# Interpersonal challenges in surgical care provision in rural Mexico: A qualitative study

Valeria Macias,[a] Zulema Garcia,[a,b] William Pavlis,[c,*] Zachary Fowler,[d] Tarsicio Uribe-Leitz,[d,e,f] Hannah Gilbert,[g] Lina Roa,[d,h] and Mary-Jo DelVecchio Good[g]

[a]Compañeros en Salud, Ángel Albino Corzo, Mexico
[b]Centro Médico Nacional La Raza, Mexico City, Mexico
[c]University of Miami Miller School of Medicine, Miami, USA
[d]Program in Global Surgery and Social Change, Harvard Medical School, Boston, USA
[e]Center for Surgery and Public Health, Brigham and Women's Hospital, Boston, USA
[f]Epidemiology, Department for Sport and Health Sciences, Technical University of Munich, Munich, Germany
[g]Department of Global Health and Social Medicine, Harvard Medical School, Boston, USA
[h]University of Alberta, Edmonton, Canada

The Lancet Regional Health - Americas 2022;10: 100210
Published online 21 February 2022
https://doi.org/10.1016/j.lana.2022.100210

## Summary

**Background** Chiapas is among the states with the lowest access to health care in Mexico. A better understanding of the role of interpersonal relationships in referral systems could improve access to care in the region. The purpose of this study was to analyze the underlying barriers and facilitators to accessing surgical care at public hospitals run by the Ministry of Health in Chiapas.

**Methods** In this qualitative interview study, we performed semi-structured interviews with 19 surgical patients and 18 healthcare workers at three public hospitals in the Fraylesca Region of Chiapas to explore barriers and facilitators to successfully accessing surgical treatment. Transcripts were coded and analyzed using an inductive, thematic approach to data analysis.

**Findings** The five major themes identified as barriers to surgical care were dehumanization of patients, the toll of rehumanizing patients, animosity in the system, the refraction of violence onto patients, and poor resource coordination. Three themes identified as facilitators to receiving care were teamwork, social capital, and accompaniment.

**Interpretation** Health care workers described a culture of demoralization and mistrust within the health system worsened by a scarcity of resources. As a result, patient care is hampered by conflict, miscommunication, and feelings of dehumanization. Efforts to improve access to surgical care in the region should consider strategies to improve teamwork and expand patient accompaniment.

**Funding** Harvard University and the Abundance Fund provided funding for this project. Funding sources had no role in the writing of the manuscript or decision to submit it for publication.

## Resumen

**Antecedentes** Chiapas es uno de los estados en Mexico con el menor acceso a la atención médica, y a los servicios quirúrgicos. Una mejor comprensión del papel de las relaciones interpersonales en los sistemas de referencias podría mejorar el acceso a la atención medica en la región. El objetivo del estudio es analizar las barreras y facilitadores para acceder a la atención quirúrgica en los hospitales públicos pertenecientes a la Secretaria de Salud del estado de Chiapas.

**Método** En este estudio cualitativo, realizamos entrevistas semiestructuradas con 19 pacientes quirúrgicos y 18 trabajadores de la salud en tres hospitales públicos en la región de la Frailesca de Chiapas para explorar barreras y facilitadores para acceder al tratamiento quirúrgico. Las transcripciones se codificaron y analizaron utilizando un enfoque temático.

**Resultados** Las cinco barreras principales identificadas fueron la deshumanización de los pacientes, el costo a re humanizar pacientes, la animosidad en el sistema, la refracción de la violencia sobre los pacientes y la mala coordinación de recursos. Tres facilitadores para recibir cirugía fueron el trabajo en equipo, el capital social, y el acompañamiento.

*Corresponding author.
*E-mail address:* wwp7@med.miami.edu (W. Pavlis).

**Interpretaciones** Los trabajadores de la salud describieron una cultura de desmoralización y desconfianza en el sistema de salud que se agrava con la escasez de recursos. Como resultado se obtiene, conflicto, falta de comunicación, y sentimientos de deshumanización que empeoran la atención al paciente. Recomendaciones para mejorar el acceso a los servicios quirúrgicos en la región incluyen estrategias para mejorar el trabajo en equipo y ampliar el acompañamiento de los pacientes.

**Financiamiento** La Universidad de Harvard y the Abundance Fund proporcionaron fondos para este proyecto. Las fuentes de financiamiento no influyen en la redacción ni en la publicación del manuscrito.



**Keywords:** Surgical access; Mexico; Referrals; Qualitative; Rural surgery

## Research in context

### *Evidence before this study*

A literature search was conducted of the PubMed and Google Scholar databases. Search criteria included publications assessing the impact of interpersonal relationships and conflict on health care settings in the Americas. Articles published in English and Spanish were included. The search was performed between September 2020 and May 2021.

While there was significant evidence describing the effect of conflict among patients and health care workers in a variety of health care environments, the evidence describing the impact of such factors on hospital referrals in resource-limited settings was limited.

### *Added value of this study*

The findings of this study add significant value to the understanding of interpersonal conflict as a barrier to successful hospital referrals in resource-limited settings. This study is the first to measure the barriers and facilitators to hospital referrals in rural Chiapas. Patient and healthcare worker participants described a culture of mistrust and animosity in the health system that leads to poor patient care through a lack of resource coordination, miscommunication, and conflict.

### *Implications of all the available evidence*

The findings of this study can be used to address common barriers to surgical referrals in Chiapas. Policy makers in the region should examine ways to improve health system coordination, build teamwork, address interpersonal conflict, and expand patient accompaniment to improve access to surgical services. Furthermore, our study acts as a guide for future research on the role of interpersonal conflict in similar settings globally.

