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"Whatsapping" the continuity of postpartum care in Switzerland: A socio-anthropological study

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ABSTRACT

Background: Digital media such as Apps, Internet and social networks have become integral parts of the maternity experience for more than a decade. These media can support or undermine women's experiences as has been shown in digital sociology research. Using Immediate Messaging Applications to provide information and support to women during the perinatal period is an emerging practice.
Aim: This article analyses how health and social care professionals – with a focus on community midwives – and women communicate between postpartum home visits through Immediate Message Applications in Switzerland.
Methods: A socio-anthropological study that relied on qualitative methods including semi-directed interviews with midwives and health and social care professionals (n = 30) and immigrant women (n = 20).
Findings: Since the introduction of Immediate Messaging Applications, women and their carer converse more regularly between post-partum home visits. Women send questions, pictures and videos to them, often allowing swift responses to their concerns. Midwives encounter difficulties answering women's questions when they cannot be solved through quick communication (e.g. infant crying). To them, texting frequency forms a clinical clue to women's mental health. Not all women contact their carer through digital messages; immigrant women are less likely to know and use this service.
Discussion and conclusion: Immediate Messaging Applications form a promising communication tool, complementary to home visits, and contribute to woman-centered care and continuity of care. As an emergent practice, it has not been framed by a guideline yet. Policy makers and practitioners should ensure that its use does not contribute to unequal access to care.

Statement of significance

Problem of issue
Digital media have become integral part of the maternity experience. Little is known about how women and health and social care professionals use Immediate Messaging Applications (IMA) between consultations.

What is already known
Women use an array of digital media to look for information and support during the perinatal period. Their experiences are contrasted. IMA seem promising for providing complementary services in-between consultations.

What this paper adds
Women and health and social care professionals – especially community midwives – communicate regularly through IMA when this option is made possible by professionals and institutions. This service helps solve common postpartum questions swiftly, however not always. IMA use is also revealing of women's postpartum loneliness. IMA is not used by all women alike and may contribute to inequity in access to health care.

Introduction and background: digital beings

This socio-anthropological paper analyses the digital relationships that health and social care professionals, in particular

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community midwives, and women entertain through instant messaging applications (IMA) such as the ubiquitous WhatsApp™ during the post-partum period.

As the sociologist Deborah Lupton has extensively researched [1], we have witnessed the emergence of a digital society for more than three decades, during which our lives, cultures and social relationships have become increasingly entangled with digital technologies [1,2]. In high-income countries, mobile phones, social media and apps have progressively entered most people's lives since 2007; allowing for social contacts to be created and maintained at a distance [1]. As highlighted in the work of the anthropologists Pink et al., analysis of how digital technologies intervene in social actors' lives needs to be undertaken within concrete social contexts [3]. Pink advises the avoidance of a conceptual and methodological separation between the digital and the supposedly "in real life" (IRL) interactions, for they are not ontologically speaking separated [3]. Communicating through digital media triggers social actors' embodied reactions such as thoughts, emotions and actions [3]. In a similar vein, scholars from the sociology of translation consider that technologies themselves do not have an impact on lives and events [4]. They have functioning features that offer a range of implementation possibilities and contribute more or less to their success. Social actors will then translate these technologies and their features into specific practices within their social contexts [4]. In that sense, the uses of digital technologies can reveal the features of a given sociocultural context such as the one surrounding the postpartum period in high-income countries.

IMA have started to attract the attention of health care providers for they are convenient to use and may allow swift communication between providers and women during the perinatal period [5–8]. Several studies have found promising results regarding the use of IMA for the following purposes: kindly reminding consultations to women [5–8], conveying information with regard to health during the perinatal period [5–9], complementing the care received during perinatal depressive episodes [5] or answering women's questions regarding their children's or their own health [8,9]. IMA interventions may be used individually between a health care provider and a woman [5–7] or within groups of peers [8,9] and has been explored in diverse settings including in low-income countries [6,8,9] or with women in complex situations such as adolescent mothers [8]. Promising IMA use during the perinatal period include a consideration for women's needs and preferences before establishing the content of messages sent to them [10] and offer two-ways communication that allow women to ask questions or express needs [5,8,9].

Despite these promising results, the critical perspective proposed by Deborah Lupton to analyse the features and uses of digital tools must be kept in mind for these tools may foster or interfere with the health and well-being of women [1]. Apps in general have been used to "nudge" women into adopting healthy behaviours for the sake of their child [11,12]; they function in a logic deemed neoliberal by social scientists, appealing to individual women's own sense of responsibility and diverting attention away from social determinants and the actions of policy makers [11,13]. This widespread tendency has limitations as not all women have the resources needed to fulfil society's expectations of them [11]. In the case of digital apps, including IMA, information may also not reach the women who are in the most vulnerable social situations or who have low literacy and e-literacy skills [14].

In contrast with the authors quoted above, our intentions were not to implement an intervention based on IMA use, but to describe and analyse from a critical socio-anthropological perspective [1,3] how IMA mediated communication is used spontaneously by some health and social care professionals with women. Preliminary explorations have shown that this practice has emerged in French speaking Switzerland during the postpartum period. IMA mediated communication between women and community midwives appears to complement the care provided during the postnatal period by these professionals. Our aim was hence to detail these practices in our study about immigrant women's use of ICT while including the different health and social care professionals that may be in contact with them during the perinatal period.

To contextualise our reflection, it is important to provide some information about the Swiss maternity care system. As in most high-income countries, 98% of births in Switzerland take place in the hospital [15]. In the public sector, postnatal stays in maternity hospitals have shortened from 6 to 2 or 3 days after birth since the 1980s. This evolution may be related to the introduction of the Diagnostic Related Groups system to finance health care in Switzerland in 2012, which allocates a payment per diagnostic category instead of per intervention or per day of hospitalisation [16]. Without advocating for longer hospital stays after birth, and while considering that postpartum hospital stays are still longer in Switzerland than in many other countries [17], we would like to highlight that these decisions were taken by hospital policy makers; women were not associated with them. In the Swiss health system, the shortening of the postpartum hospital stay has been compensated by the implementation of postnatal home visits made by community midwives. Women and families can receive up to 16 home visits from self-employed community midwives during the first 56 postnatal days for a first child or when in a complex situation, and up to 10 visits for the second child and beyond [18]. These visits are fully reimbursed within the compulsory health insurance scheme inscribed in the Swiss law LAMAL thus ensuring a close to universal service [18]. The mean number of visits was 7,5 in 2018 [19]. During these home visits, midwives check the physical health of both women and infants, and provide personalised support regarding breast feeding, infant care and mental health [20]. Nurses and social care professionals may provide additional services during or after this period. When families live in social distress, suffering from loneliness, poverty, poor housing, or lack of support in general, community midwives tend to provide additional tailored services [20]. They contact other professionals such as social workers, but also take direct action when needs are urgent [20,21]. In such cases, they may buy groceries or diapers, look for baby material or help with administrative procedures [20,21].

