Instant Messaging meets Diary Studies: Employing WhatsApp in Audio Diary Research with Female Journalists in Burkina Faso

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Abstract: This paper discusses the challenges and opportunities of using instant messaging (IM) technologies for diary studies. The discussion shows that IM as well as diary methods are both highly adaptable and flexible tools for qualitative data collection. In combination, they allow for innovative designs that might overcome limitations of more widely used data collection methods. The paper presents in detail and reflects upon a mixed online and offline design of an audio diary method with 'hard-to-reach' research participants in Burkina Faso. It ends with discussing further methodological and ethical aspects such as reach, temporalities, media formats, conversation styles, confidentiality/anonymity, technical aspects, as well as interaction and power sharing between the researcher and participants in order to spark methodological reflections when designing an IM diary study.

Keywords: online data collection, diary studies, qualitative research, instant messaging (IM), journalism

Tagebuchverfahren per Instant Messaging: WhatsApp-Forschung mit Journalistinnen in Burkina Faso

Zusammenfassung: In diesem Beitrag werden die Herausforderungen und Möglichkeiten von Instant-Messaging-Technologien (IM) für Tagebuchstudien diskutiert. Die Diskussion zeigt, dass sowohl IM als auch Tagebuchmethoden sehr anpassungsfähige und flexible Werkzeuge für die qualitative Forschung sind. In Kombination ermöglichen sie innovative Designs, die die Einschränkungen traditioneller Datenerhebungsmethoden überwinden können. Anhand eines konkreten Beispiels in Burkina Faso wird die Anwendung einer Audio-Tagebuch-Methode detailliert und kritisch reflektiert. Daraufhin werden weitere Aspekte wie Reichweite, Zeitlichkeit, Medienformate, Konversationsstile, Anonymität/Vertraulichkeit, technische Überlegungen, sowie Machtverteilung und Interaktionen zwischen Forscher:innen und Teilnehmenden diskutiert, um methodologische Überlegungen beim Design einer IM-Tagebuchstudie anzuregen.

Schlüsselwörter: Online-Datenerhebung, Tagebuchstudien, qualitative Forschung, Instant Messaging (IM), Journalismus

1   Introduction

The Covid-19 pandemic raised new challenges to field-based research around the globe. Online tools replaced, at least temporarily, face-to-face data collection instruments. However, online methods and remote tools for data collections are not new and have already been used prior to the outbreak of the pandemic in various fields and under different circumstances. The use of WhatsApp and other digital technologies for data collection is still novel[1] and needs more systematic and transparent discussion (Herron et al. 2019; Manji et al. 2021). This paper wants to contribute to systematising literature on instant messaging (IM) as tools for data collection in qualitative research, illustrated by a concrete experience that employs IM in an audio diary method under conditions of rising insecurity and the Covid-19 pandemic in Burkina Faso.

The paper provides an overview of current literature on qualitative diary studies and embeds the literature on digital data collection in this broader debate. In this sense, the paper examines how a relatively old method, the diary method[2], used through comparatively new technologies, such as IM through smartphones, poses challenges and offers opportunities for qualitative research when access to the field is constrained.

The paper draws from the experience of integrating IM as part of the methodology to study how female journalists in proximity radio stations[3] contribute to conflict transformation processes in Burkina Faso. The approach presented is relevant for current discussions in several ways: firstly, the approach was developed in consequence of the drastic deteriorations in the security situation that impeded access to most of the radio stations in the sample adding onto the challenges regarding health risks and travel restrictions posed by the Covid-19 pandemic; secondly, the research participants reside in 'hard-to-reach'[4] areas and enjoy only limited mobility due to security concerns, Covid-19 constraints, but also due to family care responsibilities; thirdly, the area under study provides restricted information and communication technology (ICT) infrastructures as it is located outside the capital city where internet connection and even mobile phone coverage are unreliable. Thus, this paper contributes to closing the literature gap on mobile IM tools used in qualitative data collection with 'hard-to-reach' participants (Herron et al. 2019, P. 1006; Twis et al. 2020, P. 41) and under challenging infrastructural, social, health and security-related conditions.

The underlying assumption of the paper presumes that technologies are not neutral but influence the data collection process as well as the data itself. In its final chapter, the paper calls for a methodologically driven reflection when designing and conducting diary studies using IM technologies. Through reviewing relevant literature, eight overarching themes are proposed to guide such methodological reflection, namely reach, temporalities, empowering participants, multimedia, conversation style, involvement of the researcher, anonymity and confidentiality, as well as technical and infrastructural implications.