## Introduction

Surgical care is an essential part of universal healthcare and is needed to treat a wide range of conditions responsible for one-third of mortality globally.[1] Yet, it is estimated that five billion people worldwide lack access to surgical care that is safe and timely.[1] While access is lowest in low- and middle-income countries, factors such as geography, economic inequality, and structural violence play a role in creating disparities within countries as well.[2–4] As a result, expanding access to surgery and reducing these disparities has become a priority of health systems worldwide.[5,6]

Mexico is an upper-middle income country which provides universal health coverage to its population through a fragmented public and private system.[7] Chiapas is the poorest state in the country, with 75% of the state population living below the national poverty line.[8] This reality is reflected in the state's health system, where patients have difficulty accessing healthcare services despite the creation of *Seguro Popular*, a national insurance-based program that provided universal health coverage to those without formal employment in Mexico.[9] A comprehensive analysis of healthcare access and quality found Chiapas to have the lowest values of any state in the country, closer to the national average of neighboring Guatemala than Mexico.[10]

Achieving universal health care requires functional, coordinated surgical and referral systems. However, factors such as interpersonal conflict and poor teamwork in health systems can undermine such efforts.[11] Interpersonal conflict and poor communication been identified as a key element to clinical encounters between healthcare workers, specialties, and hospitals in many settings,[12–16] including Mexico.[17–20] Prior research has demonstrated the negative impact of these factors and others on referral systems in Latin America(21–23) and low-resource settings around the world.[24,25]

However, a lack of information on the impact of these factors on general surgery referral systems in rural, low-resource settings in Mexico remains. A greater understanding of patient and provider experiences in rural Chiapas could elucidate problems within the surgical system and possibilities for improvement in similar settings throughout the world. The purpose of this qualitative study was to analyze the underlying

obstacles and opportunities in accessing surgical care at public hospitals managed by the Ministry of Health in Chiapas, Mexico.

## Methods

This is a qualitative study that used semi-structured interviews with surgical patients and healthcare workers (HCWs) in public hospitals in Chiapas, Mexico.[26] This research was conducted in collaboration with a local organization, Compañeros en Salud Mexico (CES), and the Ministry of Health (MOH) in Chiapas. This study was approved by Harvard IRB, the *Instituto Tecnológico y Estudios Superiores de Monterrey* (ITESM) ethics committee, and the Chiapas MOH ethics review board.

### Setting

The MOH in Chiapas is divided into ten jurisdictions. This study focuses on jurisdiction IV, known as the *Fraylesca* region, which includes five municipalities, over 60 medical units, and a population of nearly 300,000.[27] The *Fraylesca* region is a remote area in the state of Chiapas with no paved roads to the majority of the communities. Transportation is hard to find and during the rainy season it is nearly impossible to travel. Communication is difficult, as phone signal and internet connection are sparse. The inhabitants of this region come from the Mam indigenous group, who in the early 20th century underwent a process called Mexicanization in which the Department of Social Action, Cultural and Indigenous Protection forced them to leave their indigenous traditions and assimilate into Mexican culture.[28,29] Since then, coffee growing has been their primary means of survival. In 2012 a fungal plague called *la roya* (coffee rust) invaded this region, and as a result the population has suffered from a worsening economic situation.[30] Most of the population from this region lives in conditions of poverty, and over one quarter lives in extreme poverty. High rates of marginalization and illiteracy have also been reported for this region.[30]

### Subjects

The interviews were performed by two authors (VM and ZG), who are both female physicians from Mexico. The interviewers became interested in the topic during their time working as physicians at health clinics in the communities of interest in this study. At the time of the study, VM was a student pursuing a Master of Medical Sciences in Global Health Delivery and ZG was a physician supporting the research project.

Researchers began sampling by asking community health workers, nurses, or general practitioners if they could direct them to patients in the community in need of surgery or who had received surgery since *Seguro Popular* was installed. A snowball technique was employed whereby at the end of interviews, participants were asked if they knew of anyone else in the community who had a similar problem or experience. Inclusion criteria required that patients be adults (> 18 years) who had required general, gynecologic, or orthopedic surgery. Patients requiring referral to a third-level facility and obstetric patients were excluded from this study. The researchers did not have a direct relationship with the patients prior to the study. The researchers performed home visits in order to be introduced to the patients and explain the study, a culturally appropriate practice in the region.

Purposive sampling was used to select health care worker participants with knowledge of the referral system at rural clinics and hospitals with a surgeon in the region.[31] The researchers approached participants in person at their place of work to describe the study and ask for their collaboration. This practice is considered appropriate in the region and the research team allowed for potential participants to consider the proposal and decide at a later time.

### Data collection

The interview guides for patients and HCWs were pilot tested, and guides were revised accordingly. Prior to interviews, the researchers read and obtained verbal consent from patient participants. Verbal consent is appropriate among this patient population due to low literacy and a cultural mistrust of signing documents in the region.

After obtaining verbal consent, researchers conducted in-person semi-structured interviews with patients on obstacles and opportunities experienced when accessing surgical treatment. See Appendix 1 for the interview guide. Patients chose an interview setting where they felt safe and comfortable, usually in a private room in the participant's house. Non-participants were occasionally present while performing interviews but did not stay for considerable durations of the interviews.

HCW participants chose a setting where they felt comfortable for interviews, usually their private office within the hospital. No non-participants were present and interruptions were rare. The study was explained and written consent obtained from each participant. Semi-structured interviews were performed on barriers and facilitators to successfully accessing surgical treatment in the region. To ensure high-quality, credible answers, interviewers probed extensively for specific, detailed answers. The interview guide can be found in Appendix 1.

