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Social innovation in access to healthcare: community-based health insurance among Senegalese migrants in Spain

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Abstract

Background In several European Union countries, undocumented migrants face significant barriers to accessing universal healthcare. In Spain, Royal Decree-Law 16/2012 introduced restrictions that limited undocumented migrants' access to healthcare services, offering only emergency, maternal, and paediatric care. The implementation of this law created significant disparities in access to healthcare across regions. Although the law was later amended and some regions introduced alternative programs to restore access, disparities in healthcare access remain. This study aims to analyse the contribution of Community-based Health Insurance (CBHI), developed by migrant organisations, to improving healthcare access for Senegalese migrants in Spain.

Methods We conducted 28 in-depth interviews and one discussion group across various Spanish localities between 2019 and 2022 to examine how CBHI influences healthcare access among Senegalese migrants. Using purposive sampling, we ensured diversity in participants' administrative status, sociodemographic profiles, and employment situations. Grounded theory was employed to analyse the data, focusing on the social innovation and organizational dynamics of the *tontines*, as well as the role migrant organizations play in facilitating healthcare access through these solidarity-based financial mechanisms.

Results The findings show that CBHI has emerged as a socially innovative, collective response to unmet medical needs. Through the mobilization of community funds, Senegalese migrant organizations have filled gaps left by the public and private healthcare systems, offering a crucial alternative for those excluded from formal services. Our findings also highlight the rise of transnational healthcare trends, as community insurance funds are allocated not only for healthcare in Spain but also for return and care in Senegal. This dual focus demonstrates the importance of these grassroots microfinance initiatives in enhancing healthcare access for migrants.

Conclusions CBHI through *tontines* represents an essential community-led solution that enhances healthcare access for undocumented Senegalese migrants in Spain. Migrant organizations serve as key intermediaries, using solidarity-based microfinance models to bridge healthcare gaps left by restrictive policies. These initiatives demonstrate the capacity for grassroots innovation to address structural barriers to healthcare access in both destination and origin countries, providing a model for other migrant communities facing similar challenges.

Keywords Public Health Insurance, Social networks, Community-based Health Insurance, Migration

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Background

Private and public healthcare financing systems for undocumented migrants vary widely from country to country in the EU and even within regions or states of the same country [1]. Lack of legal migration status is a major barrier to accessing health services, as many governments prioritise healthcare for citizens and legal residents [2]. A case in point was the cessation of universal health coverage in Spain since Royal Decree-Law (RDL) 16/2012, which excluded undocumented migrants from access to all health services, except for pregnant women, children, and emergency care. Although alternative programmes were put in place in certain autonomous communities to continue providing access to the health system for undocumented migrants, the restrictions of RDL 16/2012 contributed to profound health disparities, as undocumented migrants were often forced to forego necessary medical treatment, preventive care, and routine check-ups for fear of detection and deportation. One of the first objectives of the new government that took office in July 2018 in Spain was to reinstate universal health coverage. While the resulting changes improved access to healthcare, they still did not restore universal healthcare coverage in Spain. RDL 7/2018 was implemented in September 2021 by the Spanish Congress and has become a major political issue, given the widespread trend in Europe and beyond to deny universal health coverage to undocumented migrants. At the same time, access to private health insurance is largely inaccessible for this population due to its price as well as administrative barriers. At the international level, the most prominent barriers to access and use of health systems by migrants are cultural differences, language, the residential area where they live, their working conditions, fear of deportation or lack of knowledge of the system among newly arrived migrants [3, 4].

The Senegalese migrant community in Spain has grown steadily since the late 1990s and early 2000s, particularly in regions like Catalonia, Andalusia, and Madrid [5]. According to the National Statistics Institute [6], there are 86,830 Senegalese in Spain, making it the largest Sub-Saharan nationality in the country. Notably, men comprise almost 79% of this population and 87% are of working age. Many Senegalese migrants work in sectors such as agriculture, construction, and services, often facing unstable employment conditions. A significant portion of this community remains undocumented, exacerbating their vulnerability to healthcare exclusion [7]. In addition, newly arrived migrants face difficulties accessing public healthcare due to the 90-day residency requirement needed to obtain a social security number, leaving them without full coverage during their first three months in the country.

In the absence of formal systems capable of providing healthcare financing to undocumented migrants, this group relies heavily on informal mechanisms such as Community-based Health Insurance (CBHI). It has been described in the literature as a mechanism that may improve access to healthcare, especially among vulnerable social groups [8]. The recently published study by Diop (2022) [9] was, to our knowledge, the first research that detected and analysed the development of CBHI within Senegalese migrant organisations abroad offering healthcare assistance to undocumented migrants. The present study, based on a qualitative research design, aims at analysing the contribution of CBHI to Senegalese migrants' access to healthcare in the context of Spain. Firstly, we address the unmet healthcare needs in the studied population and the development of CBHI as a response to the existing lagoons in health coverage. Secondly, our research explores grassroots social innovation in healthcare and the emergence of CBHI as an extension of *tontines*, which are saving associations enrooted in the history of Senegal and West Africa. Finally, we examine the organisational characteristics of these associations as well as motivations that stand behind the adherence to CBHI.

