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FOLK REMEDIES AS INDICATORS OF COMMON ILLNESSES: EXAMPLES FROM THE UNITED STATES–MEXICO BORDER

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Summary

A sample of 1235 case examples of *remedios caseros* (home remedies) were analyzed to determine the characteristics of the ethnopharmacological resources currently in use in Mexican American communities along the eastern end of the United States–Mexico border. The data analysis confirms that there is a core group of most frequently used remedies that constitute the bulk of the home treatment of common ailments in that area. The data further indicate that there is a relatively well-defined group of ailments that are considered to be more amenable to ethnopharmacological intervention than to treatment by the conventional medical system. Some of the *remedios* (both botanical and non-botanical) are presented, and a preliminary model of ailments that receive treatment from home remedies, as opposed to medical treatment, is proposed.

Introduction

A sample of 1235 case examples of *remedios caseros* (home remedies) was drawn from the ethnopharmacological archive at Pan American University, as part of a continuing effort to understand the impact of ethnopharmacology on the health status of Mexican Amercians on the eastern end of the United States–Mexico border. The sample produced examples of 510 separate botanical and non-botanical items, used to treat one or more of 198 discrete illnesses. A statistical analysis of the cases produced the following, preliminary, profile of remedies and common illnesses found within the Mexican Amercian communities of the borderlands.

Research Site and Population

The data for this study were collected from Mexican American informants in the Lower Rio Grande Valley of Texas. The Lower Rio Grande

Valley consists of four Texas counties adjacent to the Rio Grande River at its mouth. The United States side of the border contains numerous small and medium-sized towns, the largest of which are Brownsville and McAllen. The Mexican side of the border contains the two major population centers of Matamoros and Reynosa, plus scattered ranches and farms. Approximately one-half a million people live in the Valley area, while over three-quarters of a million live on the Mexican side of the border. The demographic information available from the 1980 census indicates that the ethnic characteristics of the United States population are approximately 80% Mexican American, 20% Anglo Americans, and less than 0.5% Black. The population is relatively young (more than 50% under twenty-five years of age) and relatively poor compared to the rest of the United States. This latter factor may increase the local utilization of home remedies. For whatever the reason, the variety and the frequency of usage of *remedios* in the Valley is greater than most of the rest of the United States (see Trotter and Chavira, in press).

Agriculture is the primary industry of the Valley. However, there is a growing industrial base on both sides of the border including a number of recently developed "sister" plants and *maquiladoras* (assembly plants). Thus, the area is neither rural nor urban, but a complex mixture of the two, described more fully in Trotter (1979).

The sample contains data from 378 informants ranging in age from 16 to 82, but clustering most heavily in the 30 to 55 age range. All of the informants in the sample identified themselves as Mexican American; 58.6% of the cases were provided by individuals born in the United States and 41.4% of the cases were collected from informants born in Mexico. A later report will establish whether or not there are significant differences in the ethnopharmacology of United States-born, as apposed to Mexican-born informants. Women predominate in the sample: 85.4% of the cases were collected from females, as opposed to 14.6% collected from males. This is generally representative of the study population, in that ethnographic research done in the area indicated that women are normally the primary informants about *remedios caseros* (see Trotter and Chavira, in press). Therefore, due to the existing demographic and cultural patterns of the Valley, the selected sample can be considered representative of the general knowledge about and use of *remedios caseros* in the area.

Methodology

The total ethnopharmacological archive at Pan American University currently consists of more than 3000 case examples of home remedies collected from members of at least three major cultural groups (Anglo Americans, Mexican Americans, and Mexican Nationals), plus a large number of foreign nationals (primarily Europeans and Latin Americans). The cases are collected according to a common format that consists of data recorded on a collection form which contains: (A) the common name of the herb or the

non-botanical item, either in Spanish, English, or both; (B) the scientific name of the item, if known by the informant; (C) a description of the method of preparation of the *remedio*; (D) a case description of a known use of the remedy; (E) the type of illness treated by the preparation; (F) basic socio-cultural data on the informant (name, age, sex, ethnicity, country of birth, address, languages spoken, *etc.*); and (G) identifiying information about the interviewer who collected the information from the informant (name, address, *etc.*).

A sample of 1235 cases was drawn from the total archive, such that informants who identified themselves as Mexican Americans would be selected for this particular analysis of the data. The sample was drawn in a way that assured that all of the cases provided by an individual informant would be selected, so that the range of knowledge about *remedios* amongst informants could eventually be assessed. The lowest number of cases provided by an informant was one, the highest number provided was twenty-five. Interviewers were instructed to collect no more than twenty-five cases from any informant, so this figure does not represent the total herbal knowledge of some individuals in the community. In fact, some especially knowledgeable people, called *yerberos* (herbalists), know hundreds of different *remedios* (see Trotter and Chavira, 1975). However, twenty-five *remedios*, with case examples and supporting data, are about the limit that can be collected without unduly burdening the informant's patience and goodwill. The data from the cases in the sample were given numerical codes corresponding to a uniform code book established by the author, and these codes were recorded and keypunched for each case, then stored on a DEC 10 computer for analysis. The Statistical Package for the Social Sciences (Nie *et al.*, 1975) was used to compute the statistics presented in this report.