Interviews were audio recorded, and notes were taken with permission from participants. Only one healthcare participant refused to be recorded. Notes included main discussion points and observations of non-verbal data during each interview. No names or contact information were recorded. Interviews took

| | Did not receive surgery | Received surgery at public facility | Received surgery at private facility | Total |
|---|---|---|---|---|
| **Total Participants (%)** | 11 (58%) | 6 (32%) | 2 (11%) | 19 |
| **Female (%)** | 9 (82%) | 4 (67%) | 1 (50%) | 14 |
| **Mean age (Min, Max)** | 44 | 57 | 51 | 50 (22,74) |
| **Surgery Needed** | | | | |
| Appendectomy (%) | 5 (71%) | 2 (29%) | 0 (0%) | 7 |
| Cholecystectomy (%) | 2 (40%) | 1 (20%) | 2 (40%) | 5 |
| Hernioplasty (%) | 0 (0%) | 3 (100%) | 0 (0%) | 3 |
| Pelvic Floor Repair (%) | 2 (100%) | 0 (0%) | 0 (0%) | 2 |
| Cystectomy (%) | 1 (100%) | 0 (0%) | 0 (0%) | 1 |
| Tubal Ligation (%) | 0 (0%) | 1 (100%) | 0 (0%) | 1 |
| Varicocelectomy (%) | 1 (100%) | 0 (0%) | 0 (0%) | 1 |
| **Occupation** | | | | |
| Housework (%) | 9 (75%) | 2 (17%) | 1 (8%) | 12 |
| Farmer (%) | 2 (50%) | 1 (25%) | 1 (25%) | 4 |
| Construction Worker (%) | 0 (0%) | 1 (100%) | 0 (0%) | 1 |
| Day Laborer (%) | 0 (0%) | 1 (100%) | 0 (%) | 1 |
| Community Health Worker (%) | 0 (0%) | 1 (100%) | 0 (0%) | 1 |

***Table 1*: Characteristics of patient interviewees.**

from one to two hours. The Interviews were recorded and transcribed in Spanish. Only the results were translated to English. Interviews were not repeated and transcripts were not returned to participants for comment.

### Data analysis

Data analysis used an inductive conventional content analysis approach in order to develop a set of categories that described the barriers and facilitators to successfully accessing surgical treatment.[32] All data were collected prior to the analysis. Following a complete review of the dataset, a subset of transcripts were open coded by VM to devise a draft code book, in which each code was labelled, defined and supported with quotes from the data. HG and VM met regularly to discuss the emerging codenames and definitions; the draft codebook was revised through an iterative and collaborative process that involved continually revisiting the data, and revising the code names and definitions through discussion until consensus was achieved. The draft codebook was then piloted on separate interviews and further revised into a final codebook. The final codebook was used to code the entire dataset using MAXQDA Analytics Pro 12 qualitative data management software.

The next step in the analysis was to sort the coded data by topics corresponding to the code book codes. Sorted in this way, the data revealed thematic concepts based on observable content commonalities. These commonalities provided the basis for developing categories that would describe the concepts as study results. Categories were developed by labelling each concept, elaborating the concept through a descriptive text, and providing quotes to illustrate the concept and show how it appeared in the data. The initial set of categories were reviewed by the team and the concept names and descriptions were further refined to improve clarity. Examples from this process (codebook, Draft Level 1 categories, and Level 2 categories) can be found in ***Appendix 1***. This process resulted in the final set of descriptive themes of key barrier and facilitators, presented in the results below. Participants did not provide feedback on findings.

### Role of the funding source

Funding sources had no role in the study design, data collection, data analysis, writing of the manuscript, or the decision to submit it for publication. All authors had full access to all the data in the study and accept responsibility to submit it for publication.

## Results

A total of 19 patients and 18 healthcare providers were interviewed for this study. Characteristics of the patient and healthcare worker samples can be found in Table 1 and Table 2, respectively. Age data was not collected for 4 patient participants. No mean age for healthcare workers is reported as age was not collected for enough participants. Only one healthcare provider refused to participate; no patients refused to participate. No participants dropped out of the study. Themes have been organized into two sections corresponding to barriers and facilitators to accessing surgical care (Figure 1).

| Healthcare providers | Male (%) | Female (%) | Total |
|---|---|---|---|
| Social Service Physicians | 2 (67) | 1 (33) | 3 |
| General Practitioners | 1 (50) | 1 (50) | 2 |
| Specialists | 4 (100) | 0 (0) | 4 |
| Social Worker | 0 (0) | 5 (100) | 5 |
| Community Coordinator | 1 (100) | 0 (0) | 1 |
| Ambulance Driver | 1 (100) | 0 (0) | 1 |
| Referrals Companion | 1 (50) | 1 (50) | 2 |
| **Total** | **10 (56)** | **8 (44)** | **18** |

***Table 2*: Characteristics of healthcare worker interviewees.**

## Barriers

*Dehumanization leads to disengagement*

At every step of the system, participants described feeling neglected by HCWs. They described security guards unwilling to allow patients in pain to enter hospitals, social workers denying requests for specific referrals, and surgeons acting as *"bravos"* (uncontrollable or aggressive), refusing to do surgeries when it does not suit them. This process led patients in the study to lose trust in the system and eventually avoid it altogether. Patients believed a doctor to be good when, rather than dehumanizing them, they showed interest in their health, received them when they came to the facility, or provided emotional support.

> *"Yes in the hospitals (...) they have treated my daughter-in-law very poorly. Doctors are there, only looking at their phones. The poor patients may be screaming and they do not pay attention to them. I do not know if they play deaf or what, but they are not looking. I lived through this with her."* -Male patient, >70 years old, construction worker

> *"I lost trust in the hospitals because when my children have gotten sick I take them here [CES clinic]. If there is no one here I take them to a private doctor, even if I am left without any money, because if I take them to the hospital, they either give them something fast just to help with the pain or tell me to send them to another place."* -Female patient, housewife and coffee farmer

*The toll of rehumanizing patients*

HCWs described how the health system wears them down and trains them to have little interest in the patient. Providers recognize that the more they connect with a patient, generating a special empathy, the more they are able to make an extra effort to remove the barriers keeping them from receiving surgery. However, participants acknowledged that the complex social problems patients face leads to provider fatigue and emotional exhaustion.