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1   In between submission and publication of the present article, new research on WhatsApp use for qualitative research has been published. See for instance Humphries et al. (2022), Mavhandu-Mudzusi et al. (2022) and Mwanda (2022).
2   Diaries have been used as research methods since the 1930s, but social scientists have been using them increasingly only for the past 40 years (Kunz 2018, P. 69).
3   Based on the French *radio de proximité* that refers to a geographical, cultural or socio-professional closeness to its audience (Ba 2003, §2).
4   The term 'hard-to-reach' is used with single quotation mark to highlight the complicated use of the term. As Douedari et al. (2021) argue. "The very categories of 'lack of access' and 'hard-to-reach' have arisen from the domination of the 'foreign gaze' in humanitarian studies" (P. 1)

2   Diary Research Methods: Towards Digital Multimedia Diaries

In her book on diary-based research methods, Kunz (2018) contributes to the literature on diary research in German language, acknowledging that most literature is available in English (Kunz 2018, P. 12). Even though the term 'diary' might seem self-explanatory in English, it is much less the case in other languages such as German, and particularly in French[5] (Kunz 2018, P. 21). Kunz also highlights the challenges of defining what diary research means due to the diversity of approaches (2018, P. 35). For the purpose of this paper, I will use Nezlek's definition, who defines "a diary study to be a study in which participants provide data on a regular basis over an extended period of time" (2020, P. 2).

Diaries can come in many different forms and are highly flexible tools for both quantitative and qualitative data collection. The main aim of diary methods is to gain access to everyday practices in their habitual environment (Bartlett/Milligan 2015, P. 16; Bolger/Davis/Rafaeli 2003, P. 580). The benefits of diary studies are particularly relevant when researching phenomena that are difficult to observe from the outside ('hard-to-reach'), intimate or sensitive topics (eg. Sex), routines that are automatic or difficult to recall, and phenomena that need observation over a longer period (Hislop et al. 2005; Kunz 2018, P. 70–72). Diary studies can be conducted with unsolicited[6], usually personally kept diaries, or solicited diaries, that are kept by research participants on demand of the researcher (Alaszewski 2006). This paper focuses on the solicited type of diaries which must be understood as responses to a certain research topic and not necessarily as the participants' own pressing concerns (Meth 2017, P. 95).

Research using solicited diary methods can be found in many disciplines, amongst others in geography and mobility studies (Fitt 2018; McGuinness 2009), in media consumption research and ICT use (Lanerolle/Schoon/Walton 2020; Kaufmann/Peil 2020; Palen/Salzman 2002), in psychology (Bolger/Davis/Rafaeli 2003; Crozier/Cassell 2016; Grossmann et al. 2021; Nezlek 2020; Ohly et al. 2010), in education studies (Kanter 2020; Fischer/Bosse 2013; Káplár-Kodácsy/Dorner 2020) and in gender, queer and sexuality studies (Gibson et al. 2013; Harvey 2011; Kenten 2010; Meth 2017).

Key aspects of diaries are their flexibility and adaptability (Herron et al. 2019). In this regard, diary methods can be designed in many ways using structured or unstructured designs, prompts, and multimedia formats (see Bolger/Davis/Rafaeli 2003; Hyers 2018; Fitt 2018; Kaufmann/Peil 2020; Kunz 2018; Meth 2017). Particularly **qualitative diary methods** allow for rich, context specific information about the daily routines and practices (Fitt 2018, P. 657). Feminist scholars argue in favour of making more use of diary methods (Bijoux/Myers 2006; Curran et al. 2015; Gibson et al. 2013; Heimtun 2007; Herron et al. 2019; Meth 2019; Morrison 2012; Seibold/Richard/Simons 1994; Spowart/Nairn 2014) as the method allows for eliciting more emotional, embodied, relational, and complex accounts (Filep et al. 2018, P. 457; Bijoux/Myers 2006, P. 48). Key aspects for feminist research that can be supported by diary studies are inclusion, reduction of power imbalance and ethical concerns (Heimtun 2007).

The main challenge is that diary methods demand a high level of commitment on behalf of research participants because they might be time-intensive, need training sessions or technical competences, and therefore necessitate a high level of motivation among research par-

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5   I used the term '*journal de bord*' rather than '*journal intime*'.
6   Charlotte Kenten refers to Facebook accounts and blogs as kinds of unsolicited diaries (2010, P. 2).

ticipants to limit dropouts, attrition, and missing data (Bolger/Davis/Rafaeli 2003, P. 591; Kaufmann/Peil 2020, P. 4).

The possible effects of diary keeping remain under-researched (see Bolger/Davis/Rafaeli 2003, P. 592; Cao/Henderson 2020). Authors highlight the empowering opportunities of diaries, allowing the research participants a greater deal of control over the data collection process (Bartlett/Milligan 2015, P. 72–73; Meth 2019). In feminist research, the diary method is sometimes presumed to have a cathartic or therapeutic effect (Crozier/Cassell 2016, P. 410; Herron et al. 2019, P. 1005; Meth 2019, P. 296, 298; Morrison 2012, P. 73; Seibold/Richard/Simons 1994, P. 396–397; Williamson et al. 2015, P. 23). At the same time, engaging in self-reflective practices such as diary keeping might lead to anxiety as research participants may become aware of their marginalized position (Bartlett/Milligan 2015, P. 76, 79; Herron et al. 2019, P. 1011; Meth 2017, P. 98–99) and in some cases to the re-experiencing of trauma or distress (Spowart/Nairn 2014, P. 335). Bartlett and Milligan stress that effects of diary research are mostly unintended (2015, P. 76) and Williamson et al. (2015, P. 27) point out that diary keeping might even change the behaviour under study.