These changes in the organisation of maternity care have been introduced at a time when the importance of the postnatal period is increasingly recognised as key for the health of mothers and infants. Firstly because morbi-mortality largely occurs during this period [22]. The postnatal period is also a milestone in the experience of mothers and their partners, a starting point in the development of the relationship with their children [23]. Accordingly, postnatal mental health has been a growing object of attention for practitioners and scholars. Mothers, and fathers, may experience psychological distress including anxiety or depression during this period [23] and may suffer from loneliness [20].

In this context, the study of IMA mediated communication between women and health care providers as part of the support women may ask [24] and receive is important in order to understand women's experience of the postnatal period. As our study was primarily about immigrant women's use of ICT, our paper will not include the direct experience of Swiss women, a point discussed in the limitations.

Methods

The results presented here are part of a larger socio-anthropological study led from December 2018 to January 2020

in French speaking Switzerland and funded by the Swiss National Science Foundation (10DL1A_183123). The study main aims were to describe and analyse the ways in which immigrant women use Information and Communication Technologies (ICT) during the perinatal period in Switzerland. The study included three axes of exploration: ICT as means of looking for information about the perinatal period, ICT as means of communication within the transnational family, and lastly ICT as means of communication between women and health and social care professionals. The article reports the results of this third axis. With the aim of giving an overall picture of the role played by information and communication technologies (ICT) in the experience of immigrant women during the perinatal period, our research team (CC CK PP)[1] carried out an ethnographic fieldwork including a triangulation of methods and data [25]. We conducted semi-directed interviews (CC CK PP) with immigrant women (n = 21) and health and social care professionals (n = 30) including midwives (n = 14). As community midwives mentioned their frequent use of IMA with women, we recruited them until we reached saturation regarding this specific topic. We also conducted ethnographic interviews, collective interviews and participant observations with immigrant women (CC PP) to complete, compare and discuss the data produced by the semi-directed interviews. In this paper, we will present results drawn from the interviews with health and social care professionals and immigrant women, with a focus on community midwives and immigrant women.

The construction of our sample was purposive. We contacted several associations and public institutions that provide services to immigrant women during the perinatal period through email, and we asked about the possibility of recruiting health or social care professionals and immigrant women for interviews. When the recruitment was approved, we approached individual practitioners by email or telephone and provided the information documents for consent. Immigrant women were either approached directly by a researcher in a service facility used by them, or they were recruited by one of their health care professionals such as a nurse or a midwife. Particular attention not to interfere with women's access to health and social care was taken by each researcher. Interviews were planned on another day to allow women to reflect upon or withdraw their consent if they wanted to; two women withdrew their consent to participation without mentioning a reason.

Health and social care professionals in our sample were midwives, nurses, social workers and adult educators. Except for community midwives and one nurse, these professionals only cared for immigrant women and families. Midwives had a diverse clientele including a lower or higher proportion of immigrant families depending on the neighbourhood where they practiced. Therefore, midwives mentioned their use of IMA with Swiss and immigrant women. Immigrant women were recruited with the aim of building a superdiverse sample [26] including women from diverse nationalities and diverse social backgrounds so as to obtain an overview of the diversity of ICT use. Our aim was not to produce a culturalist analysis of how immigrant women use ICT as such approaches have been criticised in anthropology for stereotyping social actors' identities [26,27]. For interviews with women, the documents containing the information for consent were translated from French into 7 languages (Arab, Albanian, English, Farsi, Portuguese, Spanish and Tigrinya) chosen according to the current and local attendance of associations dedicated to immigrant mothers. When needed, interviews with mothers were conducted with the collaboration of an interpreter. During the collective interviews, either a midwife or an adult educator was present with the researcher to provide complementary questions and because women appreciated having a trusted person with them. On three occasions, individual interviews were conducted with the father also present, this option was let to the preference of women. Besides, several interviews were conducted with the presence of one or several infants and toddlers to facilitate the participation of women; this led to some interruptions in the course of interviews – to allow women to care for their children's needs – without causing trouble for the production of data.

The interviews were conducted in places that suited research participants and that guaranteed confidentiality, either in a closed room in one of the associations, in our midwifery school or at the participant's home if so wanted. The semi-directed interviews lasted for a mean of 63 min for health and social care professionals and 46 min for immigrant women. This difference in duration may be linked to the fact that health and social professionals are trained to be reflexive and may have had other opportunities to participate in research interviews. An interview guide was constructed for each type of participant; however, participants were also encouraged to follow their thread of thought by reformulations from each interviewer. The semi-directed interviews were recorded and transcribed after consent. Three women refused to have the interview recorded and one asked the researcher to erase the audio recording and to delete a segment of her interview that she found too intimate to share after second thought. The ethnographic interviews and participant observations were transcribed in a fieldwork journal. Interviews and field notes were carefully revised in order to maintain participants' confidentiality, especially when immigrant women had particular trajectories that could make them recognisable. When deemed necessary, we withdrew some details that could allow the recognition of women or professionals. This is also the reason why we present the participants of our study with their means and ranges of ages (women, professionals) or experience (professionals) in the results section.

The analysis of the data was conducted using the software MAXQDA™ and included a deductive and inductive approach of the analysis (CC CK PP). The deductive approach consisted of creating three main categories according to the research axes mentioned above. The research team then analysed the transcribed interviews and field notes with an inductive approach and created categories and sub-categories (CC CK PP). On several occasions, the team discussed and refined the categories to preserve the most relevant ones. Due to the COVID19 pandemic, our team has been unable to use restitutions as a method to confront and complement our analysis. The functioning of the associations and institutions in which the study was conducted were too deeply disturbed to allow such a process.

The research protocol was validated by the official local ethical committees (CER-VD/CCER-GE – Number 2018-02081). Informed consent was obtained from participants after a careful explanation of the research aims and procedures including the right to refuse or withdraw from the study. As validated by the ethical committee, women could choose between written consent or oral consent in the presence of a witness who was either a health or social care professional or an interpreter.