> *"It is a lot of frustration that we live with, and lots of sadness too. Maybe in one community you will see a difficult case once a month or twice a month. We see 100 serious cases every month. You see things that you can solve and things that you cannot solve and very difficult family situations. So when you bond with a patient (...) it is impossible not to make an emotional connection. It is tiring and a heavy load."*-Female physician and referral coordinator, 26 years old

*Animosity in the system*

High health expenditures and negative attitudes from HCWs create conflicts between providers and patients, and amongst the providers themselves. HCWs described a pervasive lack of companionship and trust in each other's competency that leads to poor communication between hospitals and across shifts within the same hospital. This can cause surgical referrals to be rejected, delaying patient care. This lack of teamwork in the hospital system then generates social conflict and threats of violence as patients become frustrated with the lack of care received. HCWs explained that they have broached this issue with their superiors but feel no meaningful action has been taken to improve teamwork and communication.

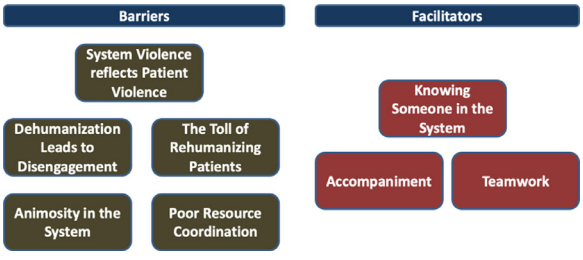


**Figure 1.** Interpersonal barriers and facilitators to surgical care.

*"If the hospital rejects the patient, their fear increases and anger is added, because they are thinking, 'if I am really ill, why are they rejecting me?' The stress that this generates in the family generates conflict with the referring hospital. This type of attitude generates social conflict. We get threats from patients all the time. We are going to close the hospital! We are going to burn the hospital! We are going to take the hospital! This happens because when patients are referred they are told, 'your doctors are lazy, your doctors do not know how to do things.' So patients return to the hospital with a very defensive attitude. They think we are lying to them."*

The participant later elaborated on this tension, and how poor responsiveness from leadership has led to a lack of faith in the system:

*"I get very angry because I have talked with the jurisdictional officer, with the people in charge of reproductive health and they always say — We will talk about it — and there have been many jurisdictional officers, and it is always the same. There is no companionship among hospitals. It is like we are at different headquarters and we are competing amongst each other, to see who is tougher. We are not a team. Like if we were using referrals to bother one another."* -Female physician, general practitioner, 42 years old

*Violence in the system refracts to patients*

Many HCWs expressed the sentiment that the frustration and fear accumulated in providers was being inflicted on patients. Physicians feel they are inserted into a culture of conflict during their training, where surgeons are specifically taught to be blunt and aggressive, but this process accelerates when they enter the health system. In the system, economic incentives become skewed causing an attitude of "minimum effort" to predominate. This culture is compounded by bureaucratic challenges and scarce resources. For example, in practice, referrals will not be accepted if the patient goes alone. Referring physicians are required to physically ride along with patients to the receiving hospital - even when they are the only doctor at the referring hospital. Participants explain that these forces and accumulated slights produce an environment that is marked by anger, frustration, and fear - and this is refracted onto patients:

*"But yes, in the hospital I feel that people are apathetic, quite apathetic. In the emergency department people are frustrated, because they'll have several patients who were victims of violence, and by professionalism and principle they should find out what happened to the patient. But what happens, that when they get overwhelmed, they get lost, and they begin to treat the patient badly. One day I remember that the doctor, I am not going to say his name, he was very violent. He threw a fit and I said: doctor calm down, remember that you're the doctor, and he's [the patient]."*-Social worker, female

*"The system is violent to [HCWs] and inside of that system if [HCWs] are being "violentados" (the feeling of violence being inflicted upon oneself) there is nothing strange in that this violence will then be reflected on the patient."*-Male social service physician, 24 years old

*Poor resource coordination*

A lack of coordination of human and material resources exacerbates the existing scarcity of resources within the health system. Often patients arrive at a referral hospital to find that the schedules of the surgical personnel do not align, and the surgery cannot take place, or a prolonged wait between appointments means a patient's diagnostic tests have become outdated. The lack of coordination in scheduling, diagnostic tests, personnel, and hospital resources becomes an overwhelming barrier for patients. HCWs explained that it is essential to know where resources are in the system in order for a referral to be successful, but often such information is absent or poorly understood. Furthermore, communication breakdowns exist within hospitals and between shifts, hampering the effective passing of clinical information, and sometimes resulting in patients not completing their treatments.

*"One always needs to see its limitations, do not do things just like that. For example, why will you send a patient to the hospital to get surgery if you know there is no anesthesiologist? If the patient has [a low blood count] you need to refer him, but if there is no blood bank where you are sending him, what is the point? It is pointless. You have to be practical. That is what you learn over time. See where the resources are, optimize resources. You need to make things practical."*-General Surgeon, Male, 49 years old

*"On Saturday a doctor arrived and he told us, you know what, we are going to release you. I told him no! I do not want you to release me. I am not well. I have not received my surgery yet. I do not want to have another complication, I am worried, I do not want to die. He said- we have to release you. You are using a bed that other people need and your condition is not serious, you are better now, you are out of what you had [pancreatitis secondary to a stone in the gallbladder] and there are other people that are worse (. . .) the nurse came and told me how is it that they are releasing you? I had instructions to leave you fasting to do more lab work."* -Female patient, housewife, 22 years old

## Facilitators

*Team work*

Participants consistently described the effect of good teamwork on bringing multidisciplinary teams

together, working towards the same goal, and coordinating to overcome resource shortages. Many participants noticed that leadership and teamwork are central to this process. For example, one hospital director oversaw what one participant viewed as some of the best years in the hospital. The director worked to develop an environment of mutual respect and service. Another example of teamwork that was highlighted by participants is how the use of WhatsApp, a mobile messaging application, allowed internal medicine and surgery services to better coordinate referrals.

> *"[The hospital director] had a devotion, and people respected him. Nobody could take advantage. When people saw him they would start shaking. In that time there were health care workers that were drunks and imbeciles but they had so much respect for him that they would do things right and the hospital progressed."* -General practitioner, female, 43 years old

> *"When serious patients come to the emergency area (. . .) at the end we are a health team. In some way we try to coordinate together with the anesthesiologist the activities that each person should do. (. . .) working as a multidisciplinary team."*

The same participant later expanded on a specific strategy that improved teamwork.