Tontine-based CBHI

Tontines, also known as Rotating Saving and Credit Associations (ROSCAS), have been discussed in the academic literature for their important role in collective savings and financial support mechanisms in many African countries, including Senegal. These associations are built around the concept of communal pooling of resources, where members contribute regularly to a common fund. This fund is then distributed cyclically among participants, providing them with access to lump sums of money at different intervals [10]. The primary purpose of these *tontines* is to serve as a form of mutual aid and social protection, ensuring that members have financial support for various needs, including ceremonies, education, and emergencies. Senegalese *tontines*, in particular, are grounded in strong social ties, often based on family, clan, religious, or professional affiliations. These groups function as local associations that provide everyday assistance to their members, such as financial aid during life events or communal support in times of crisis. The social bonds within these groups are crucial, as they create a foundation of trust and reciprocity. Unlike formal financial systems, which are based on contractual agreements and regulated by external bodies, *tontines* operate on informal agreements, often relying on oral commitments and the integrity of the group members [11]. This

strong social foundation differentiates them from the formal sector, enabling them to serve as an effective tool for social protection. Recent research highlights the adaptability of *tontines* to serve as a CBHI model, particularly among Senegalese migrants in Spain [9]. In this innovative approach, community members pool their resources into a common fund, which is then utilised to cover healthcare expenses for participants, family members, or members of the community. By evolving into a CBHI model, *tontines* address one of the most pressing challenges faced by vulnerable populations, access to affordable healthcare. What makes *tontine*-based CBHI unique is its alignment with the principle of solidarity. As participants share the financial risks and benefits, members who require less medical care support those with more significant healthcare needs. This not only fosters a sense of community but also helps mitigate the financial burden of unexpected medical expenses. By promoting communal responsibility and resource-sharing, *tontine*-based CBHI has the potential to extend healthcare access to populations that might otherwise lack adequate coverage.

Methods

Study design

Due to the exploratory character of the study, it is based on a qualitative research design. To our knowledge, it is the first research that offers an in-depth analysis of CBHI among Senegalese migrants abroad. The contents of this paper build on the pilot study conducted by Diop (2022) [9] in Granada and are based on subsequent research in which we refined the initial interview guide, amplified the sample and widened the geographical scope of the pilot study. In order to capture the characteristics and evolution of CBHI, which had not yet been described in the literature, we applied in-depth interview and discussion group as the main techniques of data collection. All the names of the participants which appear along the quotations included in the paper were changed to ensure their anonymity. The research has obtained ethics approval by the Ethics Committee of the University of Granada (1038/CEIH/2020). It forms part of a larger study that combines qualitative and quantitative strategies and whose main aim is to analyse access to healthcare of Senegalese migrants in Spain. In this paper, we offer an incursion into the origin and main forms of functioning of CBHI among Senegalese migrants which could not be captured using solely quantitative strategies, although such exploratory results can subsequently be used to inform the construction of economic models [12].

Sampling

All the participants of the study were of Senegalese nationality and were affiliated to three different *tontine*-based CBHI. This research applied purposive sampling strategies. We first contacted the *tontine* in Granada, where the pilot round of interviews and a discussion group were conducted. We aimed at obtaining maximum diversity within the sample thus seeking heterogeneity in terms of socio-demographic profiles, administrative status, labour market insertion, and migratory trajectories. To capture different experiences of participation in *tontines*, we recruited members of different duration of their adherence to the organisation, as well as those who received and did not receive funds from it. We paid special attention to factors that may contribute to social vulnerability, ensuring the participation of undocumented migrants and individuals who work in the underground economy. Snow-ball strategy was implemented to find and recruit subsequent participants whose profiles were needed to fulfil the objectives of the study.

The interviewed participants provided us with further contact data on *tontines* in other parts of Spain. We attempted to cover the widest territorial area possible to detect the extension of CBHI among Senegalese migrants in Spain, as well as diversity in terms of *tontines*' functioning. The study was, thus, conducted in two phases. First, the pilot study took place in Granada, where we first detected CBHI [9]. In the second phase, our goal was to obtain a more in-depth knowledge of the main aspects of *tontines* and to widen the geographical scope of the research by including two others *tontine*-based CBHI in other localities: one in Manresa (Catalonia) and one in Zaragoza (Aragón). Figure 1 shows the location of the studied organizations:

Data collection

The first phase of the research, which took place in October and November 2019, has previously been published [9]. The second phase of the research was conducted between April and October 2022. Altogether in both phases of the study, twenty-eight in-depth semi-structured interviews were conducted, along with one discussion group. The interviews took place in diverse locations and settings: homes of participants, *dahiras*[1], and other locations chosen by the interviewees. Their average duration was 45 min (range between 31 and 60 min), whereas the discussion group was one hour and a half long. After having received information about the project, all the participants signed the

[1] The majority of the Senegalese population belongs to Sufi Muslim brotherhoods. The term "dahira" refers to the basic organizational units of these brotherhoods. Dahiras, which can be seen as local religious associations are also reproduced in destination countries of Senegalese immigration. They tend to have a physical location so that their members can gather for religious meetings and other activities relevant for the local community.

