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BARRIERS TO THE CARE OF FEBRILE PATIENTS IN A MALARIA ENDEMIC AREA. EL BAGRE (ANTIOQUIA, COLOMBIA) 2016

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Abstract


Objective: identify constraints of patients with acute febrile syndrome to institutional care services access, emphasizing the identification of communication barriers. **Method:** this is a descriptive study that involves qualitative research techniques including malaria care service patients as well as assistance and administrative personnel of El Bagre town in Antioquia, Colombia in 2016. Semi-structured individual surveys, interviews and focus groups were used. **Results:** users listed difficulties including transportation, insufficient number of appointments and absence of personnel to access healthcare. Communication difficulties were related to the information provided in the paperwork and documents filled out to attend healthcare facilities, scarce information about diagnostic, control, and adherence to antimalarial treatment; additionally some patients did not use Spanish to communicate in oral or write form. **Conclusion:** the creation of health models based on structural transformations that encompass the needs of Healthcare System actors and communities is a must, which allows the establishment of foundations for a multicultural society project.

Key words

Malaria, paludism, access to healthcare services, communication barriers, mining (*fuentes: DeCS, BIREME*).

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BARRERAS PARA LA ATENCIÓN DE PACIENTES FEBRILES EN UNA ZONA ENDEÉMICA DE MALARIA. EL BAGRE (ANTIOQUIA, COLOMBIA) 2016

Resumen

Objetivo: Identificar limitaciones de los pacientes con síndrome febril agudo para acceder a los servicios de atención institucional, con énfasis en la identificación de barreras de comunicación. **Método:** Estudio descriptivo que involucra técnicas de investigación cualitativa con pacientes de los servicios de atención de la malaria y con personal asistencial y administrativo del municipio de El Bagre Antioquia, Colombia en el 2016. Se aplicaron encuestas semiestructuradas individuales, entrevistas y grupos focales. Los usuarios señalaron dificultades con el transporte, insuficiente número de citas y falta de personal para acceder a la atención. **Resultados:** Las dificultades de comunicación se relacionaron con la información suministrada sobre trámites y documentación para asistir a los puestos de salud, poca información sobre el diagnóstico, control y adherencia al tratamiento antimalárico y el no uso de algunos pacientes del español para comunicarse en forma verbal o escrita. **Conclusiones:** Esto exige crear modelos de salud basados en transformaciones estructurales que abarquen las necesidades de los actores del sistema de salud y las comunidades, permitiendo establecer las bases para un proyecto multicultural de sociedad.

Palabras clave

Malaria, paludismo, accesibilidad a los servicios de salud, barreras de comunicación, minería (*source: MeSH, NLM*).

BARREIRAS PARA A ATENÇÃO DE PACIENTES FEBRILES EM UMA ZONA ENDEMICA DE MALARIA. O BAGRE (ANTIOQUIA, COLÔMBIA) 2016

Resumo

Objetivo: Identificar limitações dos pacientes com síndrome febril agudo para aceder aos serviços de atenção institucional, com ênfase na identificação de barreiras de comunicação. **Método:** Estudo descritivo que involucra técnicas de pesquisa qualitativa com pacientes dos serviços de atenção da malária e com equipe assistencial e administrativo do município do Bagre Antioquia, Colômbia no 2016. Fizeram-se enquetes semiestructuradas individuais, entrevistas e grupos focais. Os usuários sinalaram dificuldades com o transporte, insuficiente número de **horas marcadas** e falta de pessoal para aceder à atenção. **Resultados:** As dificuldades de comunicação se relacionaram com a informação subministrada sobre trâmites e documentação para chegar aos SUS (Sistema Único de Saúde), pouca informação sobre o diagnóstico, controle e aderência ao tratamento antimalárico e o não uso de alguns pacientes do espanhol para comunicar-se em forma verbal ou escrita. **Conclusões:** Isto exige criar modelos de saúde baseados em transformações estruturais que abarquem as necessidades dos atores do sistema de saúde e as comunidades, permitindo estabelecer as bases para um projeto multicultural de sociedade.

Palavras chave

Malária, paludismo, acessibilidade aos serviços de saúde, barreiras de comunicação, mineira (*fonte: DeCS, BIREME*).

INTRODUCTION

Although the latest World Malaria Report acknowledges a global decrease of cases in some regions, this disease continues to be a serious public health problem and the decrease of investment to control it is significant (1). In the last 10 years, there has been a decrease in the number of confirmed cases in Colombia, it ranges from 230,000 in 2001 to 55,117 reported confirmed cases in 2017 (2). In 2018, 63,143 cases were reported (a rate of 7.8 cases per 1,000 inhabitants), 30,234 (47.9%) resulting from *P. falciparum*, 31,662 (50.1%) resulting from *P. vivax* and 2% resulting from mixed infections of these species (3). Malaria is endemic in a vast part of the Colombian territory, it mainly occurs in the provinces of Choco, Nariño, and Antioquia; this third area contributed 5,583 cases in 2018, and the town of El Bagre was the most prevalent (a rate of 53.0 per 1,000 inhabitants (3).

There are social and cultural interaction processes in healthcare services that imply differences between patients and service providers regarding communication and language. El Bagre, a town inhabited by African descendants and indigenous communities, has informal small-scale and illegal mining activities; migrants from different parts of the country are characterized by their social-cultural diversity (4). When this population, mainly from far-off zones in the most vulnerable communities, has a febrile disease, they mostly go to malaria diagnostic centers and healthcare centers where microscopists (Health Care technicians and assistants) (4) treat them. This service has been provided by volunteers including provincial and national program officials (4) and it facilitates prompt diagnosis and care. Nevertheless, successful results have been temporary and sectorial (5) and in most cases patients do not receive medical care from a comprehensive evaluation.