Our interdisciplinary research team included three women researchers: one anthropologist and midwife (PP, PhD, primary investigator), one anthropologist (CC, PhD) and one midwife (CK, PhD-stud). As PhDs in anthropology, PP and CC are trained and experienced in the realization and analysis of the different types of interviews and observations used in this research; CK had achieved an educational module in research methods including interviews and was supervised by her senior colleagues during the study. The specific composition of our research team allowed us to pay attention to women's needs and preferences, to professionals'

[1] Initials of the authors.

viewpoints and to keep a critical distance from the discourses and attitudes of midwives and the other health and social care professionals in our study.

Results

Study participants

Thirty health and social care professionals participated in the semi-directed interviews, including fourteen self-employed community midwives. The mean age of the professionals was 44 years old (range 33–59 years old), and the mean years of experience was quite high at 18 (range 5–35 years of experience). This can be explained as community midwives tend to start their carrier in maternity hospitals and several of the practitioners interviewed had required complementary qualifications for their positions such as, for instance, a diploma in counselling or reproductive health and contraception. The health and social care professionals included six social workers, seven nurses, two adult educators, one director of institution and the fourteen midwives.

As intended, the twenty immigrant women who participated in the semi-directed interviews form a superdiverse sample [26] including women with diverse social and educational backgrounds. In order to respect the women's privacy and sense of safety during and after our study, we did not directly ask for their legal status in Switzerland. Women with a diverse range of legal status participated, including women without a legal status, but due to this ethical decision we cannot describe the number of women with, for instance, a working or refugee status. The mean age of women participating in the semi-directed interviews was 30 years old (range 20–37). The median duration of women's stay in Switzerland was 2 years (range less than a year to 10 years for one participant). Twelve women were first-time mothers, five were second time and one third time; for two women this information was missing. All women with the exception of two lived with their child's father or were married. Eight women had a university degree, five women had an intermediary occupation such as secretary or social worker and seven women had not achieved a certification after school.

In this first part, we describe the use and absence of use of IMA mediated communication as expressed by health and social care professionals. As community midwives were the practitioners who used IMA with women the most and with the widest range of practices, special attention will be dedicated to these professionals. Other professionals were usually more reluctant to communicate between consultations or worked in institutions that advised against the use of IMA to answer women's questions. The professionals' reflections concern the use of IMA with immigrant women as well as with women considered non-immigrant by them such as Swiss or French women. In the second part, we describe the use and absence of use of IMA mediated communication by immigrant women only, due to the aims of our overall study, a point reflected upon in the discussion.

Uses and absence of uses of IMA mediated communication

Health and social care professionals' experience of IMA mediated communication with women

The health and social care professionals who participated in our study all use instant messaging applications (IMA) to communicate with women and families, however not on the same scale and with two distinct features. Some institutions and professionals use IMA two-ways: from women to the institution and the professional and from the institution and the professional to women. In this first case, professionals give their mobile phone number to women and allow them to contact their carer between consultations. Other institutions and professionals use IMA mediated communication only one-way from the institution and the professional to women and families. In this second case, institutions and professionals dedicate IMA to organisational purposes such as the arrangement of appointments. Our focus will be on two-ways IMA mediated communication.

As community midwives were the most regular users of IMA with women, their discourses are over-represented in the results. The nurses who worked in institutions that allowed the use of IMA tended to have similar representations and practices as midwives.

For community midwives in Switzerland, communication through IMA has become a part of day-to-day practice. First, IMA are used to organise midwives' postnatal home visits.

> *At one point every woman informs me that she has given birth and that she is planning to go back home. I ask them to send me a text message to allow me to get organised and plan the first home visit for the day after the discharge from the maternity hospital.* [Semi-directed interview (SDI) 4 Community Midwife (CM)]

Second, community midwives and less frequently other professionals use IMA to remain available between home visits or in-clinic consultations. They share their personal mobile number with women and suggest them to send a message or call if they have questions before the next visit.

> *Yes, yes, yes. I always show them my phone number « here is my phone number, you may call me". To all women.* [SDI 20 CM]

According to midwives, most messages sent by mothers through IMA concern the health of the baby, feeding practices, crying episodes or sleeping patterns. Mothers may attach a picture to their question.

> *It can be a question or a picture of something and she asks my opinion about it. [. . .] I get pictures of their baby's poo, of the baby's dry skin or toxic erythema. Milk crust sometimes, the umbilical cord bleeding a little bit after it fell off. Then a couple of questions. Is it normal? What should I do about it? Often, we still have an appointment planned, but sometimes [mothers] can't wait two to three days until the visit.* [SDI 15 CM]

Mothers may also ask questions about their own health.

> *Pictures of blood clots on sanitary towels. [. . .] Always the same topics come again and again. [. . .] But I tell them: "call me if you lose blood clots". Instead of calling, they send me pictures. And here with a finger put next to the blood clot [to show its size].* [SDI 21 CM]

In the examples above, newborns have benign and common conditions that nevertheless worry the parents. Professionals hypothesise that Swiss parents do not have much experience of infant care prior to becoming parents when compared with immigrant women.

> *Frankly, no [immigrant mother] has ever asked me how to [give the baby a bath]. [. . .] When I worked at the maternity hospital, immigrant mothers would just go ahead, they wouldn't ask: "how do I have to hold my baby". They probably have seen others caring for babies. In many countries, women have contacts with infants before becoming a mother. In Switzerland, some mothers have never touched a baby before having theirs. It's perturbing for them.* [SDI 16 CM]

IMA mediated communication is deemed helpful with regard to women's postpartum mental health.

> *Yes, I tend to find it helpful. If they hadn't sent the picture, I wouldn't have been able to reassure them. Like this, in two seconds. They might have had a bad night. [. . .] It's helpful because part of my role is to reduce anxiety. And this can also be done in between home visits.* [SDI 21 CM]

Midwives also see IMA mediated communication as a way of improving the continuity of care (CoC) provided to women during the postnatal period. In Switzerland, CoC throughout pregnancy, childbirth and the postnatal period has only been implemented in a minority of cases, usually for women opting for a birth outside a hospital setting. However, a shorter form of continuity is implemented through the postnatal home visits, usually done by the same midwife throughout several weeks.

