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Self-Medication Practices in Two California Mexican Communities

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Although social scientists have taken up the study of medication use in both developing and developed nations, the medication practices of immigrants remain largely unstudied. In this study, qualitative research was employed in order to describe and compare self-medication practices in two California Mexican immigrant groups: families living along the border near Tijuana, Mexico, and migrant farm worker families residing in illegal encampments and substandard housing in San Diego's North County. Medication and health seeking practices were found to vary according to the specific political–economic, sociocultural, and geographic contexts in which different subpopulations of California Mexicans live. The California–Mexico border area was examined as an important context for considering self-medication behaviors, since it permits border-crossing into Tijuana for the purpose of buying Mexican pharmaceuticals at low cost without a prescription. The popularity of injections among California Mexicans and the cross-border purchasing of injectable antibiotics and vitamins are discussed as issues of particular relevance for immigrants living along the border.

KEY WORDS: Mexicans; immigrants; self-medication; injections; health services utilization.

INTRODUCTION

Self-care research demonstrates that the majority of care in illness involves self-treatment, not professional care (1–3), and self-medication has been shown to be a common first resort in illness (4–9). Yet despite the emergence of a social science literature on self-treatment and medication use in both developing and developed nations, the self-medication practices of U.S. immigrants remain relatively unstudied. Immigrants cope with illness at the intersection of two sociocultural systems of therapy management. Their evaluation of treatment options and use of medications are influenced by both the cultural setting in which they were raised, and the political–economic and sociocultural context in which they find themselves in their new nation. Latino immigrants in the United States have been widely documented as a group who lack access to, or underutilize, health services (10, 11). Yet studies of Latinos' home-based health practices tend to focus on home remedies, while their self-medication practices using modern pharmaceuticals are less commonly examined.

An additional limitation of existing data on the health behaviors and health services use of "Latinos" in the United States is the tendency to homogenize all people of Latin American origin as belonging to a single "cultural category." Even studies focusing on a particular nationality of origin, such as ethnic Mexicans, often suffer from the constraints associated with treating all ethnic Mexicans in the United States as a single analytic group. Attempts to subdivide data on ethnic Mexicans according to such characteristics as socioeconomic status, legal status, or "acculturative status" (by disaggregating data according to native language, place of birth, or length of residence in the United States) are also problematic because communities or even families who share common health resources, knowledge, advice, and behaviors may contain a variety of individuals differentially positioned along a socioeconomic, legal, or acculturation continuum. Thus, while broad categories such

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as "Latinos," "Mexican immigrants," or "Mexican Americans" ignore the diversity of life circumstances that may exist within these groups, attempts to resolve this problem through subdivisions according to socioeconomic, legal, or acculturative status may be inadequate to capture distinctions which may vary as much by geographic location, sociocultural environment, and political–economic context as by simple differences in income, language spoken, or place of birth. This study provides a more in-depth understanding of both the self-medication practices of Mexican immigrants, and the diversity of life circumstances among ethnic Mexicans in the United States which leads to variations in their patterns of medication use and health care seeking.

STUDY POPULATIONS AND METHODS

To highlight both the commonalities in the health-seeking experiences of southern California Mexicans, and the differences between subpopulations that result from the different social, cultural, physical, and political–economic contexts in which various groups live, two very different groups were selected for study. The first group consists of low income, Mexican immigrant/Mexican American families residing in San Ysidro, in the South Bay area at the southern border of San Diego County where California meets Tijuana, Mexico. San Ysidro is a town of over 20,000 inhabitants, which consists predominantly of large Latino families with young children and is socially, culturally, and commercially linked to nearby Mexico. Although I use the term "immigrant families" to refer to my informants from this area, they in fact represent a mixture of origins, with different members of a single family often having been born or having lived in both Mexico and the United States. Proximity to Tijuana makes Mexican pharmacies and health services easily accessible and attractive to San Ysidro's low-income residents, in addition to the clinics and pharmacies available to them on the U.S. side of the border.

The second group consists of Mexican migrant/immigrant farm worker families living in "Third World" conditions in illegal squatter camps or other substandard and overcrowded housing in the North County area, at the northern edge of San Diego County. North County is home to an estimated 11,000–50,000 homeless documented and undocumented migrant workers (12, 13). Migrant farm workers have been described as an immigrant subpopulation at particular risk for poor health and inadequate health care access. Their health is threatened by overcrowded and unsanitary living conditions including a lack of adequate housing, potable water, gas, electricity, and waste disposal systems. Barriers to health care include cost, lack of health insurance, transportation problems, fear of deportation, cultural and language barriers to health services use, lack of knowledge of available services, and discrimination in health care settings (12–19). North County's migrant camps are isolated from town centers, and few residents have cars for transportation. Children often do not attend school. While the majority of these workers are adult males, many have families back in Mexico, and increasingly these men are sending for their wives and children to join them as they settle in the United States (20, 21). The result is the increasing prevalence of "binational families," where some members are undocumented, and others are U.S. citizens—that is, children born since migration to the United States (20, 22). This emerging and unstudied population of farm worker families, which often include small children who are particularly vulnerable to poor health under such adverse conditions, is the focus of my research among the North County group.

The study consisted of 10 weeks of field research during the summer of 1996 (23). A single, semistructured, open-ended interview was conducted by the author with each of twenty-four key female informants, 10 in South Bay and 14 in North County. The emphasis in interviews was on family health, and women were therefore selected as informants because of their importance as caregivers for children and as household health care decision-makers. All North County interviews were conducted in the informants' homes, while in South Bay, four were conducted in informants' homes, two in relatives' homes, and four at a health program office. Interviews lasted for approximately 2 h, and were conducted in Spanish with the exception of six interviews with bilingual, South Bay informants that were conducted in English. All interviews were tape-recorded with the informants' permission and transcribed for qualitative analysis of key themes.

Interviews consisted of three subsets of open-ended questions. The first subset elicited information on family background and household composition, health-seeking and decision-making, barriers to formal health services use, self-treatment practices including injection use, and treatment of the most recent illnesses in the family. For all informants who were interviewed in their homes, an inventory of all medications in the house was conducted, and these

were used as props to stimulate discussion. The second subset of questions was presented to all informants who reported current or past self-medication with injections among household members, and explored reasons for injection use; informal sources of injections, injectables, and equipment; administration and cleaning techniques; and beliefs regarding contamination and disease transmission via injections. Three women who were found to be informal injectionists in their communities were questioned in detail regarding their roles as informal health providers and their clients' use of injections. A final subset of questions was presented to individuals who had lived part of their adult lives in Mexico, and asked them to compare health-seeking practices employed in the United States to previous practices in Mexico. Additional data were collected through research on medication availability and costs in San Ysidro and Tijuana pharmacies; interviews with outreach workers, clinic staff, and pharmacists; and participant-observation while accompanying North County outreach workers on rounds.