In a country with cultural heterogeneity as Colombia, diversity related to habits, communication, and language must be considered

to define healthcare policies (5), otherwise, such characteristics may represent a barrier for effective healthcare (5, 6). A qualitative study conducted in the Colombian Amazon region (7) identified that difficulties regarding access to diagnosis and anti-malaria treatment are related to language because it does not correspond to the social-cultural situations of local communities. This study from a theoretical and epistemological outlook fosters Luckmann's concept of "communication", which is defined by García (8) as "a social action that uses different types of signs to produce and reproduce knowledge, and above all, it is reciprocal" and "language is the principal means to construct social reality and to mediate with socially constructed reality". In that case, according to Berger and Luckmann (9) "language is human society's most important sign system, which has the capability of transforming itself into an objective deposit of accumulations of meanings and experiences, which is conserved in time and it is conveyed to future generations." Therefore, communication through language becomes particularly interesting in matters concerning a way of reproduction of a society because it is through language that a society translates what happens in everyday life (9).

In addition to being linked to important barriers, communication in patient-care processes also goes along with the dominance of a social model over another, which in the Western world has mainly been the scientific-biomedical model over local community folk knowledge (10,11). This has been reflected in situations of rejection and little or no community adherence to Western medical practice, power-relation conflicts between patients and healthcare professionals and the disassembling of the social-cultural structure of the community, which mainly affects countries with a population with high social-cultural diversity (12).

In Colombia, in the last 20 years, malaria assistance programs have been covered by a mixed health care system model including private intermediation (General Social Security Health

System /Law 100 of 1993) and its conceptual model is a result of an “instrumental convergence between minimum decent perspectives and access to Market logic.” The former perspective deals with prioritizing Health Care Services with high positive externalities, and the latter suggests that people are willing to pay for services that benefit them directly and which, according to a neoclassical perspective, are based on private assets because people must pay and they are willing to do so (13). In Antioquia, malaria control programs have been implemented based on an integrated management strategy to “promote, prevent and control diseases transmitted by vectors” including the COMBI methodology (14). These proposals have considered the cultural differences of the population regarding paludism and they are focused on facilitating intercultural dialogue and improving the way the community receives them (12,14). However, the lack of continuity as public policy has had an impact, which has reduced it to short lapses of time. As long as programs are under the current healthcare model, *i.e.*, state--private-company regulated healthcare competition, large gaps and inequalities in healthcare services are favored and the effectiveness of malaria control programs decreases and, in the future, such programs might be eliminated (15).

The purpose of this study was to recognize problems related to febrile-syndrome patient care, diagnosis and treatments in an endemic malaria zone, with special interest in identifying interaction barriers between patients and service providers, to contribute in the search for solutions through communication-strategy based interventions.

PARTICIPANTS AND METHODS

Type of study. This is a qualitative descriptive study. **Study site and setting.** The study was conducted in 2016 in the town limits of El Bagre, in the province of Antioquia (Colombia, which has an extension of 1 653 km² in a tropical rainforest zone, a height of 50 m, and a yearly temperature of

26.8 degrees Celsius. The town has approximately 50,000 inhabitants; 21% African-descendants, 2% indigenous and a vast majority of mestizos. This population is the result of immigrants seeking job opportunities. Gold mining and quarry exploitation contribute 50% of the economic resources and produce temporary human settlements without access to basic housing and sanitary services. They leave wells with wastewaters from indiscriminate gold-mining in their path, which favors the reproduction of vectors that transmit different types of diseases including malaria. This is reflected in the high incidence of diseases in the town (4, 16). **Population and Participants.** Universe: Town residents of El Bagre. **Population.** Patients with febrile syndrome who consulted in the first 2 weeks of February and in the first two weeks of May 2016 at “E.S.E. Hospital Nuestra Señora del Carmen”, a healthcare service provider -IPS “Medicauca” and “Claudio Mantilla” private Clinical Laboratory. The health care personnel responsible for febrile patient-care processes participated (diagnosis, treatment, general healthcare).

Quantitative component. Objective: To describe the social demographic characteristics of febrile syndrome patients who attended malaria-care centers and their barriers to access healthcare. Sample: A sample of 132 participants was calculated with 95% confidence level and 5% margin of error, established based on a monthly average of 200 febrile syndrome cases that consulted the malaria-care centers in 2015 within the town limits. People were first placed in waiting rooms before and after consultation depending on their availability of time, in the various healthcare sites. Inclusion criteria: 1) People who consulted because they had a fever and voluntarily accepted to participate in the study; 2) People over 18 years of age; 3) People who granted an oral or written consent to participate; 4) People who communicated in Spanish. Collection technique: a structured individual survey (pre-codified questionnaire) about the social demographic characteristics and healthcare service access barriers (geographical,

economic and administrative) of the participants. Data analysis: The information was recorded in a database and processed for the descriptive statistical analysis of social demographic variables and variables related to seeking healthcare (central tendency, absolute and relative frequencies), using the SPSS version 20 licensed for Universidad de Antioquia.