Fig. 1 Geographical locations of the analysed *tontines* (Granada, Manresa, Zaragoza)

informed ethics form. Thanks to the fact that the main researcher is a native speaker of Wolof, both the interviews as well as the discussion group could be conducted in the mother tongue of the participants. This proved to be an invaluable asset, among other, since it facilitated the introduction into the studied organizations and the subsequent development of fieldwork. The participants were able to express their views and experiences without language barriers and we could capture linguistic nuances linked to the terms used to describe *tontines* and their functioning. The interviews were audio-recorded, translated, and transcribed so that their contents could be analysed by non-Wolof speaking members of the research team. Although participant observation did not form part of the original study design, settings that served to recruit interviewees were used to gather additional information. Field notes were collected to identify the key social relations within the associations as well as to design and improve the interview guide as in multiple *tontine* meetings and religious gatherings the issue of barriers to healthcare was addressed.

The interview guide that was applied was structured around six main themes and was adjusted to the emergent findings. It addressed: (1) history of migration and present situation of participants; (2) their state of health; (3) access to public and private insurance in Spain; (4) main sources of support in health; (5) participation in *tontine*; (6) experiences with healthcare since migration to Spain (Appendix 1). Such a wide formulation of the interview guide aimed at reconstructing the context in which adherence to CBHI takes place. The main categories that guided the analysis of these factors included flexibility of the *tontine*, affiliation process, identity, religion, solidarity, collective values and non-health related benefits. Through the discussion group we aimed at capturing the experiences with CBHI of migrants who are characterised by relatively high levels of social vulnerability. Each participant also responded to a brief questionnaire which enabled us to gather information on their socio-demographic profile.

Data analysis

Grounded theory procedures [13, 14] were used as a general framework for the inductive analysis of the collected data.Atlas.Ti software was applied to code the transcribed material. The interview guide was modified during the research to respond to themes captured through the analysis process. Initially, the coding process, especially in the pilot phase of the study, was as open as possible to capture the whole spectrum of meanings conveyed in the transcripts. As the research progressed and through constant comparison of the emerging hypotheses with data [15], the codification became more selective and refined. Through the combination, disaggregation, and redefinition of the existing codes as well as identification of the new ones, we could gradually elevate the level of abstraction of the emerging findings. The evolving concepts as well as the relationships among them were discussed and reviewed by both authors throughout the research aiming at the reduction of individual bias.

Results

Characteristics of the sample

Table 1 summarises the socio-demographic profiles of the participants. A total of 9 women (32%) and 19 men (68%) participated in the in-depth interviews. Only 2 participants of the interviews were 65 or older (7%), whereas the remaining 26 (93%) were between 18 and 64 years of age. In terms of labour market insertion, 5 participants were unemployed (18%), whereas 20 (71%) were employed at the time of the interview. In terms of administrative status, 10 (38%) were in irregular administrative situation at the time of the interview. Additionally, half of the interviewees had no formal education.

CBHI as a response to unmet healthcare needs: legal vulnerability and transnational tendencies

The central theme identified within this research is that there are unmet healthcare needs among Senegalese population abroad which are being responded to by CBHI. The three *tontines* examined in this study are heterogeneous in terms of the range of services provided, membership criteria or history of their evolution. However, they share a series of common traits that will be explored in this paper. The CBHI developed as an addition to structures created in the first place to repatriate the deceased members of the Senegalese community to their home country. The most developed *tontines* provide a whole range of services, such as paying for the plane ticket for someone to accompany the corpse and offering a donation for the family of the deceased. The money may also be sent to the country of origin to cover the burial costs if a close relative of a member dies in Senegal.

The development of *tontines* focused on repatriation is, at least, partly a response to economic cycles and changes within the labour market. Participants manifested that during periods of financial stability, migrants were able to collect funds informally when emergencies occurred. However, when the economic crisis of 2008 hit the labour market, the communities' needs could not be fulfilled in this way anymore.