Interviews revealed both commonalties and differences in the life circumstances of the two groups under study. Attributes which all of the 24 core informants share include low income, a caregiving role for children, Spanish as a first language, and Mexican origins—ranging from women who were born and lived most of their lives in Mexico, to women who were born in the United States but raised by parents originally from Mexico. Despite these commonalties, the two groups differ considerably in terms of their degree of integration into the U.S. society, as well as the personal, social, physical, and economic resources available to them. The South Bay informants are bicultural and often bilingual. They have spent much of their lives in California, while still maintaining a Mexican identity as members of a Latino community. They have strong social networks in the area, intermediate levels of education, and usually have Medi-Cal (Medicaid) insurance. They are an urban, border population with easy access to Tijuana. In contrast, North County informants are recent immigrants who are cut off from American society. They live in a rural setting and are socially isolated. They have inadequate housing, speak no English, have low education levels, often lack health insurance, and generally lack social and economic resources. They live relatively far from the Mexican border and often lack both the transportation, and the legal documentation, to visit Tijuana pharmacies or doctors. In the next section, I consider how these different social, geographic, and economic contexts influence health care seeking and self-medication.

ACCESS TO HEALTH SERVICES AND "ACCESS TO SELF-MEDICATION"

According to Ugalde and Homedes (24), self-medication "is encouraged by problems of accessibility to health services: the more difficult the access the more likely the patient will resort to self-medication" (p. 176). However, this "conventional wisdom"—that there is an inverse relationship between health care access and self-medication—ignores several factors which make self-medication patterns far more complex. Studies indicate that different groups may be equally motivated to self-medicate but for different reasons; for example, higher income groups may self-medicate because of time constraints which prevent them from visiting a doctor, while low income groups may self-medicate to avoid the costs of seeking medical care (25). Furthermore, self-care research demonstrates that self-care is the norm in illness; thus, the assumption that self-medication is a default option resorted to when individuals lack access to medical care is unwarranted. Self-medication is a normal and often desired course of action in illness, regardless of access to health services. If self-care is the norm then it is its absence, not its presence, that most requires explanation.

This leads us to another issue that complicates self-medication patterns, one which is particularly relevant to the study described here: the problem of "access to self-medication." While it is widely recognized that different groups have unequal access to health services, it is often implicitly assumed that all people have equal access to self-medication. Yet just as health services use is constrained by an individual's access to income, health insurance, and transportation, a person's capacity to self-medicate is constrained by factors such as money to purchase medicines, language skills to communicate with pharmacists and read medication packages, and social and informational resources to provide knowledge of medications and their uses. This study reveals that differences among and between South Bay and North County informants' medication patterns can only be understood in relation to *both* access to health services, and access to self-medication.

Despite low incomes, South Bay informants were found to have a high degree of access to health services. Of nine families who gave responses regarding

insurance coverage, four had Medi-Cal (Medicaid) insurance, one had private insurance, and one was covered by Medi-Care. In the remaining three households, some individuals were covered by Medi-Cal while others were not. Additionally, in five families insurance status had fluctuated over the past few years, with some or all household members experiencing periods in which they lacked insurance. Despite this variation, even those individuals who were always or periodically uninsured were not excluded from health services. During times when health insurance was lacking, they simply consulted physicians in nearby Tijuana, where low cost clinics are readily available and affordable. Half of the informants mentioned family members engaging in this strategy. Thus, most individuals are covered by insurance and visit U.S. clinics or private physicians, and those who periodically lack insurance find Tijuana health services to be a convenient and affordable substitute. Some women encounter other barriers to using health services, such as lack of transportation or problems finding child care, but these were generally described as occasional problems rather than major concerns.

In addition to having relatively easy access to health services, South Bay women have access to a wide range of informational, social, and physical resources that make self-medication possible. Half of the women mentioned television as a source of information about medicines, with other sources including medication packages, personal experience, and past prescriptions, as well as pharmacists, friends, and family members. South Bay women have large social networks to supply medicines, knowledge of home remedies, and services such as giving injections or bringing medicines from Tijuana in addition to providing advice and information on medications. When asked whom they turn to for advice in cases of illness, all but one mentioned friends, neighbors, or relatives, in particular female kin; over half mentioned their mothers. Most San Ysidro informants are bilingual and therefore able to consult pharmacists in both San Ysidro and Tijuana for advice. They live within a few miles of Tijuana pharmacies, and are able to acquire a substantial number of medicines from Mexico at low cost, without requiring a prescription. All of the informants revealed some use of medicines obtained in Mexico, and in all but one case Mexican medications made up at least 25% of the medicines women mentioned. Thus, a wide range of available resources allow South Bay families to take medication use into their own hands—before, after, or instead of seeking a physician's care. Families frequently choose to self-medicate despite having access to health services, as demonstrated by the fact that women mentioned on average 14 different medications that were used by household members without consulting a physician.

In North County, the situation is quite different. Most migrant farm worker families lack adequate health insurance and the capacity to pay for health care. Unlike the South Bay sample, North County families are often undocumented and usually ineligible for Medi-Cal insurance to cover routine health care for adults. In the North County sample, no adult family members had health insurance. In half of the families the children were also uninsured, while in the other half, younger children born in the United States were fully covered by Medi-Cal but other children were covered for emergencies only. In addition to the cost of health care, the physical isolation of the hillside encampments where many migrant families live, and consequent transportation problems, are major impediments to using health services. Clinics serving migrant families are between 10 and 25 miles from the camps (12), and few migrants have cars. Walking from a camp to a main road and taking the bus to and from a clinic, combined with waiting to see a doctor, can take all day and is a difficult task with children along. Tijuana is a $1^1/_2$ h drive from North County, and Mexican clinics are therefore physically inaccessible; undocumented migrants also lack the legal capacity to cross back into the United States if they visit Mexico. Other impediments to health services use for North County families include communication barriers at clinics where doctors do not speak Spanish, lack of child care, difficulty getting time off from farm work, and fear of being caught by immigration authorities.

However, two of the most significant access problems—money and transportation—are unevenly distributed among the North County families interviewed. Health programs targeting migrants help to resolve these two core problems for some families, in particular those living in camps. The most important of such programs is an outreach service employing two case workers who regularly drive vans out to encampments where they perform triage and bring residents to clinics. Upon arrival at the clinic, the outreach workers draw upon a number of programs in an attempt to obtain free services for migrant workers and their families. The most important of these is the Health Care for the Homeless Fund, which provides a limited number of free visits to individuals classified as homeless, including those living in camps.

However, all such programs are limited in their coverage, and many have been cut back in recent years. Many benefit children only, and none provide for hospital care. Furthermore, both the transportation services and the assistance in negotiating the system to obtain free care provided by outreach workers are limited principally to families living in migrant camps. Consequently, poor families outside the camps suffer from serious transportation and financial barriers to health services use.