> *"The internal medicine physician opened a space, so we will start working every Monday to do pre-surgical evaluations with him. By doing that, we will be able to give more fluidity to surgeries."*-Surgeon, male, 41 years old

*Knowing someone makes a difference*

Patients and health care providers both described how having social capital in the form of a family or community member to advocate for a patient can help facilitate the referral process. A "*recomendación*" is a recommendation letter or phone call from a person of influence in the community asking healthcare providers to pay special interest to this patient. A "recomendación" from someone with political power can solve many potential barriers, from finding transportation and resources to persuading surgeons to perform a surgery. Having a HCW, especially a physician, as an advocate is a particularly powerful way to jump barriers within the bureaucratic system.

> *"He told the mayor that they did not want to do surgery on my daughter-in-law because of this and that reason. The mayor replied, 'put the social worker on the line.' He told the social worker, 'look, I sent you a document where it said that I was recommending her a lot. They are people of scarce resources from my municipality. They have been running around so much, and they have nothing left.' (. . .) The social worker replied, 'do not worry, I will take care of your countrymen, I will talk with the doctor right now.' She called the doctor and told him 'do the favor and do the surgery on this lady, they recommended her to me a lot. She is my patient, please do the surgery'."* -Patient, female, housewife and coffee farmer

> *"What I am trying to really say is that what you need are contacts so that the problem can be solved. Without contacts. . . no. Following the traditional bureaucratic system is [almost impossible]."*-Social service physician, male, 25 years old

*Accompaniment*

Patients and HCWs explained how a doctor or nurse accompanying a patient can help facilitate their referral. Participants describe how no one, not even social workers managing referrals, understands the complex system. This makes navigating care physically and emotionally burdensome for patients. HCWs can eliminate potential communication barriers and advocate for their patients. However, limited staffing often makes it impossible for HCWs at hospitals to accompany their patients. Compañeros en Salud (CES) has a Right to Health Care program that uses an accompaniment model to help facilitate referrals for their patients in the region. They believe that by accompanying patients they can help remove potential conflict or miscommunication from the encounter.

> *"I am sure that she is a patient, that if she had arrived by her own means to the hospital, they would not have accepted her. Actually, they did not even want to hospitalize her that night even though she was pregnant and she was bleeding! So I believe that's why we go, to facilitate and become the necessary bridges."* -Social service physician, female, 26 years old

> *"Accompaniment means many things. . .It is to go with a patient to the outpatient clinic to engage in a dialogue with physicians and reach an understanding of what would be the easiest way to solve the patient's medical problem. Making sure the physician does not feel threatened or invaded, they see you as support."* -CES Right to Health Care Program coordinator and physician, female, 27 years old.

## Discussion

This study identifies several key areas of interpersonal communication and teamwork that affect surgical care delivery in Chiapas, Mexico. In a state in which the majority of people live in poverty and the healthcare system faces challenges with coordination and communication, the themes outlined in this work demonstrate the negative impact of dehumanization, burnout, animosity, violent culture, and poor resource coordination.

Elements associated with better access to surgery were also elucidated by participants, including teamwork, personal connections outside of formal mechanisms of communication, and accompaniment. As the importance of surgical care in achieving UHC is increasingly recognized, it is necessary to understand factors that lead to poor access to care.

The communication gap between providers and patients in this study leads to patients feeling undermined and ignored when they access the system, which occurs in a context of structural violence and social injustice. Patients blame HCWs and engage in social conflicts, and HCWs feel overwhelmed, unappreciated, and ignored by their superiors. The communication barrier stems from this complex relationship, in which patients do not understand the pressure and conflict among providers, and providers do not understand the biosocial challenges that patients have experienced to reach care (Figure 2). The limited perceptions of both groups results in judgement and poor communication. These challenges were overcome when patients had personal connections with HCWs, administrators, and politicians. However, it should be noted that this form of social capital leads to inequitable access to care, as many patients cannot access networks of people of influence.

Participants in this study described how identity formation during medical school and residency training drastically changed their orientation and behavior. They explained that they became more aggressive, because the specialty demanded it. Health care providers also described how they began to lose their humanity. The tense environment in the hospitals is created not only by the medical training, but also by internal dynamics of social norms. This local moral world contributes to the dehumanization of patients and loss of commitment from health care providers. Even though local moral worlds vary across settings, the findings that HCWs feel overwhelmed, and when working with very few resources encounter moral and ethical dilemmas, are universal as described by Good *et al*, "*. . .the very moral foundations of medicine as a scientific and caring profession are called into question.*"(33)

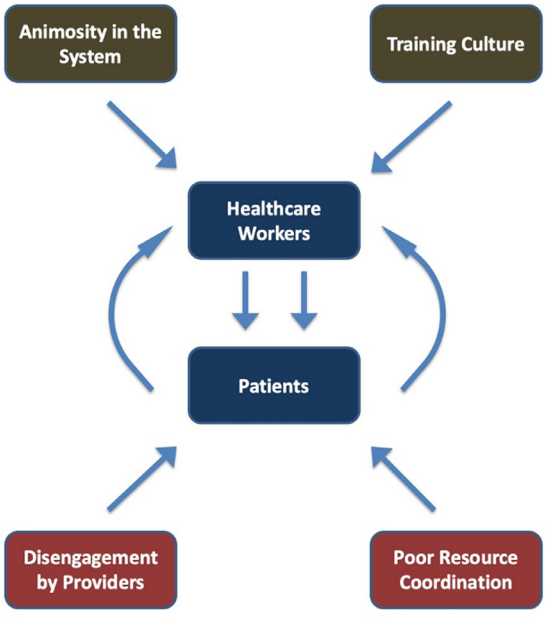


**Figure 2.** Factors perpetuating violence within the local context.

In addition to the stressful social environment that health care providers experience everyday, they also often lack the tools needed to do their jobs effectively. Physicians describe how they feel *violentados* (a visceral reaction when one feels violence being inflicted upon them) when they have no tools, no medication, and little time to be with each patient. They recount having trained for years to come to the hospital to feel powerless, because they do not have the necessary resources to provide appropriate care. Their frustration accumulates, and then it is reflected on the patients.