I often finish my home visit by saying "we will see each other in a couple of days, but if there is anything in between you can call me". [. . .] "Or send me a message". [. . .] I find that it brings a lot of support to families. To have someone almost always available. [. . .] It helps women that are more isolated to feel less alone. It contributes to the continuity of care. [. . .] When you see a woman over four to six weeks, sometimes more, this communication between visits forms a sort of circle around the mother, a complementary presence. [SDI 25 CM]

Other health and social care professionals in our study mentioned immigrant women's loneliness as a salient feature of their social situation. In our sample and in line with our research objectives, loneliness was primarily a concern with regard to immigrant mothers; however, midwives considered that many women feel lonely during the postnatal period regardless of their national origin.[2]

The self-employed midwives we interviewed all used some level of IMA communication with women and families. The other health and social care professionals such as nurses or social care workers tended to be more reluctant to use IMA in between consultations; they had been advised against it by their employing institution or through their professional education. Overall, professionals who worked in smaller institutions such as associations were more prone to use IMA than professionals who worked in bigger institutions with more marked hierarchical structures.

In the case of midwives, IMA mediated communication may continue beyond the postnatal follow-up. Some women ask questions from time to time to their midwife. They also send good news such as pictures or videos of them with their infant or showing their infant achieving developmental milestones such as sitting, eating solid food or walking. These testimonies highlight the importance of the bond between midwives and families created through the CoC granted during the postnatal period.

Last week I got a message from a mother who told me: "Hey, I'm John's mother; I gave birth one year ago. I have a question". I was "Well ok". I really think that the link between midwives and mothers can be strong. In general and for mothers who had a harder time. [SDI 20 CM]

In some cases, IMA may facilitate the continuity of contact until the next pregnancy and birth.

I cared for this woman's first post-partum. Since then, we have kept in touch through WhatsApp™. So, she asked me to be her midwife for her second baby. She had moved out of my zone of work [. . .], but I did her follow up; you also do it for a woman [in her situation, a refugee]. [. . .] [We are still in contact; her] second baby is nine months old. [SDI 20 CM]

These testimonies may bring a form of closure to professionals, when families who were in difficult situations eventually thrive.

I think about this mother who had an unexpected pregnancy and who had been in denial for several months. Everybody was very worried about her. Here you see this picture [of the mother and her baby, sent by the mother to the midwife and shown to the researcher]. The picture is revealing. She looks so maternal, [smiling], discovering many new things and when I see her like this, I feel reassured. [. . .] She keeps in touch with me and sends news. [SDI 15 CM]

Difficulties encountered with IMA mediated communication

If community midwives tend to find IMA mediated communication useful to complement face-to-face care, they also encounter difficulties to address the questions they receive. First, not all situations can be solved or alleviated through text messages.

This is what happens the most: « he has been crying for half an hour and I can't calm him. What can I do?»[. . .] In such cases, you cannot really help with a text message or even a phone call, but it happens though. [SDI 25 CM]

Some professionals, often the ones who were already experienced when IMA were launched, find communication through IMA less clear or less valuable than in presence communication.

Before text messages [were invented], women would call us [. . .] It's easier to make a phone call [. . .]. It's difficult to explain everything with text messages. [SDI 5 CM]

As shown above, the questions parents ask through IMA tend to concern benign health issues – even if they worry parents genuinely – and can be addressed by midwives or nurses with little hesitation. However, some questions imply uncertainty; professionals may therefore worry about overlooking an infant's health issue.

It is difficult to answer sometimes. If a mother writes « she vomited milk », often it is just a slight regurgitation. However, you have to check because if she really vomits, it might be something else, not just regurgitations. So, I often take the time to call them, so we can talk and I can obtain more details to understand her question better. [SDI 26 CM]

Some professionals may also be wary of possible litigation actions against them for making errors while judging the health of a newborn through text messages, pictures or videos.

It's tricky. [. . .] A consultation done from a picture? What if the baby really has a problem; if something happens afterwards? [. . .] When I answer with a text message, everything is written. [. . .] Hence I answer them:«it is a little bit complicated to judge from a picture. At first sight, it looks like such and such, but I can't be certain». [. . .] When they send you videos of the baby breathing, I avoid answering with a text message. I call them. [SDI 21 CM]

According to participants in our study, few women had the possibility of communicating with their pediatrician through IMA. The convenient availability of midwives and the close relationship established through the continuity of care between them and women, seem to facilitate the emergence of unexpected demands to these professionals. They may receive messages late at night and during the weekend. Even if they are bothered by such demands, they see it as their duty to sort out situations that can wait from genuine emergencies.

Often, families contact me [late in the evening] for [questions that can wait]. [However], once a father contacted me at ten o'clock in the evening because his wife was depressed; he was worried sick. They eventually went to the pediatric emergency service [that can hospitalise a mother and her baby together]. She was feeling really bad. In such a situation I answered of course, I called the senior doctor, and I did my thing. [SDI 24 CM]

[2] Detailed examples about women's loneliness can be found in: Perrenoud, P. *Construire des savoirs issus de l'expérience à l'ère de l'Evidence-Based Medicine: une enquête anthropologique auprès de sages-femmes indépendantes en Suisse romande*, Doctoral Thesis, Faculty of Social and Political Sciences, Lausanne: Université de Lausanne; 2016. https://serval.unil.ch/resource/serval:BIB_A8B46DD35316.P001/REF.

The use of IMA in care is an emergent practice and it has not yet been framed by precise regulations in Switzerland. Hence, this practice still has blurred boundaries. The professionals interviewed cope with requests depending on parents' situations, but also depending on their own resources. Some parents who have little to no social support, such as new immigrants, may rely on health and social care professionals when faced with difficult or even urgent situations. If they speak French, English or another shared language with their carer, they may resort to IMA to contact them. In the case of midwives, requests may be for health issues outside the scope of their competences.

One Saturday afternoon, a mother sent me a video of her baby who was having a seizure. I was not available; I was with my kids [at the movies]. I could not download the video immediately as it was too big. [. . .] I told her I couldn't watch the video, but that she should go the emergency services if she was worried. [. . .] When I was finally able to watch the video, I saw it was serious. In the meantime, she had gone to the emergency services. [. . .] I tend to be the first person for everything, for things that are outside [of midwifery]. I am not a paediatrician; I would not be able to treat seizures, apart from advising to go to the emergency service. [SDI 4 CM]

Many parents seem to act as if midwives were their primary care giver in the Swiss health care system; a gatekeeper to other services which midwives are not officially. These practitioners cannot function as a primary care service 24/7 and in situations that require immediate care.

At the beginning, it was day and night. [. . .] Now I tell them they can write me or call me, no problem. I prefer that they contact me instead of remaining stressed. [. . .] However, I will not always answer at once. [. . .] I also give them the emergency service's number. They can be reached day and night, not me. [SDI 16 CM]

Differences in IMA use

Community midwives or nurses explain that not all women communicate through IMA or not on the same scale. Some new mothers – or fathers – send several messages daily. Other parents seldom or never use IMA mediated communication with their carer between consultations.