Due to these enabling and constraining factors, solicited diaries are often embedded in research designs that include multiple data collection methods, such as interviews, surveys or focus group discussions (see Kunz 2018, P. 66). The **interview-diary method** combines the diary method with pre- and/or post-diary-interviews to inform the diary design, or to probe inconsistencies, to add context data (Herron et al. 2019; Kenten 2010, § 8; Seibold/Richard/Simons 1994; Zimmerman/Wieder 1977), to assess the diary-keeping process (Cao/Henderson, 2020), to elicit further narratives (Gibson et al. 2013, P. 390) or to re-perform emotions (Spowart/Nairn 2014, P. 329).

Regarding the analysis of qualitative diary content, Filep et al. (2018) criticize that there is a lack of discussion and reflection. Meth (2019, P. 299–300) suggests that in some specific cases, participant validation might help to improve credibility of interpretations. At the end, it depends on the overall ontological and epistemological foundations of the research whether narrative analysis, discourse analysis, or any other approach to qualitative data analysis should be prioritized.

The choice of the **media technology** and the data format for a diary study needs careful consideration and should be informed by the research purpose, design and adapted to the needs of participants. Whether an audio diary, a hand-written, or an online image-based diary is appropriate depends on the research question, the participants' needs and capabilities, as well as data protection concerns. As Meth points out, paper-based written diaries might be better suited to protect privacy concerns when researching sensitive issues such as domestic violence (Meth 2017, P. 104), whereas audio diaries might be more suitable for research participants that are more confident in expressing themselves orally or find written diaries difficult due to illiteracy, age, or language skills (Bartlett/Milligan 2015, P. 22). Concerns about the impact different types of media have on the diary process and the data collected is crucial but remain under-researched (Carter/Mankoff 2005).

With increasing multimedia opportunities to collect data through digital technologies[7], more research is needed to understand the methodological implications of different media types on the research process. Even though online and offline worlds cannot be separated anymore, access and interdependence between them remain key questions for qualitative research (see Schmidt-Lux/Wohlrab-Sahr 2020). When choosing the technology to be used for any **digital online-based** qualitative research method, an analysis of the infrastructure available and used by research participants is key. Offering research participants a choice between

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7   See Douedari et al. (2021) for an overview of different internet call applications used for remote research in Syria.

different tools to conduct the diary study makes best use of the methods' inherent flexibility (Herron et al. 2019). This is of relevance when doing research in areas with weak ICT infrastructures.

Online and mobile methods, such as IM, allow research data to be collected *in-situ* and hence with more physical and temporal closeness to the phenomenon under study (Boase/Humphreys 2018, P. 155). They also offer possibilities to collect a greater amount and more complex data (Boase/Humphreys 2018, P. 155–157). Ethical considerations can guide the researcher which data should be considered 'research data' and what serves as a support to the research process. When we look at ethical guidelines for qualitative research, particularly at informed consent guidelines, it is stated that one should only collect as much data as needed to answer the research question.

In the next part, I will illustrate the use of IM technologies as part of my own diary study with female journalists in northern parts of Burkina Faso. I then conclude with several methodological considerations and implications to keep in mind when designing and using IM for qualitative audio diaries.

3   Case Report: Using WhatsApp in an Audio Diary Study in Burkina Faso

The audio diaries described in this article were embedded in a broader, multi-method research design to investigate how female journalists contribute to conflict transformation processes through their work in proximity radio stations in Burkina Faso. The focus here is on the interview-diary method combining online and offline tools to gain access to everyday work practices and identity formations of female journalists even in 'hard-to-reach' areas.

Health and security-related aspects have severely impacted my research design and choice of methods. At the time of data collection, in 2019 and 2020, the security situation deteriorated rapidly, and the Covid-19 pandemic emerged. Notably the former forced me to reassess my initial design, which was based on participant observation, and to adopt a more remote alternative. When access to the field is decreasing, the question comes up whether to change the research location or focus. I decided neither to change my questions nor locations, but to adapt the methods. Hagberg, when confronted with the same situation, claimed that conducting ethnographic research in areas affected by insecurity is "[…] a methodological necessity, and a personal commitment. But it is also a political statement" (Hagberg 2019, P. 20). Without ignoring the real threat that conducting research in unstable environments might pose to the research participants and the researcher, doing research in such conditions asks for a rigorous analysis and the use of a variety of methodological and conceptual tools (Hagberg 2019, P. 25–26). Audio diaries turned out to be a valid and valuable alternative for my intersectional research design (see Gibson et al. 2013).

Another contextual aspect to consider was related to ICT infrastructure. Even though general statistics of mobile phone penetration are rather high for Burkina Faso[8], these numbers should be reconsidered when taking into account inequalities in access to smartphones and rural-urban divides in distribution of infrastructure[9].

