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Medication usage, patient health practices, and healthcare accessibility in the community of Tirrases, San José, Costa Rica

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ABSTRACT: A survey regarding medication use and health care accessibility was distributed to residents of the urban marginalized community of Tirrases, San Jose, Costa Rica. Individual interviews were conducted with selected patients and medical practitioners to add detail and perspective to the survey responses. One hundred and ninety four individuals responded to the survey, and five individuals were interviewed, four patients and one medical practitioner. Sixteen percent of the surveyed population did not have medical insurance, and comparisons between insured and uninsured populations showed that the uninsured population reported lower levels of chronic illness, use of medication prescribed by doctors, and decreased frequency of doctor visits. Patients were comfortable overall discussing their medications with their doctors, and the majority used natural medicine. Medical practitioners should be made aware of these medication habits and patient responses to better design patient treatment plans and make medical care and clinic services more accessible for both insured and uninsured patients.

Key words: Medication Use, Access to Medical Care, Chronic Illness, Urban Marginalized Community, Healthcare, Natural Medicine, Insurance.

RESUMEN: *Uso de medicamentos, prácticas de salud del paciente y accesibilidad sanitaria en la comunidad de Tirrases, San José, Costa Rica.* Una encuesta sobre el uso de medicamentos y accesibilidad de los servicios de salud fue distribuida entre los residentes de la comunidad de Tirrases de Curridabat, San José, Costa Rica. Pacientes y médicos fueron entrevistados para aumentar a la perspectiva personal de la gente con detalles específicos. Ciento noventa y cuatro personas respondieron a la encuesta, y cinco personas fueron entrevistadas, cuatro pacientes y un médico. Dieciséis por ciento de la población no tiene seguro médico, y cuando las poblaciones con seguro y sin seguro fueron comparadas, hubo niveles más bajos de enfermedades crónicas, menos uso de medicamentos prescritos, y visitas menos frecuentes al médico en la población sin seguro. En general, los pacientes se sienten cómodos cuando hablan con su médico y la mayoría de ellos usa medicina natural. Los médicos deber saber sobre estos usos de medicamentos y las respuestas de estos pacientes para diseñar mejores planes de tratamiento y para aumentar el accesibilidad del cuidado médico y los servicios en el EBAIS para los pacientes asegurados y no asegurados.

Palabras clave: Uso de medicamentos, acceso a atención médica, enfermedades crónicas, comunidades marginales, cuidado de la salud, seguro médico.

Costa Rica's nationalized healthcare system, also called the Caja Costarricense de Seguro Social, aims to cover the cost of medical care for all individuals for a variety of treatments, ranging from emergency procedures to basic medications to maternity care. This system has three levels of care. The first level includes general medical care from the healthcare clinics called EBAIS (Equipo Básico de Atención en Salud) and any simple lab work that a patient requires. The second level includes pathology work such as biopsy and radiology services, gynecology, odontology, internal medicine, and pediatrics. The third level of care involves hospital care, surgery services and specialties like pathology and oncology (Dr.

Juan Porras, 2016). Beyond this system, individuals can purchase additional private insurance that allows them to attend private clinics (Adamson, 2016). There are a variety of types of health insurance in Costa Rica, and all are based on a contributory system where the individual pays a certain rate and is insured for most medical procedures. Individuals can be insured by their employers, by association with their spouses or children, by the state, by a pension program, or by paying directly, but all plans require some form of payment from the individual (Dr. Juan Porras, 2016). The Caja Costarricense de Seguro Social administers all of these forms of universal insurance (González, 2004).

An important part of this health system is prescription medication usage. Prescription medications are essential for maintaining or improving upon a patient's wellbeing, as well as preventing the development of further illness (Sibaja, 2014). However, one study suggests that in Costa Rica, many patients are unsatisfied with their level of treatment, may not complete their treatment properly, and at times share unused medication instead of properly disposing of it (Sibaja, 2014). The discrepancy between what is recommended and what actually occurs is essential information for medical practitioners. They need to be aware of and consider health habits and medication compliance to provide optimal care for the community. Additionally, patients perceive medications in a variety of ways, and medication treatment plans can be disrupted by many factors. Some of these factors can be prevented, such as miscommunication about medication usage from medical providers, reducing costs of certain medications through increased insurance coverage, and increasing accessibility of pharmacies in less urbanized areas; others, such as unintended side effects, intricate medication schedules, and arising social stigmas are harder to prevent, but might be mediated by increased communication between medical practitioners and patients (Sibaja, 2014).