Even for those in encampments, access to health services is restricted by the limited schedule of outreach services and the restricted scope of indigent payment programs. Conventional wisdom dictates that self-medication would be the expected response to such limited health care access. Yet North County families are often even more limited in their access to self-medication. The inability to speak English, combined with low levels of education and literacy, mean that people are unable to read medication packages and instructions, ask questions of pharmacists, or obtain information about medicines from media sources. Many women commented that they could not identify appropriate medications in stores because American products were unfamiliar and they could not read English, nor could they communicate with the Anglo pharmacists.

For example, Jenny[2] told of how after spending $50 at a clinic when her child had the flu, her brother had to teach her to recognize the Tylenol package and read the dosages in English so as to save money in the future. Yet North County women rarely have kin in the area to turn to for advice and information about medications and home remedies, and often know few other families or friends. Camps are particularly isolated and have only a few families each, and women usually lack the transportation to leave, such that they spend most of their time alone with their small children. Gloria, who knows only one other family and has no friends in the area, lives in a camp otherwise inhabited only by single men. The camp is a 2 mile hike uphill from the main road, and she complained of having no one to talk to. This 19-year-old mother of a 4-year-old and a newborn is left alone with her children all day while the men are at work, with no telephone and no car. Even the few women who have relatives in other camps or in town are isolated from them by the lack of telephones and transportation. Mariana has relatives in another camp but only visits them once every 15 days; Carmen stated that when her child was sick she could not communicate with anyone because she did not have a telephone.

It is therefore not surprising that two thirds of women, when asked who they consult for advice when someone is ill, responded that they have no one to ask or that they consult only the outreach workers and clinic staff. Juana summed up the problems of social and physical isolation, and the implications for getting advice as well as going out to purchase medicines. The following was her response to the question, "Compared to Mexico, is it easier or harder here to get help and advice when someone is sick?":

> It's harder. I don't have anyone with whom—if my child has an illness during the week and the [outreach] doctor doesn't come, how, how can I? . . . No, I don't have anyone with whom I can talk or anything. I'm alone with my children. And over there, in Mexico, yes—in the city I can go wherever I want . . . and here no. . . . If we go out here, immigration takes us and makes us leave [the country]. . . . On top of this, I don't know how to catch the bus. . . . Nothing, I can't move. I am only here.

It was clear in interviews that North County women lack the confidence, social and informational resources, and capacity to obtain medications and select self-treatments that is characteristic of South Bay women. North County informants also reported using fewer home remedies than did South Bay women, who all described using a variety of herbs, foods, and physical manipulations to treat ailments ranging from minor stomach aches, flu, cough, pain, gas, diarrhea, and earaches, to fever, fallen fontanel in infants, and the folk illness *empacho* (see also 26–29). That North County women reported a much more limited use of only a few herbal teas is not surprising given their limited access to older relatives from whom to learn about home remedies.

What health seeking strategies do North County women engage in, given these limitations? For families living in camps, relatively high access to outreach programs as compared to the more severe constraints they encounter to purchasing medications results in one principal response to most illnesses: going to the clinic. Women in the camps showed a consistently high dependence on outreach workers and clinic doctors as their primary sources of advice, care, and medications. These women each mentioned no more than

[2]All individuals' names used in this paper are pseudonyms. The names of clinics providing health services and outreach programs to informants, and the names of other institutions through which subjects were accessed, have also been omitted to protect confidentiality, as have the names of specific communities in North County.

eight products used in self-medication, with a median of three. However, in contrast to camp residents who employ outreach services, families living outside the camps are extremely restricted in their capacity to access health services for financial reasons. As a result, they self-medicate a great deal more; informants mentioned as many as 41 products used for self-medication with a median of 10. Yet families outside the camps also lack the knowledge, informational resources, and English skills to easily purchase American over-the-counter medicines, and lacking access to physicians, cannot obtain American prescription medicines at all. Given this lack of access to medications in the context of life in the United States, how can we account for this high level of medication use?

Interviews revealed that noncamp families go out of their way to obtain Mexican medications from Tijuana. The advantages of familiar products, Spanish instructions, and the lack of a need for prescriptions in Mexican pharmacies make going to Tijuana a more viable option for these families than do buying drugs locally, despite the problems of distance, transportation, and documentation for crossing the border. Some families ask relatives, neighbors, or coworkers who are going to Tijuana for other reasons to bring specific medications back for them. In other cases, a family member makes special trips to Tijuana to buy medications; sometimes this requires a great deal of effort since the families do not own cars and the border is 50 miles away. In five out of six cases, noncamp residents obtained at least 50% of their medicines from Tijuana, in contrast to camp residents where only one in seven did so. Even more striking is a comparison with South Bay informants, where only two out of nine obtained 50% of their medications from Tijuana, despite their easy access to the border.

In sum, while South Bay informants have relatively high access to health services, they also have access to many informational, social, and physical resources that allow them to self-medicate using a wide variety of American and Mexican products. Given that self-care is a normal and desired course of action, this results in a high propensity to self-medicate instead of, or in addition to, utilizing formal health care. South Bay informants mentioned self-medicating with as many as 29 different medications with a median of 14 different products. In contrast, while many North County informants lack easy access to health services, their capacity to self-medicate using locally available American pharmaceuticals is even more limited. The consequence is two different patterns of health seeking: a high degree of reliance (even overdependence) on clinic programs for those who can access them, and a heavy reliance on medications obtained with great effort from across the border for those who lack this access.

Three ethnographic examples will serve to summarize these patterns. Teresa lives in South Bay with her husband, her $2^1/_2$-year-old daughter, and her elderly mother. She also has seven brothers and sisters and some cousins living in the San Diego area. Everyone in her household now has health insurance, but before becoming insured, she used to go to a doctor in Tijuana for health care. She still buys medications in Tijuana pharmacies, mostly because she feels that they work faster than American medicines do. Teresa buys medicines for her daughter in Tijuana when she is dissatisfied with the treatment her American physician offers, or if the doctor's medicines do not work within about three days. When she was a child, her mother would take her to a pharmacy in Tijuana to get penicillin injections for problems such as stomach infections. Sometimes they would consult a doctor first, but if it was an illness they had already had, they would just go to the pharmacy and tell them she needed a penicillin shot and the pharmacist would administer it. Now she buys penicillin for problems such as sore throats, stomachaches, or bad toothaches. Once she went to a Tijuana pharmacy because her menstrual period was too heavy; the pharmacist recommended and administered an injection, but it just made the problem worse. When Teresa was pregnant with her daughter, her mother recommended some Mexican vitamins to make her womb strong, which a neighbor injected for her once a week for about 3 months. Her mother also sometimes recommends home remedies. Teresa named 14 different medications that she uses, nine of which are purchased in Mexico.