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8   In 2019, Burkina Faso had a mobile phone penetration rate of over 100% (Statista 2021).
9   In 2017, internet usage in Burkina Faso was 16% (World Bank b). In 2019, only 18% of the population in Burkina Faso had access to electricity; in urban areas 64.6%, whereas in rural areas 4.74% (in 2014)

Based on these considerations, I opted to use a flexible set of data collection methods mixing online and offline tools to do justice to the difficult realities on the ground. The design of the interview-diary method contains an initial semi-structured interview with the participants prior to the one-week audio diary and followed by a second interview. I chose an audio format for the diaries because some participants would feel less comfortable in expressing themselves in written French and as journalists, they shared strong oral and oratory skills.

Based on an exchange about confidentiality and security-related aspects of data collection together with the research participants, we agreed on an individual basis on the most convenient and secure approach to adopt. The options for the interviews were either a physical meeting in Ouagadougou or a phone interview; for the diary, the options included the use of a personal recorder, a recorder provided by the researcher, or using WhatsApp.

These different options led to the following individualized data collection process as summarized in Table 1.

Tab.1: Overview of individualized data collection processes

Participant	Interview prior to diary	Audio Diary	Follow-up interview
1	Phone call	WhatsApp voice messages	Phone call
2	Phone call	WhatsApp voice messages	Phone call
3	Phone call	WhatsApp voice messages	Phone call
4	Phone call	WhatsApp voice messages	WhatsApp voice messages
5	Face-to-face in a garden restaurant	Recording device provided by researcher (dropped out)	–
6	Face-to-face at researcher's home	Recording device provided by researcher	Face-to-face at participant's home
7	Face-to-face at researcher's home	Participant's own recording device	Phone call

Source: own elaboration

Overall, the diary process took longer than expected (see also Gibson et al. 2013, P. 389) with an average of around 30 days to conduct pre-, post-interview and an average of 10 diary entries.

For the audio diary, participants based their choice to use a recording device or WhatsApp on their specific circumstances. Only one participant had her own personal recording device and opted to use it. The others shared their devices with colleagues, and hence, were not apt to protect their privacy. The two remaining options were: providing the participants with a recording device, or to use WhatsApp, highlighting that the data protection is partially out of my control. Despite these privacy concerns, four participants opted for WhatsApp and two only for the recording device. WhatsApp had the advantage that research participants were familiar with the application. Participants who used their personal smartphone did not encounter any difficulties in recording diary entries. Yet, two participants opting for the recording device encountered difficulties using the device despite a short introduction by the researcher in how to handle the device.

The main reasons for adopting the audio diary is the extent to which orality is part of the journalists' daily work, who might feel more comfortable expressing themselves in spoken language. Besides, the oral diary promises richer and more detailed qualitative data than written entries as discussed above. Yet, participants were not familiar with diary keeping and

(World Bank a). Gender remains an influencing factor in access to mobile phone and internet in sub-Saharan Africa where women are 37% less likely than men to use mobile internet (GSMA 2021).

were hesitant about what to say and how to start. Guidance was provided to elicit and inspire their initial reflection[10]. However, the rest of the process was left open for the participants to decide on what and how they wanted to report (see Herron et al. 2019; Worth 2009). The advantage with WhatsApp was that I was able to monitor the process and encourage participants to report even if they felt there was nothing new in their everyday, avoiding the option 'nothing to report' (see Palen/Salzman 2002).

Finally, I ended up with six completed interview-diaries and a total of 14 hours of audio material. All audio material was stored encrypted on a cloud server provided by the university. Interviews were recorded with my personal recording device and WhatsApp conversations were exported and later deleted on my personal phone. On average, a participant made 9,8 daily entries with an average length of 2 minutes 52 seconds[11]. The tool to conduct the diary did not have any influence on the length of the entries, as the longest average (04'45'') and the shortest (01'22'') were both using WhatsApp. There is also no significant difference in comparing the average length of diary entries by WhatsApp users (02'59'') and those who used a recording device (02'31''). The participants who talked the longest during the interviews had also the longest average diary entries and the participant with the shortest average of diary entries also talked the least during the interviews. This certainly unrepresentative data supports Williamson et al.'s (2015, P. 23) argument, that the length of diary entries might depend more on the person's talkativeness or expressiveness, than on the type of technology used (see Cao/Henderson 2020 for more factors). In accordance with Worth (2009, § 3.4), I found transcribing voice messages (as in diary or IM interviews) easier than phone interviews because the sound quality was better and interactions clearly separated without interruptions. Therefore, the ease of transcription depends less on the diary method as such, but on the synchronicity of the technology used.

Even though I asked the participants to use voice-messages to report their diary entries, some participants also shared pictures and videos on WhatsApp. Even though the photos and videos were useful to contextualize diary entries, I could not use them as formal research data, because these sensitive data formats were not included in the informed consent.