> *"We are not in our country, and we don't know when we will come back (…). Before, when somebody (…) died or had health issues, we used to ask*

Table 1 Participants' characteristics

		In-depth interviews	Discussion group
Sex *n, (%)*	*Female*	9 (32)	2 (20)
	Male	19 (68)	8 (80)
Age *n, (%)*	*18–29*	3 (11)	2 (20)
	30–44	14 (50)	3 (30)
	45–64	9 (32)	3 (30)
	65+	2 (7)	2 (20)
Administrative status *n, (%)*	*Regular*	18 (64)	2 (20)
	Irregular	10 (36)	8 (80)
Labour market insertion *n, (%)*	*Employed*	20 (71)	8 (80)
	Unemployed	5 (18)	0
	Retired	2 (7)	2 (20)
	Student (%)	1 (4)	0
Education *n, (%)*	*No formal education*	14 (50)	6 (60)
	Primary	2 (7)	0
	Secondary	9 (32)	4 (40)
	Tertiary	3 (11)	0

for 30 euros. Before people participated whenever we asked, but then the crisis [hit] and we weren't getting the quantities that we needed to repatriate or help (…), so we decided to create this tontine" (Lamine, Granada).

This stimulated migrants to establish organisational structures which could ensure immediate availability of funds whenever there was an emergency. In the previous system of improvised money collecting, this was not possible and extended periods of time, needed to gather sufficient funds, separated the emergency from the moment of response. Today participation in *tontines* provides migrants with immediate access to the services offered by these organisations.

"When we first started, we only contributed 10 euros a year. So, we only did one thing, if someone died, we paid for taking them to [Senegal]. Then we went up to 25 euros (…) and provided funds for undocumented immigrants who needed to go to the hospital. We always try to help you get public insurance first, but sometimes it takes a lot of effort. Now they ask for a lot of papers everywhere. The tontine can also cover the expenses of treatment in Senegal" (Habib, Granada).

Tontines' operations in Spain are mainly a response to legal vulnerability faced by many migrants who cannot access public healthcare. This is, for example, the case of recently arrived migrants who have not obtained their social security number yet as during the first three months upon their arrival, migrants do not enjoy full healthcare coverage. Some also encounter problems when it comes to proving their residence to the authorities. Private insurance also is out of reach of the majority due to its price and, to a lesser extent, bureaucratic obstacles, such as the requirement to provide a passport.

It is important to emphasise that there are certain differences within the studied *tontines* when it comes to financing medical assistance. Depending on localization, CBHI facilitates access to healthcare in the destination country, in the country of origin, or in both. For example, in Manresa (Catalonia) according to the institutional discourse by the leaders of the *tontine*, the sanitary costs in the destination country are not covered by the organisation. However, even in such *tontines*, since decisions on who to help are normally taken on case-to-case basis, members who need help can always apply for support if they require it, as exemplified by the following excerpt:

"Me, my wife and children have social security. When they arrived last year I applied for it (…) It is a very long process (…) [Meanwhile] they didn't have the health insurance card (…) I took my wife to Emergency Services once because she had a very bad stomach ache (…) Two months later I received a letter with an invoice of 112 euros (…) [The tontine] gave me back the 112 euros I had to pay (…) I spoke about it through the WhatsApp group and everyone agreed that they had to pay me because if my wife were in Senegal they would also have to pay for her treatment" (Ali, Manresa).

Another fundamental obstacle for access to healthcare lies in the difficulty of registering in the Municipal Register, which is essential to access public services. Many migrants, particularly those in precarious living situations, struggle to register due to unstable housing arrangements, such as temporary accommodations in shared apartments. Many complain because there are individuals who earn money by demanding payment in exchange for providing the migrants who do not have permanent address with the documents required by the authorities. Again, CBHI serves as a tool to overcome barriers to access which are based on migrants' inability to register their residence in Spain.

"The main [obstacle to obtaining formal insurance] is to have a passport and registration to get the health card. It makes your headache and if you do not have someone to help you it is very complicated" (Cheikh, Granada).

"[The tontine] told me that since I didn't have health insurance, if I needed to go to the doctor they would pay for private hospital if necessary, and also if I needed to go to the emergency services I could go and I wouldn't have to worry if they send me a bill later (…) Also, if something happened to me or if I wanted to receive treatment in Senegal or if I die here, the tontine would take care of all this" (Awa, Granada).

Belonging to CBHI, contrary to other more formal forms of insurance, does not require any kind of documentation. In most cases, one simply has to start contributing economically and be accepted by one of the members of the *tontine*. Normally, migrants learn about CBHI from other migrants who are already affiliated, and it is them who introduce them into the organization. In times of emergency, the CBHI does not only offer assistance in monetary terms but also companionship when it is necessary to go to healthcare centres. Apart from medical assistance in Spain, CBHI is also used to seek treatment and assistance in the territory of Senegal. In this case, affiliated Senegalese who live in Spain and wish to seek treatment in Senegal may ask for *tontines'* help to pay for the return ticket. They may also be given a donation to seek medical assistance once they arrive in their home country or may be

asked to provide hospital and pharmacy invoices to be able to apply for *tontines'* coverage. It is most frequent among migrants who: (1) are terminally ill; (2) cannot work due to their physical condition; (3) require daily care but cannot obtain it in Spain; or (4) suffer from serious mental health problems. The first three situations are most common among elderly migrants. Many participants indicate that the desire to return to Senegal for health reasons is mostly motivated by the need to receive daily assistance and companionship, both of which are typically provided by family members in the home country. The return, in cases of terminal conditions, is also seen as a strategy to avoid body repatriation costs, which are a lot higher than the return ticket.