Virginia lives in a camp in North County, in a two-room shack with her husband and two sons, ages 16 and 12. She is an undocumented migrant and speaks no English. She has a few relatives in a nearby town, but none of her siblings or parents are nearby; she knows the three or so other families with children who live in the same camp, but few others beyond it. No one in the household has health insurance. A shortage of money has prevented her from getting needed dental work, and the family has two large hospital bills that they are paying in small installments. However, for the most part they are able to access health services because the outreach workers bring them to the clinic, fill out the forms, and translate for them. With the outreach workers' help, they never have to pay for services. The outreach and clinic doctors give

them medicines such as aspirin and Contact C; they also give her a cough syrup, but she does not know what it is called because it is in English. In Mexico she sometimes asked family members for advice when someone was sick, whereas here she has no one to ask except the outreach workers. Virginia mentioned self-medicating with three American over-the-counter medications, one of which she could recognize in the store by looking at the blue letters on the package. She also bought a cough medicine in a local Latino shop once. In Mexico, she would buy candies to suck on for cough, but "you can't find them in the U.S.," or at least she does not know of them here. Although she has more faith in injections than in pills, the family does not get injections here because they do not give them at the clinic. They have never gone to Mexico to buy medications or to visit a doctor. Virginia's repertoire of home remedies is limited to a few types of herbal teas. Every month Virginia is taken to the clinic by the outreach workers to get blood pressure pills and a check-up, and she is given her pills for free.

Carmen's husband Rodolfo also has high blood pressure. Their two children have MediCal insurance and go to a North County clinic for health care, but the adults are uninsured and cannot afford to go themselves. Although they do not pay for health services when they go with the outreach workers, they do not live in a camp and usually get to the clinic by bus, walking, or paying someone for a ride. When they go to the clinic on their own, they have to pay, so they avoid going as much as possible. Over 2 years ago, when they were living in a migrant camp, one of the outreach workers took Rodolfo's blood pressure and told him it was high, so he went to the clinic and they gave him pills. However, he has not been back to the clinic since, and instead goes to Tijuana to buy propranolol, which he takes daily. He knows what to take because they tell him in the Mexican pharmacy. He also buys three herbal medications from Tijuana to help him sleep. Rodolfo is currently suffering from an in-grown toenail, but will not go to the clinic to have it removed because it costs too much. When it gets infected, he buys injectable penicillin in Tijuana and a friend administers it for him. Sometimes they also injecttable penicillin for sore throats, because in Mexico "they say that penicillin is good for many problems." Rodolfo goes to Tijuana to buy medicines at regular intervals, or when someone in the family is sick. He either gets a ride from a friend, or takes the bus and then walks into town from the border, which takes all day—he leaves at 5:00 a.m. and does not get back until 8:00 at night. When a family member is sick, Carmen does not ask anyone for advice, and she has no relatives in the area. Her parents used home remedies when she was young, but Carmen does not know any. In addition to Mexican pharmaceuticals, Carmen mentioned buying three or four American medications.

The data from this study show that South Bay families and North County families living outside the camps both self-medicate a great deal. Yet it is clear that their reasons for self-medicating and their sources of medications differ greatly. Furthermore, North County camp residents, who are more constrained in their access to affordable health care than families in South Bay, still self-medicate less, contrary to conventional wisdom. Such diverse patterns of self-medication among California Mexicans can only be understood through a detailed examination of the specific contexts and resources that influence both access to health services, and access to medications. Table I summarizes some of the resources which influence the self-care and health seeking responses of the populations under study. The next section describes some of the broader, sociocultural influences on medication use which North County and South Bay families share in common.

SELF-MEDICATION AND SELF-REGULATION IN SOCIOCULTURAL CONTEXT

Medication use is not merely a pharmacological process; it is also a social and cultural process. While much attention has been focused on the need for "rational drug use" in developing countries and on encouraging compliance in medication use in the West, these approaches may overlook how the cultural meanings of medications and the practical concerns of everyday life affect people's perceptions of what is rational and appropriate (30). In deciding how to self-medicate and self-regulate medication consumption, California Mexicans apply a combination of cultural, embodied, and experiential knowledge; pragmatism; and perceptions of medication functioning, efficacy, strength, appropriate dosages, potential side effects, and dangers. They draw on various sources of knowledge beyond the physician, including pharmacy attendants, family members, friends, neighbors, the media, and personal experience. Even if a physician is consulted, medications may be consumed in dosages or at intervals that do not comply with doctor or package instructions. Rather than perceive such behaviors as non-compliance and deviance, we need

Table I. Resources That Influence Access to Health Services and Access to Self-Medication

Type of resource	Includes	Influences
Economic	Money, health insurance, free health care programs	Ability to seek health care, obtain free medications and prescriptions from clinics, purchase medications
Transportation/ communication	Cars, buses, rides from friends/relatives, outreach vans, telephones	Ability to reach clinics and pharmacies, consult others for advice
Language skills	Ability to speak and read English	Ability to communicate with health providers/pharmacists, read medication packages
Education	Formal education, literacy	Ability to read medication packages and instructions; self-confidence and decision-making capacity
Information sources	Friends, family, outreach workers, pharmacists, doctors, education, media and advertising	Knowledge of medications, home remedies, health services and free service programs, geography of area and transportation methods
Social networks	Friends, neighbors, family	Availability of advice, medical and home remedy knowledge, borrowed medications, informal injectionists, money, transportation, child care
Access to Tijuana	Physical proximity, transportation, legal status for crossing the border back into the United States	Availability of cheaper health services, Spanish speaking providers, cheaper medications without a prescription, Mexican products with Spanish instructions, different types and strengths of medicines; injectables and needles/syringes

to understand them as proactive decision-making and self-regulation.

Especially in South Bay where family and friends are nearby, social networks serve as an important source of both information and medications. Medical advice and medicines are often presumed to be safe and effective if suggested by a trusted person, regardless of that person's medical knowledge and experience. For example, when a friend offered Ana a penicillin injection for her fever, she accepted the offer in lieu of consulting a physician. When Ana's 3-month-old baby had a cough, she ignored the instructions on the Tylenol bottle to "consult physician," and instead trusted her mother to decide how much medication to give the infant. She reasoned that her mother "would not do anything to hurt her baby," and her mother's good intentions were adequate to produce confidence in the medical advice she gave. Tijuana pharmacists and drug store attendants are other trusted sources of information for choosing medications. In many cases, pharmacists and untrained pharmacy clerks are presumed to possess qualifications for dispensing medical advice far beyond their actual training. For example, Angela stated that "the majority of those who attend to you in pharmacies are doctors," and Julia claimed that "a pharmacist studied almost to be a doctor, he just didn't get his title."