The frequent recourse to IMA is seen as a clinical clue that some parents may experience anxiety or may need more social support. For professionals, IMA use is related to parity and parental experience.

You never hear from certain [mothers]. They don't send any message between two consultations. [. . .] They are often multiparas, women who are not very anxious by nature and who may have more support by significant others. [. . .] Those who send me many messages are often mothers for the first time; sometimes expatriates [who speak English] without family here [and] who feel isolated. [Mothers] who feel lonely and suffer from anxiety. [SDI 21 CM]

According to the health care professionals who attended immigrant and non-immigrant families in our study, immigrant mothers whose mother tongue was not French or English communicated less through IMA with their carer.

Mothers who do not speak French at all, who do not read French, I mean WhatsApp™ [. . .] for them writing a message is complicated. [French speakers], they dare more, it's easier for them. They have a question; they do "tac-tac-tac", easy. [SDI 11 Pediatric Nurse (PN)]

As IMA mediated communication is not an official service in the Swiss health system, it is not reimbursed by the LAMAL insurance and it remains unpaid work. The frequent solicitation through IMA was especially time consuming for community midwives. As a result, not all of them reacted when some women did not send text messages to them, such as immigrant women who could not or barely speak French or English. In other words, French- and English-speaking mothers may receive an additional service through IMA, that non-speakers do not receive. However, midwives who frequently care for immigrant women, especially the ones who live under difficult circumstances such as asylum seekers, tend to compensate for this difference in the ability to use IMA with several strategies.

When [Immigrant mothers] call me or have someone else call me, it is to ask me to come and see them. Because I tell them if you call me and just say your name, if I don't answer and you get the voicemail, just leave me your name on the voicemail. [. . .] I will know it is you and I will come and see you the next day. Many of them don't dare to call as they don't speak French or English. Sometimes they ask someone to call for them. [SDI 16 CM]

Some of the health and social care professionals who specifically care for immigrant women and who also collaborate with interpreters, used this collaboration to engage in IMA mediated communication with women with the help of an interpreter. In our data this form of *trialogue* was mainly for organisational purposes.

Community midwives, nurses or educators, may also extend their usual role to countervail the social distress involving loneliness, financial strain, poor housing and sometimes violence lived by some immigrant women. These professionals look for baby materials such as nappies or cradles, translate and write letters, help complete administrative procedures, and access services, or direct families to associations that provide targeted support such as legal or social advice.

When a mother receives a letter she doesn't understand, I will explain to her [its] content. If a mother wants to enrol her child to the day care, which is easy for us [middle class French speakers]. You take the computer, two clicks and it's done. For immigrant families, it can be difficult to enrol their child as they don't understand the content of the website. So, I help them sometimes. I don't work strictly within my professional role. [SDI 11 PN]

In such cases, IMA mediated communications allow women to ask for additional help provided they speak French, English or another language spoken by the health care professional.

She doesn't feel confident enough to make the phone calls [in French] [. . .]. If she has to make an appointment with a physical therapist, and it's the answering machine, it frightens her. Then she asks me if I can make the call and I say [yes]. [SDI 20 CM]

Most health and social care professionals in our study claimed that IMA mediated communication was time consuming. Thus, many of them had mixed feeling about the practice and complained about the intrusion of text messages into their private life. If all community midwives used IMA in their practice, there were nurses or social workers who refused to use them for fear of being overwhelmed by requests from parents. Larger institutions such as hospitals and social services seem to frame IMA mediated communication more strictly. These institutions do not seem to allow their clients to send requests through text messages in the same way that smaller institutions such as associations do. However, these larger institutions, often connected to the state and to public services, or founded by the state, use IMA mediated communication to forward messages to clients. These messages, that several of the women and social care professionals showed us are reminders of appointments or, sometimes, important announcements regarding allowances. They were written in an impersonal administrative style without the usual polite greetings

and contained acronyms; both features that make them difficult to understand for non-French speaking immigrant women.

Health and social care professionals found that such text messages, as well as written letters, are stressful for immigrant women when they come from authorities. Adult educators pointed to us that many women have literacy problems and cannot decipher such messages alone, nor use a paper or digital calendar to remember appointments; they have to remember them by heart. One study participant had repeated difficulties remembering the dates of her appointments with health and social services. She missed several of them involuntarily during the fieldwork.

Immigrant women's experience of IMA communication with professionals

In this subpart, we present how immigrant women see their experience of IMA use or absence thereof with health and social care professionals. As mentioned above, our primary aim was to enquire about immigrant women's practices and needs of ICT, hence the absence of Swiss or French women's discourses in this part. During the interviews, women were invited to speak about the three subtopics of our research; they were usually more talkative about the use of IMA with their family than with health care professionals. In addition, some women did not have access to this service. Consequently, quotes below are less detailed than those from health and social care professionals.

In several instances, the experience of immigrant women regarding the use of IMA supports the representations of midwives and other health and social care professionals, but women's discourses also nuance and sometimes contradict the propositions made by these professionals.

As already noted by some of the professionals, immigrant women did not all use IMA to communicate with their carer. In three collective and ethnographic interviews involving a total of 40 women led in a centre where women with limited French proficiency take courses, none of the women had had access to IMA contact with health care professionals and none seemed to know about this possibility.

In the individual interviews, several women explained why it was difficult for them to use this form of communication. First, not all the women we met could read and it interfered not only with their capacity to communicate but also with their access to services in general.

When I met her, she told me that she cannot read. She explained how it is difficult for her to organise appointments; she cannot plan too many appointments in advance [because she has to remember their date and hour]. For the time being she does not communicate through IMA with the health care professionals who follow her. She told me that they have her number in case of an emergency. (Ethnographic interview (EE), field notes by CC, English speaking woman, originally from Nigeria).

Beside literacy, the impossibility of understanding French or a language shared with the health care professional was also mentioned by women as a barrier to communication through IMA.

As I don't speak French, it would have been difficult to communicate through text messages. And I didn't have the number of the interpreter. As I was often home, I didn't go out, I waited for the midwife's visit. From one visit to the next. There was no other communication possibility. (Semi-directed interview 15 (SDI), conducted in Dari through an interpreter, with a woman originally from Afghanistan)

Several interviewees used IMA communication with their carer, but as little as possible, as they paid attention to their carer and did not want to interfere with their private life.