> *"The elderly have a really hard time here (…) because they are at home alone, they go to hospital alone. There is no one to help them (…) We [referring to the tontine] are going to pay for the [return] to Senegal of one elderly man and (…) his treatment there, because [in Spain] there is no one to take care of him" (Kalidou, Manresa).*

Sometimes the return to the home country is motivated by the desire to seek treatment using traditional medicine. This happens most frequently among those migrants who have serious medical conditions and who have not received satisfying treatment in the host country. CBHI is only mobilised when there is a serious medical condition that cannot be healed or improved in Spain. Once the medical options in the destination country are exhausted, migrants may desire to return to Senegal to try out traditional means of treatment. CBHI intervenes if they do not have enough resources to cover the costs of return.

> *"Many people think about traditional medicine when they have been receiving treatment for months and don't see any improvement (…) There are also other people who (…) when they are told by doctors that they have little time left to live, they prefer to return to their relatives. All of such [situations] are covered with financial aid by our tontine" (M'Baye, Granada).*

In some *tontines*, coverage may extend to selected family members. This is the case of Manresa as affiliated migrants can access CBHI funds to cover the costs of treating their family members in the home country. This applies both to hospital and medicine costs. However, it is important to highlight that this coverage is limited only to the closest family members and treatment of serious medical conditions that cannot be financed by migrants themselves.

Organisational context, membership, and geographical scope

CBHI in Spain emerges in the context of the deeply enrooted practice of microfinancing through *tontines* in the country of origin. The following extract illustrates diverse types of *tontines* that may emerge within the same social milieu.

> *"The tontine is a frequent practice here and in Senegal. We do it for many purposes. For example, those who work in the marketplace do a tontine in which every Sunday they collect money and every Sunday one of them takes it (…) to buy more merchandise (…) We [also] created a tontine (…) in which we only help people who lose their merchandise, when the police takes it away (…) In 2007, I and seven other people decided to create a tontine like the one we had for the merchandise so that we could help each other. The idea was truly applauded" (Ousmane, Granada).*

The *tontines* analysed in this research are based on collective saving mechanisms that enable the associations to collect money from each member in order to create a common fund. The money can be accessed only in cases of major emergencies, most of all deaths and health problems. The organisational structures among Senegalese can be divided into at least four groups: (1) religious organisations linked to Muslim orders; (2) national and ethnic associations; (3) origin-based organisations (formed by migrants from the same town or region); (4) *tontines*, which include small scale initiatives by friends or relatives, and medium scale organisations which may link migrants on the basis of their profession, origin, language or nationality.

CBHI membership criteria are defined most of all by the place of origin. Tontines differ in terms of the geographical criteria for participation. In some cases, for example in Granada, it is the Senegalese nationality that is considered to be the main prerequisite to access the *tontine*. In other cases, it is the common place of origin in Senegal that unifies the members, as is the case of the *tontine* in Aragón:

> *"Members of our tontine are from Ndiambour, which is in the region of Louga in Senegal. There are lots of us here in Aragón and in France. We participate independently of where we are. If you are from Ndiambour you can participate - we are all family and this makes it all easier" (Ismail, Zaragoza).*

CBHI tends to cut across religious boundaries. The participants of this research strongly emphasised that one can participate in the organisation independently of their religion. In spite of this, Muslim organisations

may strongly interact with *tontines*. They may be used to recruit members, announce important information that affects the community, or to gather funds.

> *"There are no ethnic or religious distinctions (…) We take advantage of [dahiras] to get people to come. We go to dahiras to ask their members to register [in the tontine]" (Ousmane, Granada).*

The geographical scope of *tontines'* operations tends to be limited to Spain and Senegal. When it comes to body repatriation, it is justified by the fact that *tontines* have to have a minimum level of familiarity with how the process works in order to be able to implement it. In the case of Granada, for example, the organisation already has contacts with public and private entities with whom they need to cooperate in case of repatriation. Since all the other functions of *tontines*, including health insurance, are covered through the same payment as body repatriation, the geographical scope of their operations is limited by this primordial function.

Factors behind the adherence to *tontines* and CBHI: cultural embeddedness, trust, and adaptability

The adherence to *tontines* is strongly linked to the fact that they offer a whole package of services, among which repatriation of the bodies of the deceased is of central importance. There is a very strong preference to be buried in Senegal following the religious and social rites of the society of origin, which cannot be ensured in the context of legislative and cultural limitations that often exist abroad.