Qualitative component. Objective: to identify the perceptions of healthcare personnel and patients regarding the healthcare process at malaria diagnostic and care services. Inclusion criteria:

1) People who consulted because they had a fever and voluntarily accepted to participate in the study; 2) Patients over 18 years of age and staff responsible for the care of febrile patients (diagnosis, treatment delivery, general care); 3) People who granted a written consent to participate in the study; 4) People who communicated in Spanish. Sample: Researchers did not calculate an exact sample because they were seeking data saturation with the methodology they implemented. Technique: The study implemented semi-structured individual and focus group interviews; the study used an interview guide and the field diary as support to record observations and perceptions of the researchers. Participant selection and information collection procedures: All patients were invited to participate in order of arrival to healthcare centers, and those who granted their consent were included; the recruitment was done after their appointments in waiting rooms where researchers used a qualitative methodology instrument after the use of the quantitative methodology instrument. Healthcare personnel was recruited in workplaces. All those who met the inclusion criteria were invited to participate and those who signed the informed consent were included. The study was conducted in two instances, first an exploratory visit with 15 individual semi-structured interviews (lasting from 10-30 minutes); this enabled the researchers to adjust the instrument, as well as to transcribe and analyze information. In a second visit, researchers conducted individual semi-structured interviews

attempting data saturation. In a third visit, researchers triangulated information returning with 2 focus groups. Data analysis: The interviews were transcribed using Excel and analyzed using open axial selective codification. Researchers classified inductively the qualitative data obtained in interviews relating it to general malaria topics, communication between patients and healthcare personnel in healthcare centers, their difficulties, and strategies to face them. The above was the result of the opinion of each participant, regardless of the study sites. The interviews were transcribed and codified depending on subcategories related to General topics on Paludism, difficulties to access malaria healthcare services (personal, geographical, economic, legal and administrative), patient-healthcare personnel communication difficulties at healthcare service centers and strategies to face them. After that, the researchers did discourse analysis and data triangulation.

Ethical aspects. The inclusion of participants was determined according to ethical norms established in the Declaration of Helsinki of 2013 (17) and Resolutions 8430 of 1993 (18) and 2378 of 2008 (19) to conduct a research with human beings in Colombia, which were used as a foundation to draw up the informed consent. The researchers also used it to define research responsibilities, commitments and risks. This research was approved by the Ethical Committee of the School of Medicine at Universidad de Antioquia (CBI-61 Minutes N°014 of September 15, 2015).

RESULTS

One hundred sixty-seven people participated in the study; 150 patients and 17 healthcare center staff members. Eighty-seven (58%) were recruited in malaria diagnosis centers, 45 (30%) in outpatient care and 18 (12%) in the ER. Ninety-five were women (63.3%) and 55 were men (36.7%), the majority came from and resided in rural areas (57%), they were between 18 and 94 years old (mean: 36.4 years old; mean 31.5

years old). The most frequent occupation was homemaker; 5 people were unemployed (3.3%) and they were included in the “Others” category along with transporters, mechanics, teachers and jungle activities (Table 1). Healthcare personnel included 14 women (84.4%) and 3 Men (17.6%) who work as microscopists (6; 35.3%), physicians (3; 17.6%), pharmacy assistants (2; 11.8%) and administrative assistants 4 (23.5%). The ethnic-

racial patient classification group implementing self-recognition were distributed as mestizos (n=95, 63.3%), Zenú indigenous people (n=18, 12%), African-descendants (n=12, 8%), white (n=5, 3.3%); 20 participants were not classified (13.3%). Healthcare personnel were distributed as follows 1 African-descendant and 16 mestizo people (94.1%).

Table 1. Occupations of interviewed febrile patients according to gender; El Bagre, 2016.

| Job – occupation | Female | | Male | | Total | |
|--------------------|-----------|--------------|-----------|------------|------------|------------|
| | N | % | n | % | n | % |
| Homemaking | 61 | 64.2 | 0 | - | 61 | 40.7 |
| Mining | 8 | 8.4 | 24 | 43.6 | 32 | 21.3 |
| General operations | 10 | 10.5 | 4 | 7.3 | 14 | 9.3 |
| Agriculture | 3 | 3.2 | 9 | 16.4 | 12 | 8.0 |
| Student | 5 | 5.3 | 2 | 3.6 | 7 | 4.7 |
| Business | 4 | 4.2 | 2 | 3.6 | 6 | 4.0 |
| Armed Forces | 0 | - | 5 | 9.1 | 5 | 3.3 |
| Masonry | 0 | - | 4 | 7.3 | 4 | 2.7 |
| Others | 4 | 4.4 | 5 | 9.1 | 9 | 6.0 |
| Total | 95 | 100.0 | 55 | 100 | 150 | 100 |

The level of schooling of the patients was: 36% elementary school dropouts or without any information; 14.7% high school graduates or higher education (Table 2). The level of schooling of healthcare personnel was: 11.8% (2) high school graduates, 52.9% (9) technical training, and 35.3% (6) professionals.

Conditions at healthcare access. The behavior reported by people interviewed when they have suspected malaria symptoms consists of halting their everyday life activities and remaining at rest wherever they are (n=70, 46.7%). Very few of them expect the disease to escalate to decide

on a particular behavior (n=4, 2.7%) or decide to finish their activities first before consulting (n=4, 2.7%). Many participants have indicated that they do not have a defined behavior (n=28, 18.7%). To relieve their symptoms, they self-medicate (n=122, 85.3%), and the medications they mostly use are acetaminophen (Paracetamol) (n=93, 62%), NSAIDs like aspirin, (n=31, 20.7%), and antibiotics like amoxicillin, (n=3, 2.0%). Some patients reported using traditional practices such as drinking beverages made from natural plants (n=21, 14%). Finally, most of them seek help with relatives, friends or medical care. (n=141, n=94%).

