
Category	**Subcategories**	**Frequency**
Doing this study was the right thing to do		
	Understanding the impact of LPint	9/26 (7DC + 2KI)
	Facilitating positive changes within community.	8/26 (6DC + 2KI)
	Gaining insights into the levels of gender-based violence.	3/26 (3DC)
	Fostering the courage to work in challenging environments.	3/26 (DC + KI)
	Witnessing trial participants' enthusiasm toward the project	2/26 (2DC)
Risk worth taking		
	Curiosity about understanding the field realities.	7/26 (5DC + 2KI)
	The necessity of fulfilling the research mission.	4/26 (3DC + KI)
	The desire to learn from LPint impact.	3/26 (3 DC)
	The willingness to contribute to community welfare.	3/26 (2DC + KI)
	The role of research in promoting peacebuilding.	2/26 (2DC)

For many, conducting research in such challenging environments was seen as a personal mission—a test of resilience and a call to action. **DC 1** reflected on the personal growth and lessons learned through this experience:

> *"It was a meaningful experience because it was both a discovery and a mission. In life, you must face challenges head-on. My father always said "Have the courage to act, even if success doesn't come immediately. Keep striving, and eventually, you'll find a way.' This spirit of courage and perseverance guided me throughout the process".*

Perceptions on whether the risks were worth taking While data collectors and supervisors acknowledged the risks associated with working in conflict-affected areas, all agreed that the risks were justified due to the study's critical role in community transformation, knowledge generation, and peacebuilding efforts [Table 9]. DC 11 emphasized the importance of their presence in facilitating change:

> *" The risks were worth it because our presence helped those in need. Without us, some couples wouldn't have discovered the possibility of a peaceful and fulfilling life together. I feel proud knowing we helped them improve their relationships and happiness.".*

Similarly, DC 6 highlighted the empowerment that the research process provided to women:

> *"It was undoubtedly worth it Achieving the research objectives provided a valuable platform for women to exchange their experiences. They frequently reached out to us, eager to engage in meaningful discussions."*

For KI 3, the study was not just about research, but also about fostering peace in a region deeply affected by conflict:

> *"... This research, which integrated intervention and evaluation, was essential to understand the effectiveness of our efforts. In a region like North and South Kivu, where peace is desperately needed, every effort to foster pacification is invaluable, regardless of the risks."*

These reflections underscore the dedication of the researchers and data collectors, reaffirming that despite the challenges, their work was not only necessary but deeply impactful.

Advantages and disadvantages of being local research team

All data collectors and supervisors emphasized the benefits of being part a local research/data collector team in a humanitarian conflict setting. The most reported advantages included the ability to quickly adapt to the context and environment, fostering team cohesion among local researchers, the establishment of trust and rapport with trial participants and cost-effectiveness of the research [Table 10]. **DC 7** emphasized how cultural familiarity facilitated participant engagement:

> *"There were no inconveniences. One advantage is that researchers can easily adapt to the environment. Participants feel comfortable and open up because they see us as one of their own. They confide in in us, especially when it comes to language and cultural the context. ".*

Beyond familiarity, data collectors and supervisors pointed out that local researchers understand the social and linguistic nuances that can enhance data accuracy and reliability. KI 2 explained:

> *"The strengths of being a local researcher include familiarity with the environment's context, lifestyle, culture, behavior, and language. This familiarity builds trust within the community, making data collection more efficient. However, as a downside, the community often expects researchers to provide direct solutions to their problems. "K2.*

Table 10 Ethical reflections (advantages vs. disadvantages of being a local research/data collector team)

Ethical reflections		
Category	**Subcategories**	**Frequency**
Advantages		
	Ability to quickly adapt to the context and environment	13/26 (9DC + 2KI)
	Fostering team cohesion among local researchers	6/26 (5DC + KI)
	The establishment of trust and rapport with trial participants	3/26 (2DC + KI)
	Reduction of research costs	2/26 (DC + KI)
Disadvantages		
	Emotional distress from exposure to trial participants' the problems.	4/26 (2DC + 2KI)
	Unrealistic expectations of material support from trial participants	3/26 (DC + 2KI)
	The guilt from being unable to intervene	2/26 (2DC)