The *tontines* analysed in this study are in the process of constant transformation and adaptation to the emerging needs of migrants. Their high level of flexibility enables them also to respond to new demands, such as the ones connected with COVID-19. For example, in one of the analysed *tontines*, its members who could not work due to the lockdown and did not have social security, were provided with minimum resources to get by throughout the period.

Another fundamental factor, which contributes to adherence, is the fact that participation in *tontines* tends to be seen as a cultural obligation by its members. The following extract illustrates the discourse which compares and contrasts private for-profit insurance companies and CBHI in which the collected money is used in its totality to cover the needs of the community. Participating in CBHI is in this way described as a form of covering each participant's interests and, at the same time, caring for the community.

> *"I had insurance [in one of the Spanish banks], but when I heard that [the tontine] was going to be created, I decided to join to help others. I used to pay 70 euros a year (…), I paid more, but also if something happens, the benefit that one can receive from the bank is greater. But here by putting 25 euros, I am helping others who cannot pay 70 euros to the bank. The tontine is more social" (Abdoulaye, Granada).*

There is a strongly enrooted discourse that focuses on the importance of acting collectively to fulfil goals. The ability to organise themselves and create associations gains symbolic and identity value. In this sense, *tontines* are frequently seen as a source of collective pride.

> *"I was here before the tontine and I saw how many people did the tontine help. And those of us who have experienced the before and the after, we hang on [to the tontine], as it is the most beautiful thing we have done in Spain" (Habib, Granada).*

Adaptability of *tontines* and CBHI is, along with cultural appeal, another key characteristic that motivates migrants to affiliate. It is specifically the decision-making process of who to help and the way the payments are collected that transform CBHI into an alternative to other forms of insurance.

The economic and labour market situation of members is taken into consideration when payments are collected. The most frequently mentioned categories include: (1) the recently arrived, (2) the retired; (3) the unemployed (due to a medical condition or other uncontrollable causes), and (4) economically settled migrants. The affiliates that belong to the first three categories are typically given the possibility of paying less or not paying at all. High level of precariousness and instability which characterises many migrants makes the possibility of having this kind of insurance highly attractive. If one loses their source of income and cannot pay the quotas, it does not necessarily mean that they lose their insurance. If they report their difficulties to the *tontine*, they can ask to maintain their rights to access the community funds while they resolve their economic situation.

> *"When you can pay, you pay and the day you can't, the tontine helps you (…) I stopped paying 7 years ago and I'm still a member like everyone else because before when I could, I had paid. Just by paying 30 euros, you can help a lot of people. Here we all need each other, and the tontine goes in this direction (…) When I got ill, I underwent treatment here. After a year, the tontine paid for my ticket and gave me 1000 euros to be with my family" (Abdou, Granada).*

The mechanism in place to ensure that members pay regularly is based on collective pressure which seems to

have transnational character. If somebody fails to pay without a justified reason the information may be made public. The matter may be discussed through a WhatsApp group which typically includes all the affiliated to each *tontine*. It is not only the local community that may learn about the failure to pay, but also the community of origin in Senegal.

> *"We do tell young people to pay less, if they are in a complicated situation, but almost all of them pay because nobody wants to be talked about in the WhatsApp group where there are hundreds of people so that your whole town finds out about your situation in Spain" (Kalidou, Manresa).*

Just as the whole system, decision-making process as who to help is highly flexible. Decisions are made on a case-to-case basis. When an emergency occurs meetings or conversations in online groups are undertaken to decide how to proceed. The three *tontines* have formal leaders, who are in charge of managing the funds and organisational activities. Despite this, the predominant discourse is that all important decisions are taken on a collective level through consultations with all the members of each *tontine*. This makes the participants feel that the functioning of the organisation is not only transparent, but also controlled by all its components. Although in practice not everyone is active in terms of participating in the decision-making process, there is a shared perception that one of the most important advantages of *tontines* is their high level of transparency.

> *"I strongly trust [in the tontine]. Our elderly are there and I don't think that they can play with hope of the Senegalese. It is also transparent. In the WhatsApp group they tell you how much money was spent and how much money there is. If you want to contribute with an idea you can and it is discussed on WhatsApp and on meetings. It is more transparent than banks or governments" (Moustapha, Granada).*

WhatsApp groups are used to disseminate information relevant for the community and to discuss different issues before deciding who to help. The information of how much money is spent, who receives it, and why, is in this way made public.