Inherent in the use of the cumulative experience of social networks as the basis for medication choice is some sort of comparison between the current illness episode and a past experience or illness prototype. Informants were found to use various forms of what I call *comparative reasoning* as the basis for their medication practices. They applied family experiences with illness and drugs to judge which medicines were appropriate for a current illness episode. Comparative reasoning also allowed people to conserve leftover prescription medications, medication packaging, or prescription chits, and use them to select and self-prescribe medications for the "same" illness in the future. "Sameness" was judged through self-diagnosis, and was usually evaluated based on symptoms alone. When asked how she knew what medicines and dosages to take, Alejandra responded:

> I know, because before, like three years ago—1994—I got *pulmonía* [pneumonia]—I used to get sick a lot. So I would go to the doctors and they would tell me you have to take this and this. And I have all my papers . . . all my *recetas* . . . my prescriptions. When they used to send me to the laboratory in

> Tijuana—I have all that put away. Because in those years I got sick a lot. And I knew what to take. So I would look through everything and say—I need this, I need . . . and just buy the medicine . . . So I would just go to a *farmacia* and say I need this and that and they would give it to me.

Logan (31) similarly found that in Mexico, when symptoms recurred people tended to self-diagnose the same illness as they had experienced before, and self-medicate accordingly. For example, she found that people would self-diagnose and then ask the pharmacist to "give them something for parasites" despite the fact that a stool test is normally required to diagnose intestinal parasitic infections.

One consequence of symptom-based comparative reasoning is that antibiotics have come to be associated with particular symptoms, regardless of their etiology. Informants listed a wide range of symptoms for which they self-prescribe antibiotics obtained from Tijuana, including fever, "flu" (*gripe*), diarrhea, diarrhea with vomiting, cough with temperature, stomachache, toothache, sore throat, headache, and body pains. Antibiotics were typically described as useful for curing "infections" in general, with infections being defined by the presence of particular symptoms without reference to their specific etiology. For example, Angela gives her 4-year-old son ampicillin for diarrhea, because "if you have diarrhea it means that you have an infection in the stomach." Rosa stated that if a child has a cough with temperature or the flu, this means that he has a stomach infection, so she gives him amoxicillin. Jenny knows that metronidazole is a treatment for parasites, so she self-prescribes it when she or her husband has "lots of diarrhea," which she self-diagnoses as a parasitic infection. Additionally, some informants identified antibiotics as appropriate for particularly serious or persistent illnesses, regardless of cause, because they require a *powerful* medicine. Thus, the efficacy of antibiotics is *generalized* by these families so that they are perceived as appropriate for a wide range of illnesses and symptoms, ranging from a bad toothache or "flu" to an infant's diarrhea. This perception of generalized efficacy does not include any distinction between bacteria, viruses, and other causal agents (see also 32). *Comparative reasoning* and the concept of *generalized efficacy* (23) thus result in the frequent use of antibiotics in cases where they are not biomedically indicated.

Thus far, the discussion has focused on self-medication behaviors. However, *self-regulation*—the process of administering a medication in a manner that is inconsistent with the instructions or intentions of a qualified practitioner or a medication package—is equally important to consider. The literature on "noncompliance" often assumes that deviation from instructions is unintentional, that is, that it is the product of forgetfulness, an incapacity to understand physician instructions, or poor doctor–patient communication and rapport. Such unintentional noncompliance may in fact be significant among North County families. Women in North County expressed a strong ideology of compliance with medical instructions; unlike South Bay women, many informants in North County expressed little self-confidence in their capacity to decide for themselves what medications and dosages were appropriate. However, this ideology of compliance is not always reflected in reality. North County women may lack the literacy and English skills to read the instructions on medication packages. They may also misunderstand physician instructions, for reasons beyond a simple language barrier. Nichter and Vuckovic (33) relate the importance of considering not only whether or not patients are told when and how to take medicines, but also what *assumptions* underlie instructions given. For example, advice given to North County women to administer a medication every 6 h assumes that people have clocks or watches and that they conceive of the concept of "every 6 h" in the same manner as the physician. Interviews provide evidence that these assumptions may be false. For example, Concepción's baby daughter was prescribed two medications for pneumonia that were to be given every 8 h; Concepción confirmed that she administered them every 8 h, *twice per day.* Similarly, Magdalena stated that she gave her infant a cough medicine every 4–6 h as per the instructions, *two times per day.* She at one point asked how many hours there were in a day. While health providers and instructions used the "every X hours" formula for prescriptions, informants instead spoke of giving medicines "two times per day" or "in the morning, afternoon, and evening."

Self-regulation is more likely to be *intentional* among South Bay women. Unlike most North County women, South Bay informants often claimed not to follow package instructions and described purposeful manipulations of medicine dosages and course. Jenny, who serves as an informal injectionist in her community, relies on her own experience as a nurse in Mexico to evaluate and modify physicians' prescriptions and dosages marked on medicine packages. She will often alter the dosages of prescription medications which others ask her to inject for them, sometimes on the basis of overgeneralized rules such as

the assumption that penicillin always requires four injections for adults. Perceptions of illness severity and personal need were other reasons given for adjusting dosages. Individuals increase antibiotic dosages when illness is more severe, or decrease medication amounts when they feel better. For example, Helena decreased the number of blood pressure pills she took by one third because she "didn't feel so bad"; when her blood pressure went up, she started taking them as prescribed once again. The concept of a "half-life" for medications beyond which one becomes immune to them or exhausts their efficacy also influences self-regulation. A concern about acquired immunity to the effects of medication caused Esperanza to self-prescribe progressively stronger antibiotics for tonsil infections. Mothers were also found to use adult medications, including antibiotics, for children by adjusting dosages downward according to their own perceptions of appropriate dosage.

Side effects or the anticipation of side effects also caused informants to self-regulate or abandon medication regimens. Concerns about addiction to medications, drowsiness, or other potential side effects cited on medication packages were some of the reasons given for discontinuing use. A concern that vitamins or iron pills induce hunger and thus result in weight gain was a reason given by several informants for abandoning prescribed supplements, not only for themselves but also for their children. In contrast, other women reported administering vitamins to their children specifically in order to get them to eat more. Thus, side effects may be desired as well as avoided. Other examples of attempts at intentional manipulation of side effects included giving children Dimetapp to make them sleep, or injecting a double dose of contraceptives to induce abortion. Side effects may also be interpreted in a way that carries a different meaning for the patient than for the medical practitioner. Rosa reported doubling the dosage of self-prescribed injectable contraceptives obtained in Mexico every month for $2^1/_2$ years on the basis of her interpretation of the dysmenorrhea she experienced following a normal dose. Progestin injectable contraceptives commonly cause menstrual irregularities, but rather than interpret the more frequent menstruation she experienced as a normal side effect, Rosa assumed that it meant that the contraceptive injection was not working for the entire month, and that she therefore needed a higher dosage.