Table 11 Recommendations

Ethical reflections		
Category	**Subcategories**	**Frequency**
Recommendations for participants		
	Establish income-generating activities	5/26 (5DC)
	Reassess and increase compensation fees	5/26 (5DC)
	Provide interventions for control groups.	4/26 (2DC + 1KI)
	Build Capacity for facilitators	3/26 (3DC)
	Offer psychological support for the participants with suicidal thoughts.	2/26 (2DC)
Recommendations for data collectors		
	Ensure access to field vehicles	9/26 (6DC + 3KI)
	Increase daily per diem allowances	7/26 (6DC)
	Strengthen logistical support (e.g., communication tools, accommodations, food, fuel)	6/26 (5DC + KI)
	Provide high-quality rain gear and footwear	5/26 (5DC)
	Budget for expenses related to roadblocks, rebels, and authorities.	5/26 (3DC + 2KI)
	Review and refine Questionnaires	2/26 (2DC)

Despite these advantages, some data collectors and supervisors acknowledged significant challenges associated with being a local research/data collector team. Slightly more than a quarter of these respondents reported emotional distress from exposure to participants' traumatic experiences, risks of kidnapping, the guilt from being unable to intervene, and the unrealistic expectations of material support from the trial participants [Table 10].

One of the most reported challenges was the emotional toll of hearing distressing stories from participants. DC 4, a female data collector, reflected on:

> *The risks we faced included being emotionally affected by the issues on the ground, such as resentment toward men, particularly in rural areas where they are perceived as the cause of suffering for women. There were times when we felt helpless in cases that were beyond our capacity to address, even though many participants hoped we could assist them.*

Additionally, researchers expressed concerns about maintaining professional distance when working with individuals from their own communities. KI 6 *(male)* noted how personal connections could complicate objectivity:

> *Some researchers are deeply affected by the participants' experiences. In rural settings, there's also the risk of encountering someone from their own family or ethnic group, which could evoke strong emotions. Overall, though, the advantages far outweigh the disadvantages.*

Another challenge faced by local researchers was unrealistic expectations from community members, who sometimes assumed they had the power to solve their problems. KI 3 (male) highlighted this issue:

> *". The community often believes that researchers arrive with a full set of solutions to solve their problems, which is a common misconception…."*

Similarly, **P 9** emphasized that these misconceptions could also impact data collection quality:

> *"One drawback is that the community believes researchers come with ready solutions to solve their issues. Another disadvantage is that researchers can sometimes become emotionally involved, which may affect their objectivity when handling sensitive information. This can also lead to data being skewed based on their prior knowledge and expectations of the field ".*

Recommendations

The data collectors and supervisors provided several recommendations to enhance the experience of both the trial participants' and data collectors. These recommendations focused on two main areas: (1) support for trial participants and (2) logistical and operational improvements for data collectors [Table 11].

Recommendations for supporting trial participants To address the economic and psychosocial challenges faced by trial participants, study implementers suggested initiating income-generating activities, revising compensation fees, intervening in control groups, providing capacity building opportunities for trial group facilitators, and offering specific care for participants with suicidal thoughts. **DC 10** emphasized the need for economic empowerment as a sustainable solution:

> *"We need to address participants' suicidal thoughts by offering proper support. Additionally, providing them with the means to rent land for cultivation can improve their livelihoods. Establishing income-generating activities could greatly benefit various households "***DC 10.**

Similarly, data collectors and supervisors highlighted the need for psychosocial interventions to support participants struggling with mental health issues. **DC 16** recounted a distressing case encountered in the field:

> *"I encountered two emotionally distressing cases while working in Village X and Village Y in Masisi, where participants expressed their intent to commit suicide. These experiences deeply affected me, and I felt personally overwhelmed."*

This underscores the urgent need for targeted mental health interventions within such research initiatives.

Recommendations for improving data collection logistics and operations Data collectors faced significant fieldwork challenges, including inadequate transport, difficult terrain, financial constraints, and logistical limitations. Data collectors and supervisors recommended enhanced financial and material support, including provision of sturdy field equipment (raincoats, footwear), increased per diem allowances, and improved access to vehicles for safe transportation. P 2 highlighted the transportation difficulties:

> *"In case we return to this field, I recommend providing at least one Land Cruiser per team. Traveling on impassable roads with a bike is extremely dangerous. The per diem should also be increased to cover the significant expenses we face on the ground, such as transport costs and unreliable internet connections for sending data. Often, we had to use our personal funds to manage these challenges. ".*

Beyond transportation and allowances, data collectors and supervisors emphasized the importance of securing cooperation from local authorities to ease bureaucratic challenges and clearance procedures. KI 4 explained:

> *Improving research conditions is essential. For instance, ensuring reliable transport for data collectors is a priority. Moreover, we must address challenges like obtaining village clearance, which often requires informal payments. It's crucial to involve provincial-level officers, particularly those responsible for gender issues, in every stage of the research process to ensure their support and guidance.*

Additionally, logistical barriers such as poor communication infrastructure, limited accommodations, and unreliable internet connectivity were identified as key impediments. Data collectors and supervisors recommended enhancing logistical support through better planning, securing reliable accommodations, and ensuring access to essential resources like fuel, food, and internet bundles.