> *"There is a WhatsApp group where they write about everything that happens and so we always know what happens and who receives our help. It is very transparent (…) We always know how much we have and who has it. We also know how much we spend and who is helped. They write it all in our WhatsApp group" (Ismail, Granada).*

Tontine is seen as an alternative to other forms of insurance. Some of the participants who had experience with insurance available in the private market, cancelled their participation to register as members of CBHI. In these cases, the arguments given are similar to the ones offered by other participants of *tontines*: high level of flexibility, cultural adequacy, possibility to help others, and lower costs. The lack of necessity to deal with bureaucratic procedures is another important argument. Apart from all the known disadvantages of bureaucracies, in the context of migration, the need to deal with unfamiliar procedures in foreign language may be a factor that discourages migrants from engaging with local institutional structures. In case of emergency, the *tontine* offers the possibility to enjoy the benefits of insurance without the need to grapple with linguistic obstacles and bureaucratic procedures.

Discussion

This study highlights the role played by grassroots social innovation at local level, in particular *tontine*-based CBHI, in meeting the unmet healthcare needs of Senegalese migrant communities in Spain. The collected data demonstrates that, despite legislative transformations and largely positive evaluation of public healthcare by many Senegalese migrants [16], social security provision in Spain is not fully universal. In this sense, the study aligns with findings of other authors who show the persistence of barriers in access to healthcare for undocumented migrants [17]. The results significantly contribute to a comprehensive understanding of the functioning of CBHI approaches and their role in addressing gaps in healthcare access.

CBHI has been an important element of discussion on health provision for the most vulnerable in many Low- and Middle-income countries [18]. The present paper shows that such insurance schemes can also be used in High-income contexts whose health coverage is not sufficient to respond to risk mitigation needs of all the social groups, including migrant populations. *Tontines* have been described in the literature as a mechanism that enables socially disadvantaged groups to mobilize and optimize their resources [19]. Our study provides empirical evidence of the transformative power of *tontines*, showcasing their adaptability in response to the challenges posed by the labour market and the legal loopholes that affect the public health system.

Although the studied associations conform to the general definition of CBHI, as "not-for-profit insurance owned and managed by [its] members (.) who pool funds and share risk across the community" [20] they also differ

in various aspects from CBHI schemes for migrants and non-migrants in other contexts. The present research explores the organizational background of CBHI and traces how such historically enrooted organizational structures as *tontines* can transform to respond to the emergent needs that characterize the migratory context. One of the key characteristics and distinctive features of the analysed associations is their grassroots origin and development. In the studied case, migrants set up and manage CBHI with no intervention or purposeful incentive on the part of external social actors. In this sense, this form of insurance differs, for example, from diverse CBHI initiatives developed in the context of Senegal in which top-down mechanisms have been relevant. The Senegalese programme Couverture Maladie Universelle is a good illustration of such schemes [21]. Launched in 2013, it is a state initiative whose main component is CBHI either fully or partially financed by the government. Similarly, various studies that look at CBHI in the context of international migration indicate the role played by more formal, organizational structures in promoting this form of insurance [22, 23]. Research by Pudpong and associates (2019) [22], for example, described the case of Migrant Fund, a non-profit insurance that facilitates access for undocumented migrants whose needs are not covered by government programmes in Thailand. Created by a private social enterprise supported, among others, by UNICEF and the EU, it serves as an illustration of structures that differ from tontine-based CBHI that have been established as a result of grassroots initiatives of migrants themselves. Present research captures the agency of migrants, who are affected by difficulties in access to healthcare, but who, at the same time, actively respond to the existing barriers developing collective mechanisms to overcome them.

By providing an insight into the factors which lie at the heart of the adherence to CBHI among Senegalese migrants, the study enables us to address the wider question of what it takes for migrant organizations to become mediators between vulnerable communities and formal healthcare systems. CBHI are frequently affected by low levels of enrolment. The recent review of research [24] on participation in CBHI schemes in Low and Middle-income countries shows that lack of trust, lack of benefit or dissatisfaction with insurance services, as well as low socioeconomic resources and poor quality of healthcare are among the most important barriers for the renewal of these schemes. Our data shows that, according to the perceptions of the members of the *tontines*, CBHI schemes managed by the studied Senegalese associations in Spain respond to at least some of these challenges. Among the fundamental factors which underpin the adherence to *tontine*-based CBHI is trust. It is inherently linked with values of solidarity and reciprocity, which have been widely described in literature on Senegalese migrations [25, 26]. The publication of information about the activities of *tontines*, and specifically consultations on the usage of the funds that take place both through online groups as well as through in situ meetings, create a perception that the management of funds is transparent. These practices also serve as a tool of social pressure, as the importance attributed to belonging to the community is itself a powerful sanctioning tool. The fear of being talked about motivates the members to pay their quotas regularly, thus ensuring the *tontines*' financial liquidity.