It was very common for informants to either self-prescribe an inappropriately short course of antibiotics, or stop taking prescribed antibiotics before completing the full course either when symptoms disappeared, or when they concluded that the medicine had not been effective. If the doctor tells Rosa to give her son Bactrim for seven days, she will stop after the first four or five days if the symptoms go away. Mónica reported that while she buys the whole box of penicillin, she only takes one or two pills, because "if it didn't work, it didn't work." Women also reported taking shortened courses of antibiotics because of a belief that antibiotics can be dangerous or ineffective if too much is consumed. The messages that patients received from doctors not to abuse antibiotics by taking them "too much" were sometimes interpreted to mean that one should take a smaller amount for a given illness, rather than that they should use antibiotics for fewer ailments. For example, Pilar reported that she would not give her son penicillin for more than three to four days because once a doctor told her that penicillin is not good for the body. Alejandra similarly limited the number of doses of penicillin she consumed during an illness episode because her doctor told her "not to take penicillin too much because then it won't work for your body."

The misuses of antibiotics have implications for the problem of antibiotic resistance. As humans use antibiotics, they provide a survival advantage to those bacteria that are antibiotic resistant over others in competition with them. These resistant bacteria—including nonpathogenic bacteria normally present in the body—thus become predominant and can transfer their resistance genes to other bacteria with which they come into contact, spreading the problem. In the United States, treatment of such illnesses as ear infections, gonorrhea, and pneumonia has been seriously obstructed by resistance to penicillins and tetracyclines, while in developing countries, the impact has been far more grave (34). The patterns of inappropriate antibiotic use among California Mexicans described here, similar to those found in Mexico and other developing countries, create a situation of double jeopardy for the problem of antibiotic resistance. Antibiotics are being employed both for *trivial complaints* for which they are not biomedically indicated, and in *inadequate quantities* to eliminate all bacteria in situations where they may be appropriate. As Levy (34) notes, "... each person taking an antibiotic *inappropriately* plays a larger role in the resistance problem since this is an *unnecessary* selection of antibiotic resistance" (p. 206). Pilar and Alejandra's comments indicate that messages about antibiotic misuse and resistance are being relayed by doctors, but reinterpreted and applied in unintended

ways. The physician's message to "use less antibiotics" has backfired, such that informants still use them for a wide range of illnesses, but in insufficient doses.

CROSS-BORDER MEDICATION PURCHASING

Both North County noncamp residents and South Bay families obtain a wide range of antibiotics and other pharmaceuticals from Mexico. Some informants reported visiting Mexican health services first, either because of economic constraints, which prevented them from utilizing American services, or as a second resort when dissatisfied with the treatments already provided by American physicians. More commonly, however, informants went to Mexico in order to purchase medications directly from pharmacies. Reasons for purchasing medications in Mexico included the lower cost of drugs, the possibility of avoiding the expensive medical consultations required in order to get a prescription in the United States, and the convenience of purchasing medications without a prescription. However, cost and the unregulated availability of medicines were not the only reasons given for crossing the border to buy drugs. As previously noted, for North County women Mexican products eliminate the problem of a lack of familiarity with American medicines and an inability to read English package instructions or communicate in English with American pharmacists. For South Bay women, and to a lesser extent for those in North County, a cultural preference for Mexican drugs is also an important motivation. While six out of nine South Bay women who purchase medicines in Tijuana gave lower cost and the lack of a need for a prescription as reasons for going to Mexico, six women also described using Mexican medications when American medicines did not work or when dissatisfied with a U.S. physician's treatment. Five South Bay women expressed a greater faith in the speed and strength of Mexican products as a reason for buying them. Faith in the speedy efficacy of certain forms of medication more commonly found in Mexican pharmacies, such as suppositories and especially injectables (see later), was a common reason given for preferring Mexican drugs. Annoyance with being given only over-the-counter drugs or other "weak" medicines by American physicians was also an important reason given by many women for visiting Mexican pharmacies.

For example, Jenny reported that she was unhappy with the American clinic because "if you have an illness in your throat, they don't give you anything—just Tylenol!," and she desires a stronger medication. Sometimes she thinks that "the doctor is no good," because her 8-month-old infant has had white bumps on her tongue since birth, and the doctor just says to give her Tylenol for the pain and says that it is normal. She asked her brother to bring a medicine for "infections of the tongue" from Tijuana for this problem, and when the baby is 2-years-old she intends to send someone to Tijuana to bring her pediatric penicillin. For flu (*gripe*), she plans to ask someone to bring erythromycin from Tijuana for the children, because the American doctor always gives her amoxicillin for her daughter and this gives her bumps on her skin; Jenny also feels that erythromycin is a faster and stronger drug. Alícia similarly reported with dissatisfaction that she always receives amoxicillin from American doctors; since she feels that penicillin is more powerful, she goes to Tijuana to buy penicillin instead when she "needs something stronger." It was common for almost all South Bay informants to try out a medicine provided by an American physician for a few days, then go to a Tijuana physician or pharmacy if dissatisfied or if the symptoms persisted. When Rosa's son had the flu, she took him to an American clinic and they gave him palliative medications including acetaminophen and cough medicine. But when he did not get better in four days, she concluded that the American physician and medicines had failed and went to see a Tijuana physician, who gave her Bactrim. When the boy again did not get better after three more days, she went back to Tijuana for a "stronger medicine."

In Mexico, there are few medications that cannot be bought over the counter, despite the fact that medical prescriptions are theoretically required. More rigid controls apply to highly addictive or dangerous medications only, principally narcotics and psychotropic drugs (35). Visits to Tijuana pharmacies revealed that pharmaceuticals such as antibiotics, corticosteroids, powerful analgesics, and heart and blood pressure medications were available over the counter. Most such medications contain no dosage information, with only the directive to "consult physician." Furthermore, medications available over the counter in Mexico include numerous substances that are not approved for sale in the United States and other countries, that contain questionable combinations of medications, that contain dangerous contaminants, or that are of uncertain quality (35–39).

The sale of powerful medications over the counter not only increases their availability for

self-medication, it also influences how they are categorized and *perceived.* Interviews revealed that "prescription medication" is an etic category that is not necessarily the most salient for ethnic Mexicans. Rather, informants distinguished between *drogas*—a category encompassing medications that require a prescription to obtain in Mexican pharmacies (i.e., narcotics and psychotropics)—and all other medicines. There was some evidence that the absence of a category for "prescription medications" such as antibiotics influenced informants' perceptions of their safety and the need for care in their use. When asked if she ever borrows medications, Ana responded that she does not borrow prescription medications, but she does borrow Tylenol and "Tijuana medicine." She stated that "you know that if you can buy something without a prescription, that it's not going to harm you." She said that she would borrow penicillin from someone if it were from Tijuana, but not if it was from the United States, because in the United States penicillin requires a prescription. More information is needed on how regulation differences in Mexico and the United States influence the ways in which medicines from the two countries are perceived.