WhatsApp proved also valuable to communicate difficulties and external factors affecting the diary process. Only two out of six diaries were conducted within one week time. The others took much longer because of health issues, week-long electricity blackouts, training residences, and many other events that interfered with a 'normal week at work'. WhatsApp allowed me to monitor the process and allowed the participants to communicate about the process so that we could find alternatives in case of disruptions. This proved particularly helpful in volatile contexts[12].

When it comes to the content, the diary method allowed for insights into the everyday life of the participating journalists, including their private life, emotions and their relationships with colleagues or superiors. As Kenten states: "It provides a space through which intersections between identities can be explored as well as more specific experiences, for example, focusing on emotions or a specific aspect of everyday life and spaces, such as work or family" (2010, § 41). The audio diary allowed research participants to express themselves through storytelling and singing, as these two excerpts illustrate:

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10 Instructions included: finding a calm space to avoid interruption, mentioning date and time, giving a daily account of your workday over the period of one week. Prompting questions were linked to how their workday went, how they felt, what they were working on, with whom and how.

11 Transcribed verbatim an average diary entry contained 2'285 characters.

12 IM technology for diary keeping can therefore help to support research participants through more difficult and distressing times as mentioned by Williamson et al. (2015, P. 26) in the case of breastfeeding.

> At the beginning of the radio drama, we sang, I sang (..) […] the song began by saying : [she started to sing in *mooré*]. (diary, 2020, WhatsApp, translated by author)

> My day started wonderfully. Because it is [weekday] the BIG [market] day/ when people leave their villages and cities to come to [our town], to buy animals, and at the same time, eh, to pass by the radio to bring their *communiqués*, and (..) again, good mornings and greetings. So, very early in the morning, you can hear the sound of trucks, the sound of animals, that shout left and right (.) people bring them to the big market to sell. So, VERY early in the morning, I went to the radio to help the secretary to write down the *communiqués*. (diary, 2020, WhatsApp, translated by author)

Even though my research was not explicitly asking about their private lives, many research participants shared insights into very private moments or feelings as the next two excerpts illustrate:

> (laughing) I was bathing my daughter […] she said that I should also add what I did for her (laughing). (diary, 2020, WhatsApp, translated by author)

> I came home at 23:30 and slept around midnight. Yes. I woke up at 6 am to go back to the radio for the meeting […] and do my show at 10 am. Finish at 11am. Go home. Do my household chores. Cooking, have a rest, so now I have the time to do the diary. […] I am really tired, to combine work (incomprehensible) and domestic work, it is ex-haus-ting. But I like it. […] I really do like working. (diary, 2020, recording device, translated by author)

However, it was difficult sometimes to recognize from the voice and tone if a person was sad or simply tired. It helped to ask about the circumstances of diary keeping in the post-diary interview in order to contextualise these entries. The combination of interview and diary method proved particularly relevant for the multi-level intersectional analysis[13]. Preliminary coding of the data shows that initial interviews, diary entries, and post-interviews each provide different insights related to the four intersectional levels: diary entries clearly generate more data on the individual level, whereas the pre-interview tended to focus more on the symbolic level and the post-interview on the structural level. The relational level on the other hand, seems more connected to the personality. Moreover, the diary offered insights into meaning making processes, particularly when related to controversial topics, as this journalist's reflection on her interactive radio show demonstrates:

> […] it is a reality in Africa, but I will wait for the reaction of people today at 5 pm. Oh yes! Everyone will give their point of view. It is true that a woman has no right [to do that], but some women do it […] to fight to save/ to keep your man, to keep your *foyer*, what should you do? Sit back and do nothing? (.) and let it all perish? (.) that is the question! (diary, 2020, recording device, translated by author)

In the next part, I will discuss aspects from the literature that help reflecting on methodological implications when planning, designing, and conducting diary studies based on IM technologies. These aspects are illustrated by my experience described above.

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13 Adapted from Winker & Degele (2009) I use four interdependent levels of analysis: personal, relational, symbolic, and structural level.

4 When Diary Studies meet Instant Messaging: Methodological and Ethical Reflections

Most literature discussing online research methods tend to structure their thoughts in advantages and limitations of online compared to more traditional face-to-face or phone methods. There are, however, many possibilities for using online methods in different research contexts; the advantage for one, might be a disadvantage for another. This paper argues for breaking with this dichotomic discussion and it offers instead the idea of structuring more thematically the possible challenges and opportunities that might occur when using online IM technologies for qualitative diary research.

Examining literature on diary methods and IM tools, I identified the following cross-cutting and intersecting themes:

Tab. 2: Overview of themes and aspects for methodological considerations

Themes	Aspects
Reach	Geography, security, intimacy, accessibility, research field, language
Temporalities	Immediacy, longitudinal and diachronic data, a/synchronicity, interruptions, filtered data
Empowering participants	Participatory co-creation, relational ethics, control, (self)reflection, positionality, open approaches, attrition
Multimedia	Creative self-expression, "beyond the confines of language", research data, literacy
Conversation Style	Intimacy, sensitive topics, rapport, non-verbal communication, one-sided conversations
Involvement of the researcher	Monitoring, impact on data, support, 'virtual' presence
Anonymity/confidentiality	Commercial Apps, data protection, informed consent

Source: own elaboration

The main feature of IM is its great temporal, spatial and methodological flexibility (Kaufmann/Peil 2020, P. 10), which poses both opportunities and challenges in the process of data collection in qualitative research. In the following, the themes identified in table 2 are developed in more detail.