Our findings demonstrate how conflict is present in daily hospital interactions - not only with patients, but also with other health care providers. They describe work as a constant source of anxiety and violence. Economic scarcity and disease entities have also been shown to have a direct impact on medical culture, training, and education, and patient care.[33] A lack of resources, including medications and equipment, combined with patient needs and volumes that are impossible to manage, results in demoralization and burnout.[34]

These findings are consistent with prior research on referral systems in Latin America. A cross-sectional study of public health referral systems in six Latin American countries found poor communication and coordination in all countries.[21] This study highlighted limited overall coordination in Mexico specifically and identified disagreements over inappropriate referrals secondary to mistrust between physicians as a key limiting factor. Similar to the experience of healthcare workers feeling *violentados* in Chiapas, two qualitative studies examining referral systems in Brazil and Colombia found that poor working conditions cause staff to become overworked and unable to utilize coordination mechanisms.[22,23] These shared findings are consistent with relational coordination theory, which discusses the importance of mutual respect, shared knowledge, and relationships over mechanistic approaches to improving coordination.[35] The consistency of these findings highlights the importance of human factors in coordination of referral systems for the provision of surgical care.

This research also demonstrates a cycle of violence among surgical patients and providers, which has also been observed in maternal healthcare in Mexico. In

Veracruz, interpersonal hierarchies present between obstetric patients and providers led to dehumanization, devaluation, and distrust. In contrast to our study, this was noted to be a manifestation of underlying prejudice and discrimination toward patients.[36] In the context of *Seguro Popular*, patient perceptions of aggressive behavior and verbal abuse have also been reported when receiving maternal health services and has been described as the result of stigmatization of this patient population.[20] Other work in Mexico has suggested that conflicts between providers and patients are the result of social hierarchies that marginalize patients, as well as healthcare delivery structures that lead to overwhelming patient volumes.[19] Interpersonal conflicts among different types of HCWs have been identified as sources of demotivation among providers of other specialties and settings as well. Aberese-Ako *et al* found that in Ghana conflicts arose between anesthetists and physicians in the setting of unequal power and distrust, and this dynamic compromised teamwork and led to poor responses to patient needs.[15] Qualitative studies in Brazil and Canada have also shown that work overload, lack of professional support, disengagement, and poor communication led to conflict and aggression in emergency department settings.[13,14]

Strategies to improve behavioral aspects of surgical care provision have targeted areas identified in this study. The Non-Technical Skills for Surgeons (NOTSS) curriculum targets situation awareness, decision making, communication and teamwork, leadership, and task management and measures performance in each domain.[37] While it has been studied in Europe and the United States, it has also been shown to be applicable to the context of surgical systems in Rwanda.[38,39] A unique NOTSS framework for variable resource settings was developed through observations and interviews and was shown in Rwanda to significantly improve providers' knowledge and attitudes in these domains.[37,40] If programs such as this are to be expanded to other regions of the world, context specific barriers need to be understood in order to maximize their impact. A validated tool has also been recently developed to measure conflict among HCWs and improve relationships across clinical specialties and settings. This tool measures threatening behavior, mistrust of providers, and contradictory communications.[12] Consistent with these themes, CES has developed an interprofessional program to improve teamwork and cohesion among providers with different roles and backgrounds.[41] Both the NOTSS curriculum and the CES interprofessional program could improve teamwork, trust, and communication within the surgical system. These changes could help address the systemic, interpersonal factors that have led to dehumanization, poor resource coordination, and overall poor patient care.

Additionally, programs that target patient accompaniment in the region have improved patient outcomes. The Right to Health Care Program from CES has connected over 550 patients to secondary and tertiary care by coordinating medical referrals, providing accompaniment through the process, and offering financial support for medical and non-medical expenses.[42] A recent analysis found that the program delivered a significant health benefit to the target population and compared favorably to other interventions and guidelines on a cost-per-QALY basis.[42] Further expansion of such a program through MOH support could facilitate referrals and improve outcomes in a cost effective manner.

We acknowledge the following limitations of this qualitative study. This study was conducted in the fourth jurisdiction of the Ministry of Health of Chiapas, where the social and economic situation presents unique challenges. These results, therefore, may not be generalizable to other regions of Chiapas or Mexico. However, the authors have worked in diverse settings and believe similar challenges are encountered around the globe. The participants in this study were enrolled in *Seguro Popular*, which was replaced in January 2020 by *INSABI* (Instituto de Salud para el Bienestar). While this program may bring different challenges than those identified in this study, the majority of the system inputs remain unchanged. The largest difference is a shift in funding mechanisms.[43] We also did not interview nurses who play a key role in the care of surgical patients. Additionally, while many challenges at the level of the individual and the hospital were identified, some of these problems were reported by participants to originate from the level of the jurisdiction and state. To better understand this, perspectives need to be explored among managers and policy makers.

This qualitative study identified barriers to surgical care such as dehumanization, animosity, burnout, conflict, and poor resource coordination. Meanwhile, facilitators such as accompaniment, teamwork, and social capital improved access to surgery in the region. These findings, consistent with previous research in other settings, highlight the importance of interpersonal factors in surgical referral systems. Future research should study the perspectives of a more diverse group of stakeholders, such as nurses and health policy makers. Furthermore, more research needs to be done to measure the effectiveness of implementation of teamwork building and accompaniment programs on coordination in surgery referral networks in similar settings.