Pharmacy attendants in Mexico are consulted for diagnosis and treatment recommendations in the same manner that one consults a doctor, and they are usually presumed, often inaccurately, to be qualified to fulfill this role. Logan (31) has described how clients in Mexico consult the pharmacist as a quasi-physician. In fact, interviews in the current study revealed that the pharmacist may even be believed to *be* a doctor, or at least "almost a doctor." Yet various researchers have described the prevalence of untrained or inadequately qualified personnel attending clients in pharmacies in Mexico (31, 40) as well as in other developing countries (41, 42). Illegal prescription drug vendors with low education levels are also widespread (43), including, according to informants, Latino vendors in North County. Furthermore, Tijuana is overrun by pharmacies, and vendors are thus likely to yield to patient desires for unnecessary or unprescribed medications because of the need to maintain a viable business in a highly competitive marketplace. Pharmacy attendants are not necessarily inclined to provide information that is not solicited by the client, they do not offer dosage or other information unless asked, and they may not be overly concerned as to whether or not a drug is actually indicated (44). For example, an experiment described by Gellert and Pyle (45) revealed that Mexican pharmacists were willing to recommend and sell tuberculosis medications and antibiotics to a woman who approached them complaining that her 5-year-old child had been experiencing a chronic, bad cough. Even the most well-meaning, diligent, trained pharmacist would be limited in his capacity to provide accurate diagnoses and medications in a context where only a brief, oral report of symptoms without physical examination or medical history is possible. The ill person may not even be present in this encounter; mothers commonly go to a pharmacy without the sick child and tell the drug seller the child's age and symptoms, and the attendant complies with the best diagnosis and prescription he can provide based on limited and often selective information.

It is in the context of this unregulated medication availability and lack of reliable diagnosis that many California Mexicans are purchasing a substantial number of medicines from Tijuana. Antibiotics which informants reported self-prescribing and purchasing in Mexico included penicillin, ampicillin, lincomycin, amoxicillin, tetracycline, metronidazole, gentamicin, erythromycin, and chloramphenicol. Other powerful medicines purchased without a prescription included propranolol, diazepam, corticosteroids, dipyrone, and contraceptives. Among these are a number of medicines identified as dangerous or sensitive in nature, including some that are banned from use in the United States. The indiscriminate administration of powerful medications to children, including giving antibiotics to infants for diarrhea and other symptoms, is a pattern of particular concern.

INJECTION USE

Another area of concern is the unsupervised use of injectable medications. The popularity of injections in developing countries as a powerful, "high tech" form of treatment has been well documented by researchers (46–50). In the current study, informants reported that Mexicans use injections for pain, fever, infection, "flu" (*gripe*), colds, cough, diarrhea, vomiting, bruises, headaches, asthma, contraception, heavy menstruation, taking vitamins, and many other ailments. Multidose and single-dose bottles of injectable medications, as well as disposable syringes and needles, are readily available in Tijuana pharmacies. Pharmacists in Tijuana reported that the most frequently purchased injectables are antibiotics, and that people rarely present a prescription to obtain them.

Among informants, injectables were often the preferred form of antibiotics because they were associated with rapid recovery, and injections were

seen as particularly necessary for severe or persistent illnesses (see also 32). Specific antibiotics which informants reported injecting without medical supervision included penicillin, ampicillin, tetracycline, gentamicin, and lincomycin. Injectable antibiotics were self-prescribed for such problems as flu, fever, sore throats, tonsil infections, stomach infections, and an infected in-grown toenail. A popular flu remedy mentioned by several informants is to pair injections of lincomycin with injections of Eucaliptine, a combination of plant extracts including eucalyptus. A North County Mexican outreach worker/physician also confirmed this popular use of antibiotics and eucalyptus, commenting that the effects of both are purely psychological. The extent of inappropriate antibiotic use is evident in Norma's description of her mother's antibiotic usage, which included self-injecting penicillin and ampicillin for problems ranging from a headache, to an earache, to pain associated with kidney disease:

> Sometimes she gives herself injections because she says her head hurts, her stomach hurts, or according to her she has an infection in the ear. . . . For anything! If her foot hurts, she just gives herself [a shot of] penicillin. She doesn't even know what penicillin is for, but she administers it to herself.

Informants' conceptions of how many injections they need are based on general rules and are not medicine specific; many feel that only one or two injections are generally necessary, although some stated that more are required or adjusted the course according to symptoms.

One third of informants reported family members using injectable vitamins, especially B vitamins and liver injections. Bedoyecta is a particularly popular brand name of injectable B vitamins (combination of B-1, B-6, and B-12) that was mentioned by several informants. Although the Bedoyecta box claims that its sale requires a medical prescription, in a Tijuana pharmacy they were found piled up in stacks on the customer side of the counter for purchase without a prescription. One informant also stated that Bedoyecta vitamins could be purchased in North County for $20 from a man who sells them from his car. Informants reported a number of reasons for injecting vitamins, including as a treatment for weakness, tiredness, stress, nerve tension, "if your brain hurts a lot," or to make the uterus strong during pregnancy. Thus, whereas biomedically speaking the purpose of vitamins is to correct a nutritional deficiency through on-going supplementation, informants see vitamins as one-time curative or energizing substances. They use them symptomatically in concentrated doses during times of stress or fatigue, or in some cases, at regular intervals such as once every 6 months or year. The Bedoyecta vitamin box states that the dosage is to be determined by a physician, and contains a warning that possible side effects include rash, nausea, vomiting, and on occasion, anaphylactic shock in susceptible persons. Yet vitamins and minerals are often not perceived to be medications, and are therefore considered safe to self-prescribe. An example from the medical literature is illustrative. Al-Samman *et al.* (51) report on the case of an Hispanic woman in Texas who had been purchasing and self-administering iron injections approximately 10 times per year for over 20 years. While asymptomatic, the woman was found to have hepatic iron overload as a consequence of this self-medication. Notably, at the initial interview the woman reported that she was not taking any medications, which may reflect a tendency to see vitamins and minerals as innocuous and insubstantial.

Informants reported having intramuscular injections administered by spouses, relatives, friends, neighbors, community members, and Tijuana pharmacists. Women often admitted that friends and relatives give injections with no training—that they learned "out of necessity," or that they give injections without knowing how to do so properly. When asked who could give her an injection, Alejandra responded:

> Anybody! A lot of people do it. Especially the Mexicans, we do that a lot . . . Friends. Usually my sister would do it for me, or a neighbor. We say, "Do you know how to give shots?" "Yeah." "Give me one." And it's easy, they just go *bing!* But they say that we have little veins in here, that it would be very dangerous if you damage them. I really don't know much about that, but I would say, "Oh, *no más*, give it to me."