Table 2. Schooling level of febrile-patients according to gender; El Bagre, 2016.

| Schooling | Female | | Male | | Total | |
|----------------------------|-----------|--------------|-----------|--------------|------------|--------------|
| | n | % | n | % | n | % |
| Elementary School Dropout | 24 | 25.3 | 11 | 20.0 | 35 | 23.3 |
| Elementary school graduate | 7 | 7.4 | 6 | 10.9 | 13 | 8.7 |
| Secondary School Dropout | 22 | 23.2 | 7 | 12.7 | 29 | 19.3 |
| Secondary school graduate | 4 | 4.2 | 7 | 12.7 | 11 | 7.3 |
| Technical school dropout | 3 | 3.2 | 1 | 1.8 | 4 | 2.7 |
| Technical school graduate | 3 | 3.2 | 3 | 5.5 | 6 | 4.0 |
| College graduate | 1 | 1.1 | 0 | - | 1 | 0.7 |
| None | 10 | 10.5 | 9 | 16.4 | 19 | 12.7 |
| No data* | 21 | 22.1 | 11 | 20.0 | 32 | 21.3 |
| Total | 95 | 100.0 | 55 | 100.0 | 150 | 100.0 |

* This variable was not included in the pilot test for 32 participants.

Question regarding economic constraints to attend diagnostic services during the disease evidence that most participants did not mention a lack of economic resources (n=113, 75.3%); 33 people (22%) mentioned a lack of financial resources for transportation to get to the place for consultation and 4 (2.6%) mentioned difficulties to afford food and housing. The approximate time of arrival to the healthcare center is about 1 hour for 14% and from 2-10 hours for 18% of the people interviewed; the transportation fare was very variable, ranging from 3 to 100 USD\$ traveling by land (mule, car, motorcycle), air (helicopter) or water (motorboat, longboat, boat).

Most of the patients that answered the survey reported that they had no difficulties joining the healthcare system; while 145 (96.7%) people were registered in the healthcare system, 4 (2.7%) were not registered and 1 (0.7%) stated that they did not have healthcare coverage except for emergencies.

Fifty-three patients (35.3%) reported one or more geographical difficulties in accessing healthcare; 15 (10.0%) stated they had problems related to transportation access, 12 (8.0%) reported they had problems related to deficient access routes and 8 (5.3%) had to travel long distances to reach the closest healthcare center; 18 (12.0%) reported two or more of these constraints. Ninety-seven participants (64.7%) did not report geographical barriers to healthcare access.

Administrative difficulties were reported by 55 patients (43.1%); 20 patients just reported one difficulty, and 35 had two or more. Thirty-six (24%) talked about problems to get appointments, 39 (26%) talked about delays in healthcare services after the appointment, and 30 (20%) talked about both situations. Other difficulties they reported that occurred less often are listed in Table 3.

Table 3. Administrative difficulties of patients regarding healthcare services in El Bagre, 2016.

| Administrative Aspect | Female | | Male | | Total | |
|---|-----------|--------------|-----------|--------------|------------|--------------|
| | n | % | n | % | n | % |
| No difficulties | 58 | 61.1 | 37 | 67.3 | 95 | 63.3 |
| Just delays getting an appointment | 4 | 4.2 | 2 | 3.6 | 6 | 4.0 |
| Just delays getting Medical Care | 2 | 2.1 | 2 | 3.6 | 4 | 2.7 |
| The center runs out of appointments | 3 | 3.2 | 2 | 3.6 | 5 | 3.3 |
| Organization and data system problems | 1 | 1.1 | 1 | 1.8 | 2 | 1.3 |
| Absent Healthcare personnel | 1 | 1.1 | 2 | 3.6 | 3 | 2.0 |
| Delays in getting appointments and health care services | 22 | 23.1 | 8 | 14.6 | 30 | 20.0 |
| Delays in getting health care services and absent personnel | 4 | 4.2 | 1 | 1.8 | 5 | 3.3 |
| Total | 95 | 100.0 | 55 | 100.0 | 150 | 100.0 |

In general, patients did not perceive communication problems with healthcare personnel who provided diagnostic services and medical care; nonetheless, 32 (21.3%) reported such problems. The most evident difficulty reported by patients was information availability, they considered that more information is needed (n=22, 14.7%) regarding

access to consultations (process, necessary paperwork, service schedules) and procedures or practices that they have to undertake after receiving healthcare (when to return, control, diagnoses results, treatment instructions). Table 4 shows other less frequent difficulties.

Table 4. Communication difficulties reported by patients. El Bagre, 2016

| Communication Difficulty | Female | | Male | | Total | |
|---|-----------|--------------|-----------|--------------|------------|--------------|
| | n | % | n | % | n | % |
| No difficulties | 74 | 77.9 | 44 | 80.0 | 118 | 78.7 |
| Difficulties with personnel that control access | 1 | 1.1 | 2 | 3.6 | 3 | 2.0 |
| Assistance with administrative personnel and healthcare providers | 3 | 3.2 | 2 | 3.6 | 5 | 3.3 |
| Not enough information to access the consultation | 12 | 12.6 | 4 | 7.3 | 16 | 10.7 |
| Information given at the health care service was not enough | 5 | 5.3 | 1 | 1.8 | 6 | 4.0 |
| Personal difficulties to communicate verbally | 0 | - | 2 | 3.6 | 2 | 1.3 |
| Total | 95 | 100.0 | 55 | 100.0 | 150 | 100.0 |

Six people (4%) reported difficulties related to public order situations, which did not allow a prompt consultation. Most patients reported different limitations to seek Medical Care (n=100, 66,7%).

Perceptions regarding the disease and seeking healthcare. Researchers conducted 27 individual semi-structured interviews and worked with 2 focus groups, each lasted from 10 to 30 minutes. This process is a more in-depth comprehensive way of understanding what participants perceived regarding their experiences in the healthcare process. Three categories emerged during the analysis including knowledge on paludism, healthcare service barriers, and healthcare worker-patient communication difficulties.

Knowledge on Paludism. The clinical manifestations that patients call suspicion of paludism include fever, alternating headaches, and chills, associated with previous malaria diagnostics using a thick drop test. The experience with the disease allows patients to recognize their own symptoms. They suspect that they have malaria and seek medical care.