Discussion

The main objective of this study was to understand the perceptions of the local data collectors and supervisors regarding the ethical issues and reflections associated with conducting research in a humanitarian conflict setting. Ethical dilemmas in humanitarian crises are well-documented, particularly in conflict zones, refugee settings, and areas with high levels of political instability [2, 7, 12]. While conducting research in these contexts presents substantial risks, it remains essential for developing evidence-based interventions that address the needs of affected populations [2, 9, 17, 21]. In line with prior studies, our findings reinforce the importance of rigorous ethical reflections, robust risk mitigation strategies, and continuous researcher support in high-risk fieldwork settings [20, 31]. Within this context, the involvement of the local researcher team and local partners was not only essential for ensuring ethical research conduct but plays a pivotal role in enhancing feasibilities, safety, and cultural sensitivity. This aligns with studies emphasizing that engaging local researchers not only improves study feasibility but also enhances ethical adherence, ensures culturally appropriate methodologies, and fosters trust between researchers and communities [7, 9, 21, 26]. Therefore, before initiating research in such environments, it is crucial to critically assess both the necessity and the practical feasibility of conducting the study, considering the indispensable role of local teams in mitigating risks and ensuring ethical compliance.

Risks and ethical challenges in data collection

With this background in mind, we conducted an RCT study in Eastern DRC North and South Kivu provinces, a conflict setting. The research identified seven main themes to assess the risks and ethics of that data collection. These themes—motivation, personal security, trial participants' safety, accessibility/working conditions, field navigation, emotional challenges, and ethical reflections — provided a structured framework for assessing risks. Previous research in conflict settings has demonstrated that research ethics in conflict setting requires a balance between protecting researchers and ensuring the feasibility of conducting meaningful studies [2, 28].

Data collectors were indeed exposed to different significant risks, including threats from armed groups, unsafe living conditions, health concerns, and transportation hazards. Some also reported gender-related risks such as exposure to sexual harassment. While these risks were acknowledged before data collection, experiencing them firsthand was far more challenging. Navigating poor infrastructure, negotiating roadblocks, and adapting to basic accommodations and food conditions proved difficult, particularly for those accustomed to urban settings. This is relevant to the current study where all data collectors had a higher education degree, and almost all lived in major urban areas (i.e., Bukavu and Goma). Sometimes the data collectors would enjoy their time and share pictures of beauty and happiness through the data collector WhatsApp group, but other times the data collectors felt stretched to their limits. It certainly was an intense experience for all of them. These challenges are not unique to our study; researchers in other conflict settings, such as South Sudan, Afghanistan, and northern Nigeria, have similarly encountered threats to personal security, restrictions on mobility, and heightened risks of violence [35, 41]. Studies in Somalia further highlight how security threats at checkpoints and financial extortion frequently disrupt field research in unstable environments [7]. These findings emphasize the need for continuous risk assessments, structured support systems, and adaptable field strategies to safeguard researchers operating in high-risk humanitarian settings.

The emotional strain on the data collectors was profound, as they were exposed to distressing narratives from trial participants who had perpetrated or experienced violence. Engaging with such sensitive topics in a conflict setting heightened the risk of vicarious trauma, a well-documented challenge for researchers working in humanitarian contexts, particularly when discussing gender-based violence and suicide ideation [4, 18]. One of the data collectors, for instance, experienced recurring nightmares after hearing particularly harrowing stories. This distress began to affect not only her well-being but also emotional state of the six-member team with whom she was working. Recognizing the potential impact, the data supervision team promptly intervened, provided immediate emotional support, and facilitated her temporary withdrawal from field activities. To mitigate long-term psychological distress, psychological debriefing sessions were conducted at the end of each data collection round, complemented by continued follow-up with a team psychologist. While no data collector reported long term mental health symptoms following the study, the experience underscored the lasting emotional toll of conducting research in such high-risk environments. Similarly, research on professionals exposed to trauma at work has shown that even with prior ethical and psychological preparedness training, individuals can experience distressing recollections of others' traumatic experiences, highlighting the necessity for sustained psychological support in conflict-related research [5, 36].