In Tirrases, patients may be subject to additional disadvantages as a marginalized urban community (Goepfel, et al., 2016), as these areas tend to lag behind the healthcare advances made by their urban counterparts (David Vlahov & Galea, 2007). Currently, the population of Tirrases is 16 614 people who have access to two EBAIS centers (Municipalidad Curridabat, 2011). While the canton of Curridabat aims for 5 000 patients per EBAIS center in each of its districts, Tirrases locations attend to over 8 000 patients at each center, which puts a strain on accessibility and quality of care (Médica et al., 2014). If this population were properly equipped with access to both healthcare centers and medications that they require, they could develop stability and resilience as a community, as well as preparedness for larger health crises that may arise, such as national epidemics (David Vlahov & Galea, 2007; Plough et al., 2013).

There is currently very little research available about medication usage habits in Costa Rica. The country has a unique healthcare system that should provide the necessary health services and medications to its population, following the UN's guidelines (Goepfel, Frenz, Grabenhenrich, Keil, & Tinnemann, 2016). However, certain communities, like the marginalized urban community of Tirrases, may have decreased access to this healthcare system due to a variety of factors, such as communication issues between patients and healthcare

practitioners and lack of economic resources (Fuchs, Lee, Roemer, & Orsillo, 2013). This project characterizes the current situation in this community regarding following key issues:

- (i) Health care system accessibility within the given physical and social environment.
- (ii) Medication usage and distribution among different population demographics.
- (iii) Communication between patients and doctors.
- (iv) Chronic disease prevalence.
- (v) Natural or Non-prescribed medication usage.
- (vi) Improvement strategies for care via patient feedback.

MATERIALS AND METHODS

The focus area of this research is Tirrases, Costa Rica, located in the canton of San Jose as a district of Curridabat. This area has a population of approximately 16 000 individuals including children (Municipalidad Curridabat, 2011). Tirrases has been identified as a marginalized urban community (D. Porras, pers. comm., 2016). 'Marginalized urban community' in this case is defined as a community that is part of a larger urbanized area that is of lower socioeconomic standing relative to the surrounding urban areas. This community was originally built around coffee plantations, but during the late 1980's, experienced a large population increase along with high rates of urbanization. When these coffee plantations closed, Tirrases received a large influx of squatters due to the availability of abandoned properties. While the situation has been improving due to increased public engagement and government assistance programs, this community still faces inadequate housing conditions, with only 48% of houses being classified as "good living conditions" (Médica, et al., 2014). This district is the most densely populated of the districts of Curridabat, and this high population density may decrease the accessibility of the health care due to limitations of resources and staff. Other obstacles Tirrases faces include high rates of teenage pregnancy and breast cancer, and low levels of community security (Médica, et al., 2014).

Tirrases is of note because little exploratory research has been conducted on this population to determine if they have sufficient access to the healthcare system and to the medications that they need. The research will be conducted at the EBAIS center in central Tirrases and at La Cometa. La Cometa is a community center that offers continuing education courses such as mathematics, science, languages, or computing, as well as a variety of

artistic classes like music and dance to local families free of charge (Municipalidad Curridabat, 2013). This center is located in what is locally known as Tirrases Arriba. This area of Tirrases carries the social stigma of being a dangerous, at risk community, but has been improving in recent years.

The individuals involved in this study were between the ages of 18 and 75. Participants were individuals who consume medications for illness or maintenance of their wellbeing as well as those who had not. All participants in this survey live in the urban marginalized community of Tirrases, Costa Rica. Medical practitioners that work at the EBAIS center in Tirrases participated as interviewed candidates. It is important to keep in mind that the community environment most likely influences the responses of individuals, and that their identification information will be important to result analysis (Fuchs et al., 2013).