## Conclusion

Chiapas is among the Mexican states with the greatest health disparities, and patients seeking surgical care face a multitude of challenges. The referral process often leading to adequate surgical care is affected by interactions and relationships among HCWs and patients. In this qualitative study of HCWs and surgical patients in Chiapas, the factors that compromised the referral process

were dehumanization, animosity and violence in the system, and poor resource coordination. Conversely, elements of interpersonal communication that improved the referral process and patient care were teamwork, social capital, and accompaniment. These findings reflect the importance of interpersonal factors in the success of surgical referral systems in low-resource settings. Efforts to improve access to surgical care in the region should consider strategies to improve teamwork, such as the NOTSS curriculum, and expand patient accompaniment, such as the CES Right to Health Care Program.

## Contributors

Valeria Macias: Conceptualization, Data Curation, Formal Analysis, Funding Acquisition, Investigation, Methodology, Project Administration, Visualization, Writing - Original Draft, Writing

Zulema Garcia: Conceptualization, Investigation, Data Curation, Writing - Review & Editing

William Pavlis: Visualization, Project Administration, Writing - Original Draft, Writing - Review & Editing

Zachary Fowler: Conceptualization, Data Curation, Investigation, Project Administration, Visualization. Writing - Original Draft, Writing - Review & Editing

Tarsicio Uribe-Leitz: Conceptualization, Supervision, Writing - Review & Editing, Validation

Hannah Gilbert: Conceptualization, Data Curation, Formal Analysis, Methodology, Writing - Original Draft, Writing - Review & Editing

Lina Roa: Conceptualization, Validation, Writing - Review & Editing

Mary-Jo DelVecchio: Conceptualization, Formal Analysis, Methodology, Supervision

Valeria Macias, Zulema Garcia, and Hannah Gilbert have verified the underlying data.

## Data sharing statement

Data from this study, including individual participant data, the data dictionary, and related documents, will be made available upon personal request on a case-by-case basis.

## Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Acknowledgements

The Harvard Mexico Foundation, the David Rockefeller Center for Latin American Studies, the Abundance Foundation, and the National Council of Science and Technology of Mexico provided funding for this project. Funding sources had no role in the study design, data collection, data analysis, writing of the manuscript, or the decision to submit it for publication. All authors had full access to all the data in the study and accept responsibility to submit it for publication.

## Supplementary materials

Supplementary material associated with this article can be found in the online version at doi:10.1016/j.lana.2022.100210.

## References

1 Meara JG, Leather AJM, Hagander L, et al. Global surgery 2030: evidence and solutions for achieving health, welfare, and economic development. *Lancet*. 2015;386(9993):569–624.
2 Ahmed O, Mealy K, Kelliher G, Keane F, Sorensen J. Exploring geographical variation in access to general surgery in Ireland: evidence from a national study. *Surgeon*. 2019;17(3):139–145.
3 Crandall M, Sharp D, Unger E, et al. Trauma deserts: distance from a trauma center, transport times, and mortality from gunshot wounds in Chicago. *Am J Public Health*. 2013;103(6):1103–1109.
4 Vissoci JRN, Ong CT, De Andrade L, et al. Disparities in surgical care for children across Brazil: use of geospatial analysis. *PLoS ONE*. 2019;14(8):1–15.
5 Spiegel DA, Abdullah F, Price RR, Gosselin RA, Bickler SW. World health organization global initiative for emergency and essential surgical care: 2011 and beyond. *World J Surg*. 2013;37(7):1462–1469.
6 World Health Organization. *Strengthening Emergency and Essential Surgical Care and Anaesthesia as a Component of Universal Health Coverage Report by the Secretariat*. 51. World Health Organization; 2015:16–18. Provisional Agenda Item
7 The World Bank. World Bank Country and Lending Groups [Internet]. Data Help Desk. 2022. Available from: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups.
8 Instituto Nacional de Estadística y Geografía. *Porcentaje de la población en situación de pobreza extrema (Porcentaje de población)*. Instituto Nacional de Estadística y Geografía; 2018. [Internet] Available from: https://www.inegi.org.mx/app/indicadores/?ind=6200116870&?ag=07&tm=8#divFV6200116870.
9 Frenk J, González-Pier E, Gómez-Dantés O, Lezana MA, Knaul FM. Comprehensive reform to improve health system performance in Mexico. *Lancet*. 2006;368(9546):1524–1534.
10 Global Burden of Disease Collaborative Network. Global Burden of Disease Study 2016 (GBD 2016) Healthcare Access and Quality Index Based on Amenable Mortality 1990–2016. Institute for Health Metrics and Evaluation. 2018.
11 Kruk ME, Gage AD, Arsenault C, et al. High-quality health systems in the sustainable development goals era: time for a revolution. *Lancet Glob Health*. 2018;6(11):e1196–e1252.
12 Forbat L, Mnatzaganian G, Barclay S. The healthcare conflict scale: development, validation and reliability testing of a tool for use across clinical settings. *J Interprof Care*. 2019;33(6):680–688.
13 Chan T, Bakewell F, Orlich D, Sherbino J. Conflict prevention, conflict mitigation, and manifestations of conflict during emergency department consultations. *Acad Emerg Med*. 2014;21(3):308–313.
14 Lancman S, Mângia EF, Muramoto MT. Impact of conflict and violence on workers in a hospital emergency room. *Work*. 2013;45(4):519–527.
15 Aberese-Ako M, Agyepong IA, Gerrits T, Van Dijk H. I used to fight with them but now I have stopped!: conflict and doctor-nurse-anaesthetists' motivation in maternal and neonatal care provision in a specialist referral hospital. *PLoS ONE*. 2015;10(8):1–20.
16 Kim S, Bochatay N, Relyea-Chew A, et al. Individual, interpersonal, and organisational factors of healthcare conflict: a scoping review. *J Interprof Care*. 2017;31(3):282–290.
17 Ortiz-León S, Jaimes-Medrano AL, Tafoya-Ramos SA, Mujica-Amaya ML, Olmedo-Canchola VH, Carrasco-Rojas JA. Experiences of bullying in medical residents. *Cir Cir*. 2014;82(3):290–301.
18 Colmenares-Roa T, Huerta-Sil G, Castañeda CI, Lino-Pérez L, Alvarez-Hernández E, Peláez-Ballestas I. Doctor-patient relationship between individuals with fibromyalgia and rheumatologists in