Reach: Increased reach thanks to online IM is one of the most cited advantages (Lannutti 2017). Online methods are described to increase access to 'hard-to-reach' participants, including participants from a small social group, professional groups with time restrictions, people from remote geographic areas, mobile populations, or areas inaccessible due to insecurity or cultural norms (see Dawson/Einion-Waller/Jones 2020; Käihkö 2020; Lannutti 2017, P. 240; Manji et al. 2021; Twis et al. 2020, P. 38). As it is the case for diary studies, flexibility in adapting online IM methods seems almost illimited given internet and electricity is provided. This, however, might exclude certain parts of the population, for instance elderly or economically disadvantages people who do not have access to smartphones or digital skills (Lannutti 2017, P. 247). A careful intersectional analysis of the infrastructure and needs of participants is crucial. Offering different choices, both analogous and digital, can make the research process more inclusive.

Apart from facilitating access to the 'field', online IM blurs the delimitations between the 'field', 'desk' and 'home' (Käihkö 2020, P. 85). These boundaries have become even more merged in times of Covid-19. Online and offline experiences can no longer be clearly

separated and are increasingly interconnected. WhatsApp for instance is used as research site, data collection and communication tool at the same time (Manji et al. 2021, P. 785).

Even though IM and other digital technologies increase access to previously inaccessible research participants, important barriers persist. In my research, even though IM facilitated reaching people in inaccessible areas, language remained a barrier to gain access to female journalists. Due to methodological concerns and lacking resources for translation, only French-speaking journalists took part in my research. Despite advancements in technological support for translating widely spoken languages, these AI-based technologies discriminate against less widely spoken languages (Doumbouya/Einstein/Piech 2021).

Temporalities: Data collection methods can be described as synchronous, semi-synchronous and asynchronous. Some scholars appoint particular methods to each of the temporalities (see Twis et al. 2020, P. 40). IM can have all these temporalities; though it is often semi-synchronous when the conversation is continuing without a necessary co-presence of the interlocutors[14]. Temporal aspects are highly relevant for diary studies, as they aim at gathering immediate and situated data, and at the same time, looking for longitudinal and diachronic data (Alaszewski 2006, P. 93; Herron et al. 2019, Monrouxe 2009). Moreover, the temporal flexibility allows for the data collection process to be adapted to the context and to the participants' needs. Particularly the choice at participants' hands to use the IM in a synchronous or asynchronous way allows them to navigate the pressure of immediacy (Crozier/Cassell 2016, P. 410–411; Heimtun 2007, P. 252). However, asynchronous IM conversation may lead to interrupted and stuttered conversations, which can be managed by defining rules of conduct in advance (see Lannutti 2017, P. 248). Distractions and interruptions are also possible in face-to-face interviews, but they may be less visible in remote methods (Lannutti 2017, P. 248–249). Another methodological implication of temporality is that the data is immediately available to the researcher (Kaufmann/Peil 2020, P. 2; Palen/Salzman 2002, P. 89), which may favour monitoring and adjustments of the data collection process. The advantages of using IM for diary and interviews in a semi-synchronous way in my own experience was that participants were able to answer whenever they felt comfortable to do so, which also improved the quality of sound and content. On the other hand, semi-synchronous communication takes much more time, effort, and patience from the part of the researcher, who has to bear the uncertainties of conversations that stretch over days and weeks, with the perpetual risk of breaking down.

Empowering participants: The flexibility of IM technologies can be used to give back control to research participants (see Kaufmann/Peil 2020, P. 10). In line with the relational ethics inherent in feminist diary studies, participants regain control and can adapt the method to their own needs and availabilities (Herron et al. 2019, P. 1006). Even though this might be difficult for the researcher (see Käihkö 2020, P. 81), the immediate access to the data through IM might compensate for some of the fears.

Moreover, the flexibility of IM encourages researchers to dare more open and unstructured ways of collecting data. For instance, Herron et al. demonstrate how regular contact between the researchers and participants can enhance the sensitivity and quality of data collected from digital diaries (Herron et al. 2019, P. 1008). Such an approach can reduce the probability of attrition which is one of the main challenges of diary studies (see chapter 1). Yet, as Palen and Salzman discussed, a too open, flexible, and unstructured approach might seem intimidating and overwhelming for research participants (Palen/Salzman 2002, P. 90–91).

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14   Dawson et al. (2020) consider such talk on IM interfaces "continuous sporadic conversation" ("IM Interviews and case study" section).