A questionnaire was distributed to individuals at the community center called La Cometa, and at the Lower Tirrases EBAIS Center pertaining to their medication usage, habits and accessibility to medical centers based on the following inquiries (translated from original form, see Digital Appendix.). These questions were developed from previous research methods involving surveys and discussion with Dr. Porras (Adamson, 2015). At patient request, some questionnaires were responded to orally and results were recorded in the same manner. Patients were encouraged to ask for an explanation of any unclear prompts. Questionnaire appears in Digital Appendix 1.

Data analysis: Results from the questionnaires were recorded in an Excel document, and categories were translated into English for analysis. Individuals were numbered to protect personal identities, and no identifiable patient information is presented in this analysis. The interviews were recorded and transcribed in Spanish, and conclusions drawn from these interviews were translated into English to be consistent with the language used in this paper. Excel and R Studio were used to conduct any quantitative analysis. Results are not generalizable due to the selection of participants and population size, but results are exploratory and indicative of overall trends that are evident in this population.

RESULTS

In total, 194 surveys were conducted, and 5 interviews were given, 4 to patients and 1 to a medical practitioner. Of these surveys, 172 women and 22 men were surveyed. The age range of respondents spanned from 18

to 75 years, with a mean age of 36 years (Table 1). Of the 172 women surveyed, 73,8% worked in the home or as homemakers. The average time of arrival to the clinic was between 30 – 45 minutes, and the majority arrives by bus (79%). 96% of the surveyed population had a basic level of education (Table 1). Basic education in this paper is defined as having completed Primary education or higher, such that the patient can read and write proficiently. 84% of this population has insurance, and 16% does not have insurance. These groups were evaluated separately during data analysis because this separation is indicative of access to health care. If this percentage were extrapolated to the total population of Tirrases, theoretically 2 560 individuals would be without health insurance.

TABLE 1
Demographics of the study population surveyed
in Tirrases, Costa Rica

Number of Participants	194	Education Level	
Women	172	None	3.68%
Men	22	Primary	55.26%
Age Range	18 - 75	Secondary	24.21%
Mean Age	36	Beyond Secondary	16.84%

The following analysis compares the various exploratory categories between the insured and uninsured groups. Across the board, there were high levels of comfort discussing treatment with their medical practitioner (Fig. 1 in digital Appendix); however, this was the only similarity between the groups. The noninsured group had lower reported rates of chronic illness and prescription medication usage (Fig. 2 in digital Appendix).

Patients reported frequent use of natural medicine (Fig. 2 in digital Appendix), and the uninsured group reported a 5% higher rate of use of this kind of non-traditional medicine. 27% of the insured population reported not taking prescribed medications from their doctor, while taking non-prescribed medications. The insured group visits the doctor more frequently than their uninsured counterparts (Fig. 3 in digital Appendix). Insured patients seek out medical advice only from their doctors, whereas the uninsured group seeks medical advice from family members most often (Fig. 4 in digital Appendix). The most reported chronic illnesses across the population were hypertension, diabetes, and asthma (Table 2), and had much higher incidences than literature reports of this area (Médica, et al., 2014). However, the uninsured group reported only asthma, gastritis, and allergies as chronic conditions.

TABLE 2
Most prevalent diseases across the entire surveyed population

Disease	Percentage
Hypertension	12.37
Other	9.79
Diabetes	4.64
Asthma	4.12
Hypothyroidism	3.621
Gastritis	2.06
Heart Related	1.55