“Including this, I’ve had paludism 13 times; 13 years ago I had it the first time, and I get it almost every year. I had it last year and this year I have it again” (AHM2, service user).

For healthcare personnel, these signs help identify the disease, mainly if people have visited any endemic malaria zone in the last 15 days and refer to experiences with clinical manifestations similar to malaria, which is then confirmed using a thick drop test. For them, paludism has signs and system symptoms different from viral infections like Dengue, Zika or Chikungunya. Additionally, it may be confused with symptoms resembling bacterial urinary-tract infections; therefore, it is necessary to do other tests like a urine test.

“And malaria symptoms are totally different from the symptoms of any other viral infection such as Dengue or Chikunguña; they are totally

different. And that is most of what a person with malaria stated (...), we do not only run one test, we explained to them that they must return for another one (BH6, healthcare worker).

For healthcare workers, knowledge and experience are important to diagnose and treat a disease, for instance, doctors in rural services have little time on the job in health care centers and they have less experience in comparison with permanent malaria healthcare centers personnel.

“Although a physician’s education is relevant here (...) when they start, they do not have knowledge. Right? I have had some with leishmania. Generally, since we have been here for such a long time, one already knows when a person has paludism; generally, one sees the person and says that person has a paludism face” (BM1, healthcare workers).

Healthcare institutions logistics support workers, who generally are the first to contact patients; thanks to their experience and popular knowledge, workers reported that they recognize when patients attend healthcare services because they suspect of paludism. Therefore, workers can guide patients to health care services for outpatient consultation or a diagnosis center.

(...) One has to deal with it. one has already seen so many things... one already sees a person and knows what’s wrong. (...) let’s suppose. I see a person that arrives with a strange ill face, like with a strange color, sweaty, I tell the doctor: there’s a person who is ill or should I tell one of the nurses (...) (BH2, healthcare worker).

In case of any suspicion of paludism, patients know that they must go to diagnosis centers and healthcare personnel remind them to do so every time they have a chance to communicate:

“if at the moment there is a fever, immediately, a patient undergoes a hemoparasitic test and I ask him: have you already gone to the hospital? You must first have a paludism test (...) because

there are diseases that are very similar” (BF1, healthcare worker).

For multiple reasons, when some patients have symptoms or suspect of paludism, that cannot go immediately to a healthcare center. Therefore, they take medication or natural preparations to relieve symptoms. Healthcare personnel recommend medication like acetaminophen to relieve symptoms; nevertheless, they contraindicate the use of anti-malaria medicine without a prescription, anti-inflammatory medicine like ibuprofen, antibiotics like amoxicillin and beverages made of natural plants like quinine; this information is not very clear for some patients.

“But last week when I got paludism, I was very busy and could not come, that’s why I hadn’t come sooner, so I waited around 9 days, and meanwhile, I took pills, like ibuprofen” (AHM2, user).

“But what is mostly recommended to patients is to take acetaminophen. It is not recommendable for them to take NSAIDs because of the risk that patients have as a result of Thrombocytopenia symptoms, NSAIDs may cause digestive bleeding, and so it is not recommended (BH6, Healthcare worker).

Several participants pointed out the effects of taking contraindicated medications or substances before the thick drop test, which could cause altered results and false diagnoses. Healthcare personnel indicates that, in this case, the test must be repeated two more days (3 tests minimum) to confirm the results of the thick drop test.

“Since they gave me a recipe for some pills for my bone ache... (I think) they cover up paludism (...) and my test was negative (...) tomorrow I have to take another paludism test” (AHM3, healthcare service users).

“I speak to them as clearly as possible, almost using Play-Doh; I put myself at their level. I like

them to leave with accurate information. I always verify that they understand, and I ask them if they have understood. When results are negative, and to rule out malaria 3 thick drop tests must be conducted; then, one suggests a second thick drop test, and one tells them that they should start asking for a medical appointment, so they may start proceedings and the symptoms did not worsen if the next day the results are positive (BH1, healthcare worker).

Patients who have had more experience with the disease see the importance of a diagnostic to have access to anti-malaria treatment; they know that a specific treatment is required depending on the Plasmodium species and the only ones authorized to dispense free legal medicine are healthcare institutions or malaria centers, supplied by the Ministry of Health. We understand that they must take the complete treatment, with authorized healthcare personnel’s indications even if they know the dosage because of their previous experiences.

“They already know how the treatment is. There are even people who say that they don’t have to be explained anything because they already know how it’s taken. People know much about the topic”. (BP2, healthcare worker).

“and they explain to me that I must take the medication (in some paper bags, with numbers) the first day bag 1, the next day, 2, the third day, 3 and each day one of those bags (Primaquine) until day 14. I must take it with water or with something that has milk. I don’t know why. Perhaps it reduces the pill’s strength, the bacteriologist told me. and they gave me my results in a sheet of paper”. (AHM1, service user).

Nevertheless, healthcare personnel report that some patients do not take the treatment as indicated or stop the treatment, not adhering to treatment correctly. One of the reasons is because of quick symptom relief, adverse effects and the ingestion of tablets for a long time as in the case of P. vivax.

“most of them do not continue the medication with P. vivax. They stop taking Primaquine because it must be taking for 14 days, the longest, or when they feel better; I believe they stop taking the medicine, or because they forget, or because they feel bad because of the burning sensation (...) I always tell them that if they do not take primaquine, they will get paludism again; that is the result of not taking all their medicine. If people are sick, they have difficulties working, a person will have anemia and if he gets paludism again there could be complications and that person could die (BH1, Healthcare worker).