Another major challenge was the unpredictability of transportation and accommodations in remote areas. While extensive logistical arrangements were made before data collection—including linking data collectors with local facilitators to help them secure lodging and meals—the inaccessibility of certain locations, poor road conditions, and fluctuating security threats often disrupted these plans. These challenges are common in conflict-affected and infrastructure-poor settings rather than shortcomings in study design [2, 7, 12, 35]. Similar issues have been reported in Burundi, where researchers faced unstable accommodations due to rebel violence and displacement [35], as well as in various conflict-affected regions, where destroyed infrastructure forced reliance on temporary shelters [7, 12]. In our study, data collectors sometimes found themselves in difficult circumstances, with accommodations and food of varying quality. In some cases, harsh road conditions made it impossible to reach designated lodging or restaurants, forcing them to rely on whatever local options were available.

Additionally, navigating ethical dilemmas related to compensation expectations and participant recruitment proved challenging. In some cases, participants—particularly those in polygamous relationships—expected financial compensation for their time, raising ethical questions about the balance between ensuring voluntary participation and addressing participants' economic realities [14]. These findings align with research emphasizing the ethical complexities of conducting studies in resource-limited settings where financial incentives can influence participation [13, 14, 24]. Ethical guidelines emphasize that compensation should not coerce participation, yet researchers must also recognize the economic vulnerabilities of participants and ensure fair compensation practices [7]. This study highlights the importance of navigating these ethical dilemmas in ways that uphold research integrity while respecting local socio-economic contexts.

The ethical dilemmas encountered in this study reflect broader debates on research ethics in conflict settings. While global ethical frameworks provide essential guidance, rigid adherence to these guidelines is often impractical in humanitarian contexts where ethical decision-making must remain dynamic and responsive [7, 12, 21, 40]. Studies emphasize that ethical reflexivity—continuously reassessing risks, participant vulnerabilities, and researcher well-being throughout the study process—is critical to ethically sound research in high-risk environments [1, 15, 40].

Ethical reflections on data collection risks

The main goal of this study was to capture the ethical judgement of the data collectors with regards to taking data collection risks in a humanitarian crisis setting. Ethical dilemmas in conflict-affected areas extend beyond standard research ethics considerations, requiring dynamic and context-sensitive approaches to protect researchers and participants [2, 7, 21, 26]. The idea of conducting this study was largely born out of the different debriefing sessions during the RCT data collection and the comments shared on the data collection in the WhatsApp group, in which data collectors and data supervisors shared their views and concerns. We decided to capture their viewpoints in a more structured way through formal research. The ethical concerns raised by data collectors were not solely theoretical; they were shaped by their lived experiences in the field, including safety threats, logistical hardships, and the emotional toll of engaging with vulnerable populations. As seen in prior studies, ethics in humanitarian research is often negotiated in real-time, with field teams adapting ethical frameworks to the constraints and unpredictable conditions of their environment [1, 12].

When asked whether the data collection exercise was the right thing to do, and whether they feel that the risks they took were worth taking, all data collectors and supervisors strongly supported the study, emphasizing its potential to inform policies and interventions for Intimate Partner Violence (IPV) in conflict settings. Even more, the suggestion that the study could have been the wrong thing to do came to them as an unpleasant thought, which they strongly opposed. This aligns with prior research highlighting how field researchers in humanitarian contexts often view their work as ethically necessary despite the risks involved, particularly when research findings can contribute to addressing urgent public health crises [20, 31]. These findings, however, require careful interpretation. As prior studies suggest, factors such as financial incentives, employment expectations, and post hoc rationalization may have influenced how data collectors assess risks [13, 14, 24]. Even if data collectors express their willingness and ownership over taking certain risks, this does not absolve the research team from its ethical obligation to minimize harm through robust risk mitigation strategies [7].

One of the most profound ethical dilemmas that emerged during the trial was the unexpectedly high number of trial participants reporting suicidal ideation (100/3600). While a distress protocol had been established with a team psychologist to follow up with these trial participants, data collectors soon realized that the existing support mechanisms were insufficient to address the scale of the issue; and were key drivers in making us update the protocol. In response, the research team worked collaboratively with data collectors to expand the distress protocol by engaging six partner organizations affiliated with the Living Peace Initiative to enhance referral pathways for mental health support. We also obtained input from different international Global Health ethics experts and maintained continuous communication with Elhra, our funder. This ethical adaptation aligns with growing evidence emphasizing the need for field-responsive modifications to research ethics protocols, particularly in crisis settings [2, 38].