The 5 patients interviewed had a variety of insurance types, 3 with insurance and 1 without. Four women and one man were interviewed. All of the women interviewed were homemakers, and the man was retired and pensioned. All interviewed patients said that there was not easy access to medical care in Tirras, even though the majority of them were insured. It was evident that having insurance was essential to receiving adequate care from the EBAIS centers. Many said that time was a key issue because obtaining an appointment and waiting for the treatment process to proceed takes several hours. While each patient had varying accounts of their experiences in the EBAIS, all noted that this process was lengthy, and that they had very little time to discuss their illnesses or medications with their doctors when they were finally seen. Three of the four interviewed patients did not believe that they had open and comfortable relationships with their doctor because their attending doctors changed frequently, and they felt uncomfortable explaining their personal health history with a new doctor every time they visited the EBAIS (Patient 1, 2, and 3). These three patients cited that their doctors appear to rush through their appointments due to the high amount of patients that they have to attend to in a short amount of time. One patient stated that one could be satisfied with the amount of time given during appointments; however, she felt that they were lacking in genuine interest in the patient (Patient 3).

All of the interviewed patients cited natural medicine as an inexpensive and readily available alternative to traditional medicine. Examples of this kind of medicine included herbal teas, ginger, or certain foods that had been recommended to these patients by other family members (Patient 1, 2). However, when patients felt that an illness was more severe, or when their children were ill, they would go directly to the EBAIS, or if they needed immediate attention, to the hospital. None of the patients reported hearing of any stereotypes or negative

associations with the use of medications, given that they are already established as a part of society (Patient 2).

The medical practitioner that was interviewed reported having only 12 minutes on average to spend on each patient, and that she felt limited by this when discussing a patient's treatment and medications. She was aware of the lack of time that she had to spend with each patient, but the number of patients in a given day doesn't allow for extended appointments. In the event of a cancelled appointment, she would have a bit more time to talk to her upcoming patients, but is otherwise encouraged to stay on time. Despite this limited time, she believes that she has a positive relationship with her patients. When asked about natural medicine, she stated that it could be beneficial if "it is a good medicine that has been properly tested (Doctor 1)." She stated that she inquires of patients' use of natural medicine during appointment, and that there is open communication when discussing their use of these medications. However, she has not yet recommended that a patient use natural medicine as part of their treatment. She had also not heard of any stereotypes surrounding the use of medications, and has seen many patients who return unused medications to the pharmacy as she recommends.

DISCUSSION

All interview respondents, which included insured and uninsured individuals, reported that medical care was not easy to access in Tirras. Patients have to wait extensive periods of time to attain a doctor's appointment, and this process can take up to an entire workday (Patient 2, personal communication, 2016). When patients are finally attended to, they reported having only 10 – 15 minutes of appointment time with the doctor, and the current level of attention that patients are receiving may be contributing to the high incidence of uninsured patients rarely seeking care. Overall, patients are comfortable discussing their treatments and medication procedures with their doctor across both the insured and uninsured group. However, three of the four interviewed patients cited that while they may generally be satisfied with the basic level of care they are receiving, they do not feel that they have a communicative relationship with their doctors. This data shows that medical practitioners are providing the required services, but that the patient-doctor relationship could be improved.

The majority of this surveyed population used natural medicine (61%). The high reported use of natural medicine is not unusual, given that it can be a less expensive, more readily accessible alternative

to traditional medicine (Alejandro Brenes-Valverde & Patricia Rodríguez-Canosa, 2009). This is especially pertinent to patients who lack health insurance and may not have the means to pay for prescription medications. This type of medicine may also be appealing to patients on a cultural level for having been tried and tested by family and community members (Ina Vandebroek, 2012). However, this population may be at risk for medication misinformation and misuse because traditional, allopathic doctors may lack the knowledge of all of the purposes and interactions of these natural medications with traditional medication practices (Firenzuoli & Gori, 2007). The doctor interviewed in this study reaffirmed the idea that if these medicines are thoroughly tested then risks are minimized (Doctor 1), but few of these medicines are subjected to the same rigorous testing standards of traditional medicine. While this Doctor reported asking patients about their natural medication usage, in general, there is little discussion of patients' use of natural medication during visits (Roy, et al., 2015). What is notable is that there was a high level of natural medication usage by patients who had health insurance and who took prescribed medications from their doctors. The reason for this trend is relatively unclear, but may be related to patient confidence in their doctor's advice, or patient use of family members and natural doctors as sources of medical advice.

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