“Regarding side effects: these pills are very strong, and one loses one’s appetite, sometimes you feel that it is very heavy. The time I had paludism, which almost took my life, I lost my appetite and the pills made me break out in a cold sweat and I sort of lost my strength, and they gave me tachycardia, I drank juice and after 3 days I got better. It all depends on how Paludism gets you”. (AHM2, healthcare service user).

For participants, to attend parasitemia control depends on the persistence of the paludism symptoms because, for various reasons, patients do not return to control unless they do not recover. Healthcare personnel points out specific days to undergo parasitemia control to patients. However, they stated that even if they attend their control appointments days after it was indicated, it would not be considered control anymore but a new diagnosis.

I came for a control appointment because I continue taking the drug, and I kept feeling the same. I didn’t think it was getting better at all. I was like that for two days. and it’s been about 2 days since I’ve been getting an allergy, like an Itch in the body. That’s why it was better to come because it did not let me sleep at night” (AHM5, service user).

“People that live in far-off zones in distant villages find it very hard to come to control appointments. Then, there are 20 days of control, and it is not a control appointment; it is a new diagnostic” (BH1).

Healthcare service barriers. This category emerged from the description of the schedules of participants in accordance with malaria care. To reach communication-related aspects, patients talked about the different barriers they have to access healthcare services. Besides, healthcare personnel referred to the difficulties they have when working as healthcare personnel. Patients refer to surpassing different barriers to have access to healthcare services, like economic, geographic and administrative difficulties, mostly emphasizing the last two. There are people who do not have diagnosis centers in their villages, so they must go to the nearest town, pay high transportation fares and travel long distances onboard vehicles like motorcycles or motorboats. They must also take into account service schedules because they must match transportation schedules so that they may return to their villages possibly the same day and avoid spending money in food and housing.

“(…) you have to come from there which is very far, if you don’t have money (for the motorcycle) you have to get up very early. (...) and friends tease me with a headache (...) I came slowly (on the motorcycle) because the road is very bad (...)” (AHM4, healthcare service user).

“(…) to come to the hospital, I travel by mule, car, longboat; it takes 6 hours and it costs me 140 000 COP (...)” (AHM5, service users).

“Access is hard, very hard, above all because of the armed conflict which is so big (...) besides the people that come from villages must return quickly, the last longboat leaves at 1:00 in the afternoon and they prefer to leave at 1:00 so they do not have to pay for housing or they do not have to stay around here because they don’t have money for that” (BP2)

Regarding healthcare difficulties, directions to express their annoyance with the waiting time at the hospital to access outpatient appointments, they tell us that they must arrive at a specific time, sit down and wait several hours to get an appointment (an appointment number), and after that, keep waiting to get medical care. Although people from villages have priorities, they are also affected, mainly when they must travel long distances to return to their houses. All this may influence system persistence and consequently lead to complications of their health problems.

“Women spend too much time here, especially me, I have two small children, one is 4 and the other is 3”. “(...) if you do not get a number (outpatient appointment) you have to come back the following day or (we go in) through the ER.” (AHF6, healthcare service users).

“Once, not here but in the clinic where I was waiting for my turn, because of the delay of that reading, we had a patient who passed because of malaria, that was some years ago (BH4, Healthcare worker)

Regarding medical care, healthcare personnel highlighted economic difficulties, and to a great extent, administrative difficulties which is something that they can resolve using their own means because they are directly related to the Colombian Social Security Health Care System. In the case of voluntary microscopists at the village malaria centers, trained and guided via institutional programs, some of them do not have a stable job and not enough economic resources for their personal and family needs, so the services that volunteers provide in these diagnosis centers are affected, and in other cases, they are closed.

“Microscopists must report weekly but they can't, so they must do it monthly or when they come to town because they have no economic income and no means of transportation. I accumulate a month

and I report the few datasheets I have, when I come here (local management office) and sometimes I get medication instantly, sometimes they give it to me after 8 days” (BV1, healthcare worker).

“I take a sample, fill out the datasheet, I do the color test, I read the plate and deliver results; in other words, I am the one who conducts the entire process” (BH1, healthcare worker).

Something that affects providing a suitable patient treatment at malaria centers is that the center runs out of anti-malaria medication; there have even been cases in which patients are prescribed antibiotics to treat the disease without prescribing the corresponding indicated anti-malaria medicine.

“We said: now that we have run out of medication. (...) what do we do? let's call somewhere else. (...) Then, the physician prescribed and gave the patient Clindamycin (300mg), like 28 or 21 oral capsules, I don't remember, in total, and to take it as a treatment. Then, they came to me, I did the control and it came out negative. But one is not satisfied with this, because the parasite may remain in some part of the body” (BH7, healthcare worker).

“Another difficulty is when we run out of medication, sometimes P. vivax can be found in pharmacies but not falciparum.” (BH1, healthcare worker).

Healthcare service communication barriers. Participants described service schedule mix-ups and documentation as communication problems in healthcare services; therefore, they express their disapproval sometimes during their interaction with healthcare workers.

“(...) the doctor told me to come (to the malaria center) to see if they were still taking patients because sometimes they have service until late hours and sometimes they didn't, (...) but they did not give me the schedule” (AHM6, service user).

“My appointment was at 6 in the morning (but actually) they started the thick drop testing at 9:00 am” (AHM2, healthcare service user).

“Perhaps service schedules, because sometimes you don’t know exactly until what time the malaria assistant works and 4/2 that also complicates access” (BH4, Health Care Service workers).

One of the many consequences of discontent regarding administrative matters of the services and the healthcare system for users and healthcare personnel is a negative attitude, evidenced by impatience and intolerance. Nevertheless, it is worth highlighting the positive attitude of many users and of healthcare personnel only seeking to conciliate so that there may be respect and better service.