Another relevant factor which has to be discussed in the debate on the factors that influence adherence to CBHI is connected with the volume of assistance requests received from its members. In line with CBHI insurance schemes studied in other geographical contexts [27], CBHI analysed in this study offers a high level of flexibility due to its focus on a small and targeted population. *Tontines* can assume all their functions precisely because of a relatively limited scope of the needs of migrants. The repatriation of bodies is a constant, but a fairly rare procedure due to the still young age structure of the Senegalese community in Spain. According to the census data [6], almost 98% of Senegal-born population is below 65. This also limits the healthcare needs within the community, adding to the possible influence of "Healthy Migrant Effect" [28, 29], that translates into better health of migrants in comparison to the host population. However, the state of health of migrants is not the only factor that shapes the usage of *tontines*' funds. The collected data shows that the probability of seeking medical assistance is strongly influenced by cultural factors. High value attached to work and to family obligations make many migrants postpone or even avoid seeking medical attention even when faced with health problems. Thus, medical assistance is mostly sought when serious health issues arise, and even in such cases, the financial support of *tontines* tends to be a last resort solution. This appears to be strongly related to the "culture of migration" developed in Senegal, which transformed international mobility into a rite of passage for the youth [30], who undertake migration to prove to their communities that they are autonomous adults, capable of fulfilling their needs independently.

The issue of cultural embeddedness is also directly related to the practice of repatriation of the deceased members of the community to their home country. Senegalese migrants in multiple destination countries tend to attribute crucial relevance to this practice [31, 32]. This has to be taken into consideration, to understand the penetration of *tontines* into the sphere of healthcare. Health insurance is thus profoundly intertwined with

other kinds of services that are culturally relevant for Senegalese migrants who adhere to *tontines*. The relatively high quotas paid by their members are stimulated by the awareness that community-protection mechanisms will be activated in case of serious emergencies.

Finally, the findings on transnational medical needs show that social innovation in the form of *tontine*-based CBHI emerges as a response to culturally embedded healthcare demands which cannot be fully dealt with neither by the private nor public sector. In this sense, the study enters in dialogue with an extensive body of literature that highlights the relevance of transnational ties for Senegalese migrants [33–36]. Transnationalism, understood as a framework of analysis, has been widely used in the field of migrations studies [37, 38]. Although there are a variety of definitions of transnationalism, it fundamentally enables us to capture the socio-economic, political and cultural links that many migrants maintain with their countries of origin. In the Senegalese case, cultural importance attributed to family translates into the accumulation of funds to return to the home country in case of serious illnesses. In such cases, migrants use their knowledge about care possibilities and traditional medicine in Senegal. They maintain access to it precisely thanks to transnational ties with the society of origin. They thus navigate the healthcare structures and care options both in Spain and in the country of origin, combining the options available to them in both contexts.

Our findings advocate for a targeted approach toward migrant organizations to address coverage loopholes and recognize diverse healthcare needs. Simultaneously, there is a call for substantial support for grassroots social innovation, particularly CBHI organizations, given their demonstrated effectiveness in responding to the unique challenges faced by Senegalese migrant communities in Spain. This recommendation aligns with evidence that shows that, even though enrolment level and economic sustainability are frequently challenging for CBHI schemes, these can be overcome by supportive policies that promote voluntary participation in CBHI [39].

This study is subject to several limitations that should be taken into consideration when interpreting the results. The geographical scope of the study encompasses three localities and thus the generalization of the conclusions to other destinations of Senegalese mobility is reduced. Further research is required to confirm the potential reproduction of similar patterns elsewhere. The present paper explores the common traits of the analysed *tontines*, however we have also detected important levels of diversity in terms of composition, functioning of CBHI and organizational structures which, due to the scope of the study, were not covered. Additional research is needed to analyse the regional differences in healthcare access across Spain and their relation to *tontines*' functioning. Another important issue that requires further research is linked to the impact of legislative changes on the functioning and development of *tontines* over time. This study delves into current uses and the present characteristics of CBHI and, therefore, provides a framework for longitudinal research that could analyse the transformations of the legal sphere in the aftermath of the 2008 economic crisis and its impact on CBHI. Finally, we have focused only on members of CBHI, and thus the strategies and experiences of migrants who, for diverse reasons, do not participate in *tontines* were not captured in this research. Future studies should address the factors that influence the decision not to adhere to CBHI, especially in the case of the most vulnerable groups among migrants.

Supplementary Information

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Supplementary Material 1.

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Authors' contributions
MD and RS carried out the conception and design of the study. Both MD and RS were actively involved in data collection, ensuring a comprehensive approach to gathering the necessary information. They jointly conducted the qualitative analysis, providing valuable insights into the data. The writing of the article was a collaborative effort between MD and RS, who carefully drafted the manuscript. Additionally, they undertook a critical revision of the article, refining it to ensure clarity and accuracy. Finally, both MD and RS gave their final approval of the article.

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Data availability
The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate
The research has obtained ethics approval by the Ethics Committee of the University of Granada (1038/CEIH/2020). All participants signed informed consent to partake in the study prior to the interview. The research was conducted in accordance with the relevant guidelines and regulations (Declaration of Helsinki).

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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