I'm lucky. My midwife is available through WhatsApp. She told me I was very nice, because I didn't bother her with it. Of course, I didn't want to bother her. Just once, I could not find [some information] that was important to me. [. . .] I have many questions, so I note them on a piece of paper and ask them during the next appointment. I can also call the midwives' association or the maternity hospital. I know I can call her. I will not obsessively [call her to know what to do] because my baby cries for half an hour. [. . .] I imagine the professional who gets 10,000 text messages. In the midwife's or the pediatrician's position, you have consultations, you have many things, so I would only text if it's important. If my baby's poo has a different colour one day, I would wait for two other poo samples. (SDI 10, conducted in French, with a woman originally from Spain)

Other women or parents tended to communicate through IMA only on rare occasions as they did not feel the need to and felt that their infant was healthy.

Our midwife visited us pretty often, [. . .] so we did not need to [send pictures or SMS] between the visits a lot, because she was able to see if everything was fine. But yeah, everything was fine, so it's probably why we did not need much communication. (SDI 1, conducted in English with both parents, both originally from Russia).

The immigrant women who had access to IMA communication shared a common language with their carer. They either spoke at least a basic level in French or English. Some of them had had the possibility of finding a midwife who spoke Portuguese or Spanish. Some women preferred to send voice messages and others text messages depending on their ease with French, English, speaking or writing. Women who had access to IMA communication with their carer explained that they usually texted messages with regard to their infant's health:

Once he had some blood in his snot. It frightened me because he was so small. I wrote to my midwife through WhatsApp and she answered me at once. [. . .] My baby also has a mole on one of his testes. So I sent her a picture to ask if it is normal and she suggested that I show it to the paediatrician. [. . .] Then I asked her because he had very dry skin, she advised to put some cream. Sometimes, I sent her a voice message. One night he was like snoring, really loud. Was he sick? Did he have a sore throat? I was afraid he could not sleep. I sent the recorded sound to the midwife. She said that the sounds were normal, that I could relax, she advised me to take deep breaths. (SDI 7, conducted in Spanish, with a woman originally from Central America).

In some cases, women also texted about their own health.

I had a cesarean section and the scar became hard with, what do they call it at the hospital? An oedema? So, the midwife told me to take pictures of my stomach and to send it to her through WhatsApp as we didn't have a planned appointment. It's the only time I used WhatsApp. (SDI 9, conducted in French, with a woman originally from the Ivory Coast)

As professionals had pointed out above, women also connected their need for a closer relationship with health care professionals and for IMA communication to their little experience with infants.

I think that I was a little bit dependent on WhatsApp. I [also sent] quite a number of pictures. He is my first child and I don't know many things. I'm not used to caring for a baby. [I need] some experience. At the beginning when he is so small, so delicate, it's distressing. (SDI 7, conducted in Spanish, with a woman originally from Central America).

Women who already had children made comparison between their confidence with the first or subsequent child. In some cases, however not always, immigrant women also had a more stable

situation in Switzerland when they had their second child which contributed to their better experience. Some mothers also explained how they combined several sources of information.

If I have some questions, I will ask one of my friends who has two boys or my sister. If I have a difficult question, then I will ask my midwife Elisa[3] . After the birth [of my first child, I communicated a lot with my midwife], but [for the second] I knew certain things, it became easier. I sometimes write WhatsApp messages to Elisa. [. . .] I also took courses at the midwives' association. I met Laura there who is another midwife and a mother. She answered my questions too. She's a mother and has met so many mothers. (SDI 20, conducted in Farsi through an interpreter, with a woman of Kurdish origin).

Immigrant women shared a common experience of loneliness during their postpartum and many regretted the absence of their close ones, especially their mothers. Women who had felt the more intense need to contact their carer tended to miss their significant others more intensely.

My mother came to see me and stayed for three weeks. My baby was one month old when she arrived. She was an incredible help. She would take care of the baby at seven in the morning. She would tell me: "give me the baby and sleep a little longer". I was able to go out a little bit on my own too. [. . .] When she went back to [Central America] I felt so bad. So bad. I cried all day long. My baby felt it, that night he couldn't sleep. He felt that his grandma was gone, so sad. I'm just starting to get used [to her absence]. (SDI 7, conducted in Spanish, with a woman originally from Central America).

In some cases, midwives and a few immigrant women formed WhatsApp groups to maintain a connection throughout the perinatal period. This was only possible when they shared a common language. On rare occasions, we found that some professionals had formed WhatsApp groups including interpreters. This latter emergent practice seemed to be rarely in use and no woman was able to comment on it.

In general, women expressed satisfaction regarding the postpartum care they received and often spontaneously named the home visits of midwives as helpful. When they had access to it and felt the need to communicate through IMA, immigrant women found this mean convenient and satisfying.

My pediatrician gave me her WhatsApp number early on so if we have any questions we can WhatsApp her. If we have an issue, ask a question rather than being stressed about something. [. . .] My baby had like a secretion coming out of his eye and I sent her a photo. And she said to come by tomorrow to do a swab. I tended it with saline and breastmilk; it stopped on the next morning. So, I asked should I still come? She said no, just keep an eye on it. So useful. I don't have to call to make an appointment, go to the doctor, pay a lot of money for a quick question. [. . .] Really reassuring. (SDI 6, conducted in English, with a woman originally from New Zealand)

The use of IMA in between consultations forms an additional service provided by some professionals, especially community midwives. As an emergent practice, it seems helpful to women and the professionals who use it, adding to the continuity of care. However, as explained above this service is not equally distributed among women, one of the issues that will be further discussed below.

Discussion

In Switzerland, IMA mediated communication between families and service providers such as midwives has emerged as a bottom-up practice since the commercialisation and democratisation of mobile phones and IMA a decade ago. Women largely initiate IMA mediated communication with their carer, making IMA a potential component of woman-centred care [28] and continuity of care [29] including for women living their maternity in stressful social situations [8]. As often, human innovation emerges from practice and the affordances provided by social actors' direct environment [30]; in this case affordances consisted of the user-friendly features of IMA, which allow rapid and low-cost communication between social actors such as women and midwives or nurses. This form of communication is even suitable for women on a tight budget, who can send text or voice messages, pictures and videos to their caregivers, without additional cost, provided they have an Internet or WIFI connection. Every mother who participated in our study had a mobile phone and at least one IMA. On rare occasions, midwives notice women who involuntarily lack a mobile phone, and they see this as an alarming indicator of isolation and poverty. In such cases, midwives help women obtain a phone alongside other types of social support.[4]