“There are many impatient people who want service immediately. Then one sometimes thinks: wow, why are people like that- then there are people that say: - take it easy, go slow-, - they told me this- and I was desperate.” (BH5 female health care service worker).

“Sometimes people get very upset (...)”. “when the operating system is down, we, the Physicians, are upset.” (BH4, health care service workers).

During user - healthcare worker contact, it was evidenced that several users did not have reading-writing skills (in Spanish), and even some patients who belong to indigenous communities used dialects in oral communication different from Spanish. This represented one of the main patient-healthcare worker communication barriers mainly while getting healthcare.

“I studied up to fourth grade. I barely write my name (my wife does know how to read and write) and we are part of our indigenous community (...).” (AHM7, healthcare service user).

“I heard what the prescription says, and since my boy knows how to read and already finished the

fifth grade, I call him and he tells me what it says (the prescription): you take this like this and like this”. (AHF8, healthcare service user).

“People’s cultural level has influence (in communication difficulties) (...), there are groups of indigenous people, peasants, people who come from other provinces to work in the gold mines. (...), the people who come here generally are part of a very vulnerable population (...). people value more verbal than written intervention because many of them do not know how to read (...).” (BH3, health care service workers).

This has a direct influence in the difficulty of making several communities of the township of EL Bagre aware of malaria-related topics. For instance, when interviewing a patient and talking about that patient’s background (place and time in a malaria-endemic zone), education regarding sampling in suitable conditions and a reliable diagnosis to deliver appropriate specific treatment, the effects of not adhering to an anti-malaria treatment and the possible consequences when the disease gets worse, which could lead to death.

“(...) one has to ask the patient: Where do you come from? Where did you go on vacation? How long were there? because they can tell you: - oh no, I went to the Village yesterday-. No, (what one must ask is): “How many days ago did you go there? 15 days ago – so one starts like (thinking about malaria). But there are some doctors that lack this communication skills.” (BM1, healthcare worker).

Despite administrative difficulties inherent to services and user and healthcare personnel social cultural differences, one can see how healthcare service workers make a great effort to improve communication with users because they are aware of the barriers that patients must go through to have access to healthcare services. An example of this is that depending on the schooling level of users, healthcare personnel use the support of teaching materials, principally speaking and

using strategies that allow them to understand the information users supply, especially those who cannot read or write, and who belong to ethnic minorities that do not communicate in Spanish like the indigenous people.

"I understood everything she told me...". "(...) (I take the drug) in the order she told me. I must take it at the same time every day". regarding the delivery of the treatment, when they explain the treatment to me, explain more what was done here is not possible! "And this time, I really understood and I would like you to continue being that way and for people to be patient with us." (AHM2, healthcare service user).

"When new people come with fever, they generally do not know. (...) I (the doorman) ask them: if they want to take a malaria test, if they are going to the ER or want an appointment. Patients cannot be billed without a photocopy of their ID. (the malaria test) is completely free. We do not charge anything and you do not have to be a member." (BH2, service worker).

"I bill patients immediately and tell them to go to malaria (Laboratory), and they already know that there is a malaria sign (...) there are some who do not know and I explained it to them. particularly, I speak to them using clear simple language." (BH5, healthcare worker) (...)"

"For people that cannot read, I explain using pill colors and the little packages, and those who know how to read understand the prescription." (BH7, health care service worker).

Healthcare workers recommend receiving more training not only in clinical issues but also in strategies to communicate with users depending on their cultural differences including communication media that favor more closeness to the community like town radio stations and people like social leaders who know their communities' health care needs:

"One strategy is to be able to teach people according to their way of life" (BH6, healthcare worker).

"We have been trained on how to deal with people, users, how to provide good information, how to tell a patient where that patient must go." (BH5, healthcare worker).

DISCUSSION

In malaria-endemic zones, residents have big suspicions of having the disease when they have an acute febrile syndrome, which leads them to start various therapeutic routes including seeking institutional care. This study evidenced that most patients face constraints to access healthcare services, including specific malaria care services. These constraints are associated by other authors to social inequality which result from the State's lack of protection of fundamental rights including healthcare like Frenk and Arrivillaga (13, 20) have stated. We identified geographical barriers which represent one of the greatest difficulties, mentioned as an access problem to healthcare services inherent to participants' social-economic-cultural characteristics, and which make participants not attend healthcare centers promptly, and as a result of this the symptoms of the disease increase along with the risk of having a clinical complication. All this favors the use of ancestral or popular medicine or the irrational use of medication to temporarily relieve symptoms. These are practices that in some cases reduce parasitemia but produce incorrect malaria diagnostic test results (false negatives) when consulting at a healthcare center. Various studies have focused on detecting malaria diagnostic problems related to parasite characteristics or characteristics of the microscopic diagnostic technique itself (21, 22, 23) ignoring explanations related to the healthcare service processes. Qualitative studies in Colombia (24, 25, 26, 27) and in Peru (28) revealed that people have difficulties accessing healthcare services because of distance, transportation costs and availability,

communication barriers or an armed-conflict. This leads them to relieve their clinical manifestations in various ways; one of them is self-medication (6) wherever they may be, either at home or at work, with the effect described regarding parasitemia and diagnostics, affecting the prescription of a suitable anti-malaria treatment and demanding that the patient return the following day for a new test.