In addition to such lay people, it is common in Mexican communities for particular individuals to be identified as lay injectionists, in some cases because they have some health sector training. Three of my informants served as such injectionists in their communities; two of these had been trained as nurses in Mexico, and the third had been taught by a Red Cross physician to administer emergency injections for her daughter's asthma attacks. All three were aware of the dangers of reusing needles and syringes, and all three were concerned about liability issues and safety. The nurses also claimed to refuse to give injections to community members unless presented with a prescription, although there were indications that this depended

on the medication involved. The nurses also refused people's requests to use disposable needles more than once. While these positive behaviors demonstrate that the use of community injectionists may provide a source of relative safety and control over administration, there are problems with their use as well. Firstly, those who are refused their services for lack of a prescription are likely to simply go elsewhere for their injection. Secondly, even the nurses' ideas about medications were often found to conflict with biomedical models. For example, one nurse-injectionist stated that penicillin is good for viruses, uses antibiotics in nonbiomedically justified ways, has fixed ideas about antibiotic dosages that are not medicine specific, and changes physician dosages if she feels they are inappropriate.

Recent concerns about injection practices focus on the potential for transmission of HIV—and to a lesser extent, hepatitis B and other disease organisms—through needle sharing. In this study, all informants who reported recent injection use stated that they use only disposable needles and syringes. Furthermore, all informants stated that disposables cannot be shared and most stated that they can not be reused even for the same person. However, these data should be regarded with caution for several reasons. Firstly, the sample size in this study was small and nonrandom. In South Bay, many of the informants have been exposed to a local AIDS prevention program, which may have influenced their knowledge of risks associated with needle sharing. Secondly, there is some limited evidence of needle reuse or sharing among the study populations. One injectionist said that sometimes neighbors bring her used needles and ask her to administer injections with them; this usually occurs with older people. One informant also expressed a willingness to lend a needle to someone else, despite her knowledge of HIV, although she would not borrow one herself.

While existing literature on the subject is sparse, what information exists provides some good reasons to investigate further the potential for disease transmission through therapeutic injection use in U.S. Mexican populations. Loue and Oppenheim (52) found that in southern California, 13 Mexican men out of 54 HIV-positive recent immigrants surveyed reported sharing needles for vitamin and antibiotic injections, and none knew if the injection equipment had been cleaned. Lafferty (53) found that among 411 mostly Latino eastern-stream migrant farm workers, 20% reported self-injecting antibiotics or vitamins, and of these 3.5% used a shared needle. Flaskerud and Nyamathi (54) report that among 216 low income Latina women in Los Angeles, 43.5% injected Mexican medications. Of this group, 48% reported reusing disposable needles and syringes and 36% reported sharing injection equipment. Methods of cleaning needles were also found to be inadequate.

The paucity of existing information on self-injection of medications results in a lack of attention to this practice in HIV education materials for migrants (32). Furthermore, evidence shows that AIDS is a growing concern among migrant farm workers in general (32, 55), as well as among Latinos and Mexicans in California and specifically in San Diego County (56), and unprotected sex with prostitutes is an important HIV risk factor among North County migrant workers (13). However, the true risk of HIV transmission through lay injections still needs to be assessed. McVea (32) suggests that since therapeutic injections among migrant farm workers are typically intramuscular not intravenous, needles are often at least minimally cleaned, and there is frequently a significant time lag between uses, the risk of HIV transmission is likely to be low. The risk of transmission of hepatitis B and other disease organisms may, however, be more substantial.

While the focus tends to be on HIV (and hepatitis B) transmission as a hazard of injection use, there are other dangers as well. Allergic reactions, overdose, and antibiotic resistance are all problems associated with a preference for powerful injectables. The injection procedure itself also poses several dangers, including gluteal abscesses, tetanus and secondary infections (e.g., staphylococcus) from a lack of sterility, paralytic poliomyelitis, nerve damage, and needle injuries (57, 58). Some informants made reference to cases of nerve damage, injuries, infections, and abscesses that resulted from informal injection administration by individuals who injected haphazardly without knowing how or where to administer the injection. Personalized horror stories about injection use gone awry because of allergic reactions, physical injuries, and overdose were common among informants who themselves used injectables, as in the following narrative:

> I know an old lady that O-D'ed on vitamins.... Because they bought this big syringe and her daughter didn't read the bottle. So she filled up the syringe—more than half the bottle . . . and I think it's ten shots from that little bottle. And her mom just went, like pfoooh! [collapsed].... And they called the ambulance and they picked her up and they had her in the emergency room I think for two days.

Other women talked about the hazards of having needles in the home with small children present. Norma no longer keeps needles in the house because her $1^1/_2$-year-old daughter once found one, took the cover off, and was playing with it.

CONCLUSIONS

This discussion demonstrates that an ethnographic approach attentive to the specific life circumstances, cultural perspectives, and social experiences of immigrants can contribute to a more thorough understanding of immigrant health issues. I have argued that the specific social, economic, and geographic context in which an immigrant subpopulation lives needs to be understood in order to comprehend health behavior, rather than generalizing based on ethnic background, or making oversimplified subdivisions according to socioeconomic or acculturative status. Furthermore, medication use and health services utilization need to be contextualized in terms of access to medications, in addition to health care access. Self-medication and self-regulation practices must be examined in relation to how people apply social and informational resources, comparative reasoning, perceptions of medicine functioning and generalizations about medicine efficacy, and concerns about dangers and side effects in determining their use of medications. Finally, cross-border pharmaceutical shopping is an important issue in border areas that makes many of the problems of unregulated medication availability discussed in international health literature relevant to the home front as well. This is particularly true for immigrants who may have particular motivations for choosing medicines from across the border, such as a preference for injectable medications. The health risks associated with self-medication with injectables, a common practice in the home countries of many immigrants, is an important issue for future research in immigrant health.

The lessons summarized here have practical implications for health programs targeting immigrant populations. For example, this study found that the lack of access to self-medication among North County camp residents led to an overuse of health services for minor complaints. Women in North County expressed a need to know more about American over-the-counter (OTC) medications, and thereby increase their own self-sufficiency in treating everyday ailments. It would certainly be cost-effective for clinics with health promotion programs serving immigrants to incorporate education on the use of OTC medications, and thereby decrease overreliance on medical services and indigent payment programs among such populations. The misuse of antibiotics purchased across the border, including injectables, is a special issue for immigrants in border areas that clearly also requires attention in health programs, if we are to avoid both the associated health hazards for the individual and the implications for antibiotic resistance on a societal level. But such education programs need to recognize that simple messages regarding the need to follow physician prescriptions or to not overuse antibiotics are insufficient where they conflict with cultural logic and preferences, or with existing social and experiential knowledge. Innovative education programs, which apply methods such as the use of culturally appropriate analogies to explain the logic of behaviors being promoted (see 59), may be required in order to draw upon, rather than resist, cultural knowledge. Finally, it is clear from this study that the application of such programs needs to be sensitive to the different life circumstances of different immigrant subpopulations and their associated needs. For example, while North County Mexican migrants may require access to new knowledge that will increase their self-reliance, South Bay immigrants, in contrast, need to understand when it is appropriate and when it is hazardous to rely on the knowledge and experience that they already possess.

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