The features of IMA alone do not completely account for their use in practice, for technologies do not have agency in themselves; they are translated into communities of practice by social actors according to the characteristics of each social environment [4]. First, midwives – but not other professionals in our study – relate the frequent use of IMA to the risk culture that influences representations and practices during the perinatal period [31]. For them, the multiple ways in which health care professionals apprehend risk may undermine the confidence of women. The apprehension of risks concerned the postnatal period and in particular the health of the newborn; a case of risk culture that has been less studied in midwifery and the social sciences than the case of pregnancy and birth. Women's questions mirror the information distributed during prevention campaigns. For instance, a leaflet containing pictures of the normal and abnormal colour of newborns' faeces has been added to the medical handbook kept by parents since 2009 [32]. This leaflet aims to enable specialists to intervene early in the case of the rare but severe condition of biliary atresia [32]. The pictures have captured the attention of parents as can be seen in the countless pictures of newborns' faeces sent to midwives. Interestingly, this preoccupation did not show significantly in a survey done to evaluate the reaction of a sample of parents to this information campaign [32]. A point that could warrant further enquiry given our findings. Similarly, the campaigns aimed at preventing sudden infant death syndrome may be mirrored in mothers' attention to their newborn's breathing patterns. In these cases, the content of text and voice messages questions how prevention campaigns influence the experience of new parents and may contribute to an augmentation of anxiety, indicating directions for future research.

Second, midwives and nurses also see text or voice messages sent by women as an expression of the loneliness experienced during the postnatal period. Confirming these hypotheses, studies in sociology of the family have shown that Swiss families adopt a nuclear form of organisation [33]. Intra-familial solidarity has declined over the years and family members are expected to be self-reliant and to cope independently with their ordeals [33]. For immigrant families living in Switzerland, loneliness may be induced either by similar cultural features or by the fact that family members live abroad and cannot spend the postnatal period in Switzerland [34]. Besides, the advice and the practices of women's own mothers may be considered as out-of-date by some women [35], making them reluctant to ask their mothers or other

[3] All first names in the paper are pseudonyms.

[4] For a comprehensive overview of actions undertaken by midwives to countervail social distress, see: (Ibid.)

experienced relatives for support during the perinatal period [35]. This reluctance may be fed by professionals who entertain negative stereotypes against older generations' knowledge [36]. Hence, in a cultural climate deemed neoliberal by social scientists [11,13], women are expected, and come to expect themselves, to conform to a specific moral regime [37]: they should be autonomous and rely on themselves rather than on social support. This moral regime of self-reliance does not take into account the vulnerability that accompanies many periods of life [38], such as the postpartum period. Neither does it take into account the diversity of social situations that may impede self-reliance [11]. The numerous messages sent to midwives and other professionals further questions the sustainability of such a moral regime of autonomy. In this context, it is no wonder that women contact midwives often and ask questions about newborns' pimples, *milium* or dry skin, all benign and common skin features of newborns. Hence, when some women send more text or voice messages than average, midwives tend to interpret this situation as a clinical indication of loneliness, anxiety and a need for more support. In this sense, they acknowledge a need for interdependence through their discourses and practices to counteract the current neoliberal moral regime.

Immigrant women in our study also highlighted their experience of loneliness. They explained how they missed their family, particularly their mother and female significant others. Several of them shared that they felt insecure as they had had little opportunity to care for infants prior to being mothers; they lived their maternity with little to no social support other than the midwife's visits [20]. As also shown by other authors, women needed information about their child's development and health [9,10] and support either from peers [9] or professionals [5,8,9]. Importantly, these women contradicted the stereotype that several midwives and nurses held about immigrant women who were seen as "natural" and spontaneous mothers; leading some of them to underestimate immigrant women's needs.

Immigrant women's access to IMA mediated communication was uneven. Women who were able to write either in French or English could usually communicate with midwives or nurses when they needed to. One of the midwives' associations in which we conducted our study also organised for Portuguese or Spanish-speaking women to have their home visits done by a midwife who could speak their language, thus also allowing the use of IMA between consultations. Despite these arrangements, when asked about differences in IMA use, midwives consistently remarked that immigrant women did contact them less through IMA than Swiss women, with the exception of women considered to be expatriates who had a higher education and a relatively affluent social situation.

This difference in access to IMA was confirmed during the collective and ethnographic interviews that we held with immigrant women; many women tended to ignore the possibility of reaching their midwife or any other health care professional with IMA, sometimes even when they spoke some English or French. Some of them lacked the literacy and e-literacy skills to use IMA for communication about their health or that of their baby. Nevertheless, immigrant women who had the possibility of using IMA with their midwife were satisfied with that possibility. For them, IMA mediated communication maintained a continuity in the relationship with their midwife and fostered a sense of belonging in their new country as they saw midwives not only as carers, but also as acquaintances. These elements confirm the risk well detailed by Veinot et al. [14] that implementation of informatics interventions may worsen both inequal access to care and health outcomes.

The midwives interviewed reacted differently to the uneven use of IMA mediated communication by women in between postpartum home visits as IMA is a semi-voluntary benevolent service. As a result, these practitioners did not always react when some women did not contact them through IMA, so as to protect their work-life balance and health. Other midwives, especially the ones in regular contact with immigrant families and families living under social distress, compensated for the difference in IMA use. These practitioners may offer more frequent or longer home visits and take the initiative to contact women when worried about their situation. In a previous anthropological fieldwork that enquired about the experiential knowledge-making of community midwives,[5] these practitioners also showed how their intention was to find a balance between intervention and respect for women's agency; allowing some time to pass before contacting women they were worried about, to let these women take the initiative of making contact as much as possible. The same sub-segment of midwives were also more prone to expand the scope of their practice by running errands and helping women with administrative tasks or by entertaining long term relationships with women in vulnerable situations including cases of gender based violence [20]. In addition, one of these midwives created postpartum meetings for immigrant women in a poorer neighbourhood to prolong the access to services, care and positive relationships after the home visits [39]. The women who benefited from such tailored care expressed their gratitude during our fieldwork. One of the participants said, for instance, that these meetings provided a safe space where she did not need to feel afraid, contrary to many other instances in her life. These examples show that woman-centred care may need midwives' social engagement and creativity to meet women's actual needs. They also highlight that if the continuity of care(r) from the onset of pregnancy to the postnatal period is seldom guaranteed in Switzerland, it is ensured during the postnatal period.