Despite these measures, one trial participant tragically died by suicide during the study period. This individual was not identified as high-risk during initial screening, and did therefore not benefit from additional follow up and support. While researchers are not primary care providers, they bear an ethical responsibility to ensure that vulnerable participants have access to appropriate support [23]. The challenges encountered in this study reinforce the need for more adaptive, context-sensitive ethical frameworks that integrate local expertise into participant protection strategies [21, 40].

This study underscores the crucial role of local researchers in ethical decision-making. Local research teams are uniquely positioned to assess ethical risks, navigate community expectations, and propose culturally appropriate solutions [6]. Future research in crisis settings should prioritize participatory ethics approaches, integrating local perspectives into real-time ethical adaptations and risk management strategies [2017, 38].

Study strengths and limitations

We believe that we were able to conduct the original RCT study because we were a regional research team, working with a strong local implementation partner, Living Peace Initiative, who has been working in the same humanitarian settings for the past two decades. They understand their own communities' nature, behavior and functioning, and allowed us to make key decisions and carry out the study. They also helped us to recruit a strong data collector team, which was another key component of the success of the study.

The ethics study had some limitations. Firstly, the way Congolese participants respond/verbal culture, the answer is not always the personal account of their point of view, but a reflection or analysis of the situation or a nicely rephrased issue. Secondly, the data collectors interviewed each other, which had the advantage of creating a trusted environment for the interviews but had the potential disadvantage that some feelings or thoughts remain unexpressed in front of someone they know personally. Thirdly, as mentioned before, the data collectors or data supervisors could be motivated to give overly positive answers in expectation of future employment. For example: one data collector who had difficulties to climb the steep hills to reach data collection sites, which we were aware of through team leaders' daily reports, did not mention these difficulties in the interview.

Conclusion

This study highlights the critical role of local researchers in ethical decision-making when conducting research in humanitarian crisis settings. While global ethical frameworks provide essential guidelines, they must be flexible enough to incorporate local risk assessments, security dynamics, and researcher well-being. The logistical constraints faced in the Eastern DRC were not study-specific failures but reflect broader challenges inherent to fieldwork in conflict zones. By integrating ethical reflexivity, participatory risk management, and psychological support mechanisms, future research can better safeguard researchers and trial participants while ensuring high-quality data collection in unstable environments.

At the same time, we recognize that the findings of this study could be biased due to the possibility of coalescence, as data collectors had socio-economic incentives to participate. However, despite these limitations, we provide strong evidence that data collectors perceive their work as meaningful, which influenced their commitment to the study. Data collectors and data supervisors were not passive implementers carrying out predefined tasks but active agents who assessed, mitigated, and navigated risks in collaboration with the research team.

Therefore, we argue that 'real ethics has dirty feet'. Keeping your feet clean in the sense of avoiding all possible risks is not necessarily ethically superior to making your feet dirty by accepting a certain amount of risk if this can be justified by the relevance and potential impact of the study. The decisions to accept risks must be made through full involvement of local data collectors and supervisors as equal research team members, ensuring that ethical concerns are not just theoretical but integrated into the practical realities of fieldwork in conflict settings.

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Author contributions
All authors contributed to the study design and implementation of the research. MB and HS contributed to the data collection and monitoring. JN, EN, MK, JM and SJ contributed to the data analysis and interpretation. SJ, JM and ER were the study supervisors. JN and SJ contributed to the writing of the draft with critical input and comments from all other authors. All authors have reviewed and approved the final version of this manuscript.

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Data availability
Data analyses performed during the current study (recordings and transcripts) are available from the corresponding authors on reasonable request.

Declarations

Ethical approval and consent to participate
The study design and protocol complied with the principles of ethical standards according to the Declaration of Helsinki [27]. We obtained ethical clearance from the University of Rwanda - College of Medicine and Health Sciences Institutional Review Board (No 157/CMHS IRB/2019); and from Commission d'éthique de l'Institut Supérieur du Lac à Goma (No 059/ISL/PCE/MB/2018). Both verbal and written informed consent was obtained from the participants after explaining clearly research objectives and research process.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

Author details
[1]Mental Health and Behavior Research Group, College of Medicine and Health Sciences, University of Rwanda, Kigali, Rwanda
[2]Department of Psychiatry and Behavioral Sciences, College of Medicine and Health Sciences, University of Rwanda, Kigali, Rwanda
[3]Department of Humanities, Social Sciences and Cultural Industries, University of Parma, Parma, Emilia-Romagna, Italy
[4]Department of Political Science, University of Rwanda, Kigali, Rwanda
[5]Global Health Delivery, University of Global Health Equity, Kigali, Rwanda
[6]The Director of International Programs at Living Peace Institute, Kinshasa, Democratic Republic of the Congo

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