Almost all the patients reported that they had access to healthcare service through the subsidized health plan, so they consider that they have no economic constraints when consulting, except for traveling expenses which were mentioned as a common barrier in accessing healthcare. Nevertheless, people stated that upon arriving at the health care centers, they must surpass various administrative difficulties like not much outpatient appointment availability at the hospital which demands a great amount of waiting time, even days, to access healthcare services, diagnostic and treatment. Through these statements, it was perceived that displeasure was more noticeable in people who had to endure greater traveling time from distant places like villages. Patients' testimonies are worrisome regarding the fact that there is medication in inadequate conditions or an absence of a treatment indicated for malaria in villages that are far away from the town. This forces healthcare workers in those zones to prescribe non-indicated therapeutic treatment. These situations can lead to other problems including surcharges and greater time ailing from the disease, in addition to a negative effect upon the return to control appointments, and all of this without knowing the effects that deteriorate health. It is worth noting that despite the efforts that the administrative and healthcare personnel have made to provide prompt efficient healthcare services, there are difficulties inherent to the current Colombian healthcare model, constraints in the system, norms and institutions which lead to administrative barriers, which are out of the hands of the workers who provide health care services, just like Arrivillaga (20) and Vargas (29) have pointed out in Colombia.

The study identified that almost half of the patients had not finished basic or middle education and some of them had no reading-writing skills in Spanish. Furthermore, in their testimonies, healthcare workers stated that due to the existence of indigenous communities in the zone, they have had to provide medical services to several indigenous people who did not communicate (speaking or writing) in Spanish. This demands that users themselves go to healthcare centers with relatives or people close to them to translate for healthcare personnel. However, this was not a widely perceived barrier in this study. The above has influenced user-healthcare worker communication difficulties, and it has been noticed that it hinders teaching about malaria-related care, diagnostics, and treatment in communities of El Bagre (5). One of the main challenges that healthcare entities face when providing the service is interpersonal communication barriers (5), which is a product of cultural diversity and in particular the populations' cultural heterogeneity. In this study, patients mention difficulties when interacting with different staff members. This situation was among other causes the result of the discomfort caused by procedures that patients must follow, and which are listed as communication difficulties. It is known that in social interaction spaces, "communication via language" fulfills a great role because it becomes particularly important regarding the way a society reproduces; it is through language that people translate everything that takes place in their everyday life (30).

Malaria life experiences are conceived depending on the context patients live in; they must be interrelated with different subject matter found around them if they wish to find alternatives for their recovery, like seeking and going to healthcare service centers. These are spaces where cultural similarities and differences must be recognized like user-healthcare personnel language "to understand the expectations that each person has regarding the process, healthcare and illness perceptions represented in healthcare health-

patient interaction, patterns to evaluate therapeutic action quality and results, and the deployment of different behaviors regarding the disease” (10). A study, regarding malaria control in border zones, states that via language “a population’s express and manifest their disease logic”; a health-disease process, like malaria is lived locally, marking the importance of understanding and bearing in mind language “when conducting any type of approach and implementation of community programs. In this study, patients perceive as a communication barrier a lack or absence of information to access consultation or after it. Although it can be assigned as an administrative type of barrier, it may show that the system does not think of the needs patients have as active spokespeople. The intercultural contact capability of a program does not only require knowledge of the local language, it also needs to understand codes, thought systems, gesticulations and time expressed in local narratives” (5, 31). The above is materialized in the healthcare provider-user interaction during Healthcare Service. It is a space where a language becomes important for healthcare personnel to explain consultation, diagnostic and treatment processes, and for patients to understand the language used regarding results and concurrently recommendations given for the suitable use of the anti-malaria treatment.

Although the people in charge of performing diagnostics and delivering treatments mentioned the strategies they use so that communication is effective with patients, it was seen that in patients’ testimonies, there were some information gaps and even messages which were not very clear, related to self-medication, possible adverse effects, how to take anti-malaria medication (with which type of food) and repeating the test when the patient continues to be ill (control). The origin of this communication interference could be the result of the complexity of the information that is provided and a clash with pre-established ideas or a community’s own knowledge regarding these topics which could be contradictory, or aspects

that are not studied in depth in this research. Similar findings were identified in the Colombian Amazon region in a qualitative study (7), where participants expressed their displeasure because of the difficulties accessing anti-malaria diagnostics and treatment, and that the methodologies used in malaria workshops are inadequate since the “language” they use does not adapt to social-cultural situations or to local community situations. Nevertheless, this is part of a healthcare model which is fragmented and does not allow the system to guarantee totally the population’s fundamental right to healthcare.

CONCLUSIONS

This study evidenced different constraints that febrile patients face, and that they seek malaria diagnostic tests and healthcare for the disease. The study especially observed geographical barriers to access healthcare services and communication barriers related to patient-healthcare provider interaction. This study highlights the difficulties in offering service users adequate information. This study makes evident the need to explore mechanisms that facilitate prompt easy care for all patients with a febrile syndrome because each patient with malaria must be given healthcare services and diagnosed the same day the patient consults.

CONSTRAINTS AND RECOMMENDATIONS

Even though users’ testimonies were narrated in Spanish, there were social-cultural differences between the participants’ language and the researchers’ language. This demanded greater effort to understand information, and these differences can affect the interpretation of findings. This experience provided the possibility to understand the importance of language as a key aspect in researcher-participant communication, as well as to understand and interpret information. This not only favored the relationship with participants but

also the rigor of data collection, totally avoiding to disrupt what people wanted to express regarding the subject of the study, always respecting people's integrity, their way of expressing themselves, their feelings and their silences.

Priority must be given to communication strategies that use comprehensive language to facilitate giving the community information related to the disease and consultation procedures. It is necessary to highlight the need for visible useful information like healthcare service schedules, documents required and free treatment. Based on dialogue and on an interchange process of popular knowledge and biomedical scientific knowledge, the challenge is to create healthcare models that fulfill people's needs implementing strategies that link the various healthcare approaches based on structural transformations that include healthcare-system actors and communities, and this has enabled the establishment of foundations for a multicultural society project.

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