Researchers need to find a balance between offering the research participants to take back control and not overburdening them. From my own experience, I found that at least in one case, the participant was glad to have the diary to express herself, but also to give a new sense to her daily activities. She said that my diary came to give her a task, to fill a bit her void[15] (post-diary-interview, 2020, phone). Nonetheless, the relationship between me and participants remains unequal, as the participants' frequent question whether I got all the information I needed from them reminded me.

Multimedia: Technological advances and the role of IM in everyday life allow to capture daily life easily through different media formats, such as text, geo data, time stamps, images, videos, sound recordings, documents, screenshots, etc. (Dawson/Einion-Waller/Jones 2020; Lannutti 2017, P. 237). The choice of the media format should always be informed by the research question, design, and the participants' needs. Sometimes text-based messages might be preferred over visual or audio data, because it grants better data protection and requires simple transcription or translation processes (Twis et al. 2020, P. 51). On the other hand, text messages tend to be shorter/ more concise (Dawson/Einion-Waller/Jones 2020; Twis et al. 2020, P. 48) and more likely to be edited than audio messages for example (Fitt 2018, P. 64). Voice messages on the other hand allow for richer and longer answers and are more inclusive to less-literate participants (Fitt 2018, P. 658). Moreover, Crozier and Cassell argue that audio diaries might be better suited to access meaning making processes (Crozier/Cassell 2016, P. 399).

As different instruments to capture data are integrated in the average smartphone, it facilitates access to multimedia data and offers multiple ways of self-expression (Kaufmann/Peil 2020, P. 2), but they also ask for specific technological and media-related competences (Kunz 2018, P. 131). Herron et al. encourage to make use of digital tools in diary studies to collect and provide multiple ways to engage with research participants and call for more research to explore the full potential of digital multimedia tools in qualitative research "beyond the confines of language" (Herron et al. 2019, P. 1012–1013). As mentioned in the case report above, research participants shared photos, videos, audio files with me, others engaged in storytelling and singing to provide a vivid picture of their experience.

Conversational styles: Technologies are not neutral and affect the way we communicate through them. Particularly IM applications that are used for daily private purposes, such as WhatsApp, implicitly promote a private, informal, and conversational style of communicating (Lannutti 2017, P. 238). Interestingly, participants using a recording device also engaged in a conversational style and for instance asking me for advice how to manage work and family[16] (diary, 2020, recording device). A recurrent critique of the informal conversation styles is that they won't allow for discussing sensitive topics. Nonetheless, as research has shown, online methods can be used on a variety of research topics, even sensitive ones, however, this needs careful consideration of the broader research design, data protection, and ethical questions (Barbosa/Milan 2019; Dawson/Einion-Waller/Jones 2020; Kaufmann/Peil 2020, P. 10; Lannutti 2017, P. 239–240). The question arises, if for some people rapport and trust in the researcher might be more important than anonymous promises of confidentiality: "more serious or intimate topics might necessitate either other measures to gain trust […] or, contrastingly, call for establishing a professional distance" (Kaufmann/Peil 2020, P. 10). Both options are possible when developing a research design based on IM. Even though sensitive topics came up more often during interviews (face-to-face and phone) than in the dia-

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15   Original in French: "je me dis que vous êtes venue me donner, une tâche pour combler un peu mon vide".

16   Original in French: "mais sachez très bien que joindre les deux le travail, la maison, c'est chaud hein? je me demande comment les autres font. aidez moi. […] aidez moi avec des conseils. merci merci".

ries, the diaries served in some cases to discharge emotions after conflicts or experienced injustice, as in a case in which the participant wanted to disengage from her responsibilities after her co-worker bypassed her in order to embezzle money[17] (diary, 2020, WhatsApp).

Involvement of the researcher: This is a highly sensitive but crucial point. As we have seen above, IM allows for an immediate and often informal interaction between the researcher and participants. What are the implications of the involvement or absence of the researcher for the data produced? In an early experience using voice-mail technology for a diary study, Palen and Salzman argued that the involvement of the investigator is crucial for the success of a diary method (Palen/Salzman 2002, P. 88). Similarly, Herron et al. (2019) found that regular contact with the researcher rendered the diary entries richer over time. I would be more cautious about this argument, as it depends on the overall research methodology, ethical considerations, and personal values, how much interaction is wished for and, especially, how this interaction is considered in the process of data analysis. The main argument of Palen and Salzman was to keep motivation high and monitor the data collected. This, however, can be much easier through IM and may need less direct intervention of the researcher. As described in my case study above, I decided to limit my intervention in the diary process to a minimum, sometimes responding by encouraging words or emoticons. Nonetheless, WhatsApp diaries facilitated the monitoring of the process and an adjustment to the individual participant's situation, which proved crucial in conflict-settings. One of my research participants appreciated the closeness she felt between us thanks to her diary on WhatsApp. As her town went through difficult moments, she felt my 'virtual' presence as if I were just in the next accessible village[18] (post-diary interview, 2020, phone).