public and private health care in Mexico. *Qual Health Res*. 2016;26 (12):1674–1688.
19 Smith-Oka V. Microaggressions and the reproduction of social inequalities in medical encounters in Mexico. *Soc Sci Med*. 2015;143:9–16.
20 Santiago RV, Monreal LA, Rojas Carmona A, Domínguez MS. If we're here, it's only because we have no money." discrimination and violence in Mexican maternity wards. *BMC Pregnancy Childbirth*. 2018;18(1):1–10.
21 Vázquez ML, Vargas I, Garcia-Subirats I, et al. Doctors' experience of coordination across care levels and associated factors. A cross-sectional study in public healthcare networks of six Latin American countries. *Soc Sci Med*. 2017;182:10–19.
22 Vargas I, Mogollón-Pérez AS, De Paepe P, Ferreira da Silva MR, Unger JP, Vázquez ML. Barriers to healthcare coordination in market-based and decentralized public health systems: a qualitative study in healthcare networks of Colombia and Brazil. *Health Policy Plan*. 2016;31(6):736–748.
23 Vargas I, Mogollón-Pérez AS, De Paepe P, da Silva MRF, Unger JP, Vázquez ML. Do existing mechanisms contribute to improvements in care coordination across levels of care in health services networks? Opinions of the health personnel in Colombia and Brazil. *BMC Health Serv Res*. 2015;15(1):213.
24 Ofosu B, Ofori D, Ntumy M, Asah-Opoku K, Boafor T. Assessing the functionality of an emergency obstetric referral system and continuum of care among public healthcare facilities in a low resource setting: an application of process mapping approach. *BMC Health Serv Res*. 2021;21(1):402.
25 Kamau KJ, Osuga BO, Njuguna S. Challenges facing implementation of referral system for quality health care services in Kiambu County, Kenya. *Health Syst Policy Res*. 2017;04(01). [Internet][cited 2021 Nov 8]. Available from: http://www.hsprj.com/health-maintanance/challenges-facing-implementation-of-referral-system-for-quality-health-care-services-in-kiambu-county-kenya.php?aid=18512.
26 Corbin J, Strauss A. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theorty*. Thousand Oaks: Sage Publications; 1998.
27 Chiapas: Gobierno del Estado. *Lineamientos para la Programación y Elaboración del Presupuesto de Egresos 2020, Capitulo XXVI, Estadística de Población*. Chiapas: Gobierno del Estado; 2020.
28 Aída Hernández Castillo R. *Sur Profundo, Identidades Indígenas En La Frontera Chiapas-Guatemala*. Mexico, DF: Publicaciones de la Casa Chata; 2012.
29 Aída Hernández Castillo R. *Histories and Stories from Chiapas*. University of Texas Press; 2001.
30 Consejo Nacional de Población. *Índice de Marginación por Entidad Federativa y Municipio 2010*. CONAPO; 2011:332. [Internet] Report No.: 978-607-427-125–6. Available from: http://www.conapo.gob.mx/work/models/CONAPO/indices_margina/mf2010/CapitulosPDF/1_4.pdf.
31 Patton MQ. *Qualitative Research and Evaluation Methods*. 3rd ed. Sage Publications; 2001.
32 Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res*. 2005;15(9):1277–1288.
33 Good MJD, Mwaikambo E, Amayo E, M'Imunya Machoki J. Clinical realities and moral dilemmas: contrasting perespectives from academic medicine in Kenya, Tanzania, and America. *Daedalus*. 1999;128(4):167–196.
34 Raviola G, Machoki M, Mwaikambo E, Good MJD. HIV, disease plague, demoralizzation and "burnout": resident experience of the medical profession in Nairobi, Kenya. *Cult Med Psychiatry*. 2020;26(1):55–86.
35 Hoffer Gittell J. An overview of relational coordination adapted from "new directions for relational coordination theory.". *Oxford Handbook of Positive Organizational Scholarship*. Oxford University Press; 2011. Available from: https://www.rchcweb.com/Portals/0/Summary%200f%20Relational%20Coordination%20Research.pdf.
36 Dörr NM, Dietz G. Racism against totonaco women in Veracruz: intercultural competences for health professionals are necessary. *PLoS ONE*. 2020;15:(1) e0227149.
37 Lin Y, Scott JW, Yi S, et al. Improving surgical safety and nontechnical skills in variable-resource contexts: a novel educational curriculum. *J Surg Educ*. 2018;75(4):1014–1021.
38 Lin Y, Scott J, Mutabazi Z, et al. Strong support for a context-specific curriculum on non-technical skills for surgeons (NOTSS). *East Cent Afr J Surg*. 2017;21(3):3.
39 Yule S, Flin R, Paterson-Brown S, Maran N, Rowley D. Development of a rating system for surgeons' non-technical skills. *Med Educ*. 2006;40(11):1098–1104.
40 Scott JW, Lin Y, Ntakiyiruta G, et al. Identification of the critical nontechnical skills for surgeons needed for high performance in a variable-resource context (NOTSS-VRC). *Ann Surg*. 2019;270 (6):1070–1078.
41 Nigenda G, Elliot P, Flores H, Aristizbal P, Martinez-Davalos A. Interprofessional training for the delivery of community health services in Mexico: the experience of partners in health. *J Interprof Care*. 2019;33(4).
42 Williamson A, de León LP, Garza FR, Macías V, Flores Navarro H. Bridging the gap: an economic case study of the impact and cost effectiveness of comprehensive healthcare intermediaries in rural Mexico. *Health Res Policy Syst*. 2020;18(1):49.
43 Reich MR. Restructuring health reform, Mexican style. *Health Syst Reform*. 2020;6:(1) e1763114.