In Switzerland, as in other high-income countries, immigrant women and infants suffer from a higher morbidity and mortality rate [40,41], and poorer mental health [42,43]. Studies conducted in neighbouring countries and abroad, indicate that these differences in outcome are partly due to differences in care [44]. IMA mediated communication may seem a trivial form of telemedicine, however it was considered useful by the immigrant women who had access to it as well as by the health care professionals. Thus, the apparent difference in IMA mediated communication between Swiss, expatriate and non-French or English speaking or poorer immigrant women forms another layer of Inverse Care Law [45]; IMA mediated communication is provided less to women who need more care. This is worth the attention of professional associations and other policy makers as the role of telemedicine may increase in the future [14] and will also concern reproductive and midwifery care, particularly during and in the aftermath of the COVID19 crisis.

Some institutions discouraged the use of IMA between health and social care professionals to address women's needs. Paradoxically, these institutions were more prone to use IMA to convey messages to women such as appointment reminders and, surprisingly, official decisions regarding allowances. For non-French speaking women, especially women with literacy problems, written reminders sent through IMA in a cryptic format may not be an ideal mean of communication. Such emergent practices may reassure professionals and institutions that they have done their share to ensure that women come to their appointments. However, our study suggests that such impressions may be misleading. Imposing digital instead of direct communication has been a preoccupying and emergent feature of contemporary health and social care systems since the inception of telemedicine

[5] See: (Ibid., p.251–252).

technologies [46,47]. The recourse to digital relationships between users and health care professionals appears to be a by-product of the centralisation of hospitals and services, implemented to contain costs by limiting access to direct contacts [47]. In the situation described in this article, the imposition of digital communication remained limited, nevertheless it was deemed stressful by all actors interviewed. As missed consultations are significant indicators for augmented morbidity and mortality [48], these new practices demand closer attention in practice and research. Women in vulnerable situations such as non-French speaking immigrant women need tailored information to ensure that they receive the care they need.

Studies that have examined the use of IMA by health care professionals also reflect upon data security [8]. Until recently the very popular WhatsApp™ was considered safe as the data were encrypted [8]. As shown by the recent change in this IMA policy, encryption and data protection may be lifted under diverse circumstances, such as the decision of a company or the law of individual countries. The Swiss Federation of Midwives had expressed preoccupations regarding the temporary guarantee offered by companies that commercialise IMA such as WhatApp's™ and had advised against its use between women and midwives apart from organisation purposes. As IMA mediated communication tends to be wanted [24] and initiated by women, this objective may be difficult to achieve. In addition, and as our article shows, IMA mediated communication seems to satisfy women and discarding its use does not seem to be a woman-centred option. Nevertheless, data security remains one of the concerns regarding IMA use between health and social care professionals. The feasibility of migrating these communications to safer IMA should be explored.

Lastly, IMA mediated communication does not pertain to the services recognised in the Swiss insurance system for self-employed midwives or nurses and results in unpaid work together with the errands that these professionals feel compelled to run for women who live in social distress [20,23]. In our study, midwives considered IMA mediated communication to be stressful at the beginning of their self-employed career; and tended to find it manageable later in their working experience by using an array of strategies. Nevertheless, added to an already busy schedule, to the also unpaid administrative work necessary to the organisation of interprofessional collaboration [23], this additional unpaid work should not be underestimated. The proportion of midwives who suffer from professional burnout is quite important, even if this proportion is difficult to measure [49]. The workload, the care for families in complex situations and insufficient pay are all considered as factors that can contribute to professional burnout as a recent scoping review showed [49]. The continuity of carer, highly valued by the self-employed midwives in our sample, constitutes however a protective factor [49].

Limits of our study and further developments

Our study has several limits that prevent a comprehensive analysis of IMA mediated communication between women and their caregivers during the perinatal period. First, as the focus of our socio-anthropological study was immigrant (expectant) mothers' relation to ICT, our data do not include interviews with Swiss women. Further exploration of IMA mediated communication between caregivers and (expectant) mothers are therefore needed to appreciate how this emergent form of care intervenes in the experience of Swiss women. However, the experience of immigrant women should not be considered essentially different from Swiss women as the deconstruction of culturalism in anthropology has shown [26,27]. For instance, immigrant women share about their uncertainties regarding their experience as first-time mothers. Second, some of the immigrant women were recruited through their caregivers, a method that may put undue pressure on women if not used with utmost caution. Our research team carefully explained women's rights not to participate in the study, without consequences for them, and paid careful attention to women's reactions and comfort. Third, as the timeframe for our study was short, a circumstance inherent to the call for projects we responded to, we did not plan to collect quantitative data to complement our qualitative research plan. Future studies about the use of IMA mediated communication should collect data about the number of messages, the frequency of specific contents and the differences between frequent and infrequent users of IMA mediated messages in-between consultations. It would also be relevant to explore the use of IMA mediated messages in other area of medicine and care as well as in other countries.

Conclusions

IMA mediated communication between women, midwives and other health and social care professionals, appears as a promising emergent practice that could contribute to woman-centred care and continuity of care, especially as women wish [24], appreciate [5,8] and often initiate this communication themselves. As an emergent practice, IMA mediated communication has not yet been framed by comprehensive recommendations from professional associations and other policy makers [50]; the scope of its practice is thus practitioner and institution dependent. IMA is hence not officially part of the services provided by community midwives or nurses in Switzerland; therefore, it is not reimbursed within the compulsory insurance scheme LAMAL and remains unpaid work to the day. This situation may contribute to unequal access to IMA services by women during the postpartum period, as the professionals do not always react to some women's lack of engagement with IMA mediated communication. Quantitative and mixed methods studies are needed in order to measure the differences in use of IMA mediated communication between subgroups of women, as well as the countervailing measures undertaken by midwives and other health or social care professionals. A complementary qualitative research with Swiss including French-, German-, Italian- and Grischun-speaking women – the official Swiss languages – would also be needed to enquire about these women's experience of IMA mediated communication with their carer. Last, midwives adopted IMA mediated communication as a complement to the face-to-face visits they made with women. As IMA and other forms of telemedicine have been increasingly used since the COVID19 pandemic, this stance is important to keep in mind when reflecting on policy during and in the aftermath of the pandemic.

Authors' contributions

PP designed the study, CK performed the literature review prior to the study, PP, CC and CK produced and analysed the data, including the revision and discussion of the coding. PP wrote the first version of the manuscript; PP, CC & CK edited the manuscript. All authors have read and approved the article prior to submission.

Ethics approval and consent for participation

The research protocol was granted approval by the competent ethical commissions in Switzerland (Project 2018-02081 CER-VD Lausanne Switzerland and CCER-GE Geneva Switzerland). Participants were informed of the objectives and procedures of the study, when necessary, with translated documents and an interpreter, and gave their consent to participation.

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Conflict of interest

None declared.

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