Anonymity/confidentiality: This leads us to the important and complex topic of confidentiality and anonymity. Even though these issues are not new to qualitative research (Boase/Humphreys 2018, P. 156), online tools demand special attention to certain issues. Manji et al. (2021, P. 775) found that most of health-related research using WhatsApp in sub-Saharan Africa lacked attention to research ethics despite the well-known privacy and data protection controversies around WhatsApp. Considering the lack of research on using WhatsApp as a data collection tool, the authors encourage researchers to systematically document and discuss how they used WhatsApp and how they considered ethical implications (Manji et al. 2021, P. 786).

Depending on the tool and technology used, it is possible to have anonymous participation (see Dawson/Einion-Waller/Jones 2020). Text-based IM favours greater confidentiality than audio messages, which can be less private as they can be overheard by others or voices of other persons can be captured in the recording (Williamson et al. 2015, P. 26). It is crucial, when using commercial technologies, to inform the research participants, that part of the control of data protection is out of the researcher's hands. To overcome these data protection challenges, some studies developed their own software for online data collection. However, this is not always possible because it demands a lot of financial resources, time, and competences (see Carter/Mankoff 2005; Kaufmann/Peil, 2020, P. 6; Twis et al. 2020). Besides, they might not be safe enough to limit the risk of state surveillance in some research contexts. In conflict settings with highly polarized standpoints and narratives, the anonymity of online methods could pose a disadvantage, leaving the researcher with less context information to critically assess and analyse answers and narratives provided by the research participants and

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17   Original in French: "le technicien qui a bouffé les 40'000 francs là. je vais lui remettre TOUS la gestion là, qu'il m'a chargé là, avec lui (..) et c'est fini. je lui ai remercié pour sa compréhension et j'ai coupé [le téléphone]. j'étais calé. j'était assise, un peu, découragée, bon".

18   Original in French: "on dirait même que tu étais à [dernier village accessible] pour m'appeler chaque jour".

the scholar may fall into the trap of legitimising simplistic narratives of the conflict (Käihkö 2020, P. 82).

In my own research I tried to discuss with each participant the specific aspects of confidentiality and privacy concerns when using either WhatsApp or a recording device. I also provided participants with mobile internet data to allow them to record the diary independently from their workplace to facilitate privacy. Nonetheless, some participants preferred to record the diary late at night in the radio station rather than at home where they had household chores and young children awaiting them[19]. A flexible approach is also key in order for the participants to adapt to the volatile and fast-changing surrounding. For instance, one of my research participants residing in a town heavily impacted by insecurity, explained that she was not able to record a voice message some nights due to gunshots being heard in the town increasing the fear of speaking aloud (diary, 2020, WhatsApp)[20].

Technical and infrastructural implications: Finally, technology develops at a fast pace and offers many opportunities, yet, technologies are not free from failures, including breakdowns of devices, loss or theft of devices, lack of network coverage or electricity to recharge batteries, and internet censorship. Manji et al. (2021, P. 786) propose researchers to make use of automated processes of IM technologies where useful; for instance, using automated reminders or surveys to be sent and programmed automatically. More important for qualitative, non-standardised methods, the authors call to consider barriers to technology and infrastructures beyond simplified notions of access to internet/smartphone, but to include aspects related to accessing relevant information and support (Manji et al. 2021, P. 787).

As the discussions above demonstrate, there are many aspects to consider when employing IM in qualitative diary research. And most researchers agree that it can best tap its full potential when embedded in a multi-method research design (Gruber et al. 2021; Käihkö 2020; Kaufmann/Peil 2020).

5   Conclusion

This paper presents the audio diary method as a qualitative data collection tool using new technologies such as IM. The literature on diary method is rich and dispersed in many research fields. Qualitative diaries can make use of new technologies to overcome barriers to participation and render research more inclusive and participatory. The discussion shed light on the opportunities and challenges of adapting traditional data collection methods to new technological, but also health- and security-related, challenges. The adaptability and flexibility of using IM for diary studies opens up novel approaches in regard to reach, temporalities, media formats, interaction between participants and researcher, but it also needs careful consideration of its ethical and methodological implications. The novelty of using IM as data collection tools requests a deeper reflection and more systematic and detailed descriptions of such research processes, particularly related to research ethics. Embedding IM audio diaries into a multi-method research design facilitates the participation of 'hard-to-reach' populations and increases access to in-depth qualitative data on everyday practices. Particularly in feminist and intersectional research, the possibility of balancing out the power relations be-

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19   Original in French: "j'ai choisi les heures que je suis un peu libre. desfois j'ai fais ça à la radio, desfois aussi c'est les 19 heures quand les enfants sont branchés à la télé pour (unverständlich) donc, je profite faire".

20   Original in French: "les coups de feu ont commencé, eh, à, à faire du bruits dans la ville de [la localité] donc je pouvais pas envoyer de vocal".

tween participants and researcher through these novel approaches provide new opportunities. As the example of doing research in Burkina Faso under conditions of security- and health-related constraints illustrates, the merging of online and offline methods can re-establish access to in-depth and rich qualitative data in remote areas. However, more research is needed to understand the impact of technologies on research data and process.

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