The sample should be considered a convenience sample, since no effort has been made to deliberately collect information for the archive in a way that would assure the coverage of specific geographical or socio-cultural characteristics of the research location. Nevertheless, a general inspection of the data indicates that the results are consistent with ethnographic field data collected from the area and that the results should be reasonably representative of the ethnopharmacological knowledge within Mexican American communities of the region.

Results and discussion

Remedios caseros

Five hundred and ten separate botanical and non-botanical preparations, including combinations of items in a single mix, were discovered in the sample. The ethnographic research that preceded this analysis suggested that a core groupe of *remedios* would comprise the bulk of the cases describing ethnopharmacological treatments utilized by the study population, while the remainder of the *remedios* would consist of one or two examples each of

the less frequently used preparations. The contention is supported by the data presented in Table 1.

TABLE 1

*Remedios caseros**

	Spanish common name	English common name	Raw number	Percentage	Cumulative percentage
1.	Manzanilla	camomile	43	3.5	3.5
2.	Savila	aloe vera	40	3.2	6.7
3.	Ruda	rue	34	2.8	9.5
4.	Yerba aniz	anise	34	2.7	12.2
5.	Yerba buena	mint	29	2.3	14.5
6.	Estafiate	wormwood	28	2.3	16.8
7.	Hojas de naranjo	orange tree leaves	28	2.3	19.1
8.	Albacar	sweet basil	26	2.1	21.2
9.	Oregano	oregano	24	1.9	23.1
10.	Ajo	garlic	23	1.9	25.0
11.	Pelos de elote	corn silks	22	1.8	26.8
12.	Canela	cinnamon	18	1.5	28.3
13.	Romero	rosemary	17	1.4	29.7
14.	Borraja	borrage	16	1.3	31.0
15.	Cenizo	purple sage	16	1.3	32.3
16.	Nopal	prickly pear cactus	16	1.3	33.6
17.	Rosa de castillo	rose	14	1.1	34.7
18.	Salvia	sage	12	1.0	35.7
19.	Hojas de mesquite	mesquite leaves	11	0.9	36.6
20.	Marijuana	marijuana	10	0.8	37.4
21.	Nogal	pecan	10	0.8	38.2
22	Comino	cumin	9	0.7	38.9
23.	Golondrina	swallow-wort	9	0.7	39.6
24.	Sacate de limon	lemon grass	9	0.7	40.3
25.	El azajar	orange, blossom	8	0.6	40.9
26.	Hojas se	American tar-bush	8	0.6	41.5
27.	Cebolla	onion	7	0.5	42.0
28.	Olivo	olive	7	0.5	42.5
29.	Toronjil	balm	7	0.5	43.0
30.	Limon	lemon	6	0.5	43.5
31.	Malva	mallow	6	0.5	44.0
32.	Granada	pomegranate	6	0.5	44.5
33.	Tela de arana	spider web	6	0.5	45.0
34.	Tomates	tomatoes	6	0.5	45.5
35.	Epazote	worm weed	5	0.4	45.9
36.	Marrubio	horehound	5	0.4	46.3
37.	Miel y limon	honey and lemon	5	0.4	46.7
38.	Nuez moscada	nutmeg	5	0.4	47.1
39.	Yerba amarilla	sunflower	5	0.4	47.5
40.	Aguacate	avocado	4	0.3	47.8
41.	Alcanfor	camphor	4	0.3	48.1
42.	Altamisa	mugwort	4	0.3	48.4
43.	Alfalfa	alfalfa	4	0.3	48.7
44.	Soda de martillo	baking soda	4	0.3	49.0
45.	Cilantro	coriander	4	0.3	49.3

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TABLE 1 *(continued)*

*Remedios caseros**

	Spanish common name	English common name	Raw number	Percentage	Cumulative percentage
46.	Flor de tila	bass wood	4	0.3	49.6
47.	Hojas de guayava	guava leaves	4	0.3	49.9
48.	Huevos	eggs	4	0.3	50.2
49.	Lechuga	lettuce	4	0.3	50.5
50.	Mejorana	marjoram	4	0.3	50.8
51.	Papas	potatoes	4	0.3	51.1
52.	Papaya	papaya	4	0.3	51.4
53.	Poleo	penny-royal	4	0.3	51.7
54.	Hilo rojo	red thread	4	0.3	52.0
55.	Sal	salt	4	0.3	52.3
56.	Yerba de Cancer	copperleaf	4	0.3	52.6
	Total cases = 1235				
	Total remedies in sample = 511				

*The binomial designations for the core *remedios caseros* that are botanical items are as follows:
manzanilla (camomile) *Matricaria chamomilla* L.; *savila* (aloe vera) *Aloe barbadensis* Mill.; *ruda* (rue) *Ruta graveolens* L.; *yerba aniz* (anise) *Pimpinella anisum* L.; *yerba buena* (mint) *Mentha spicata* L.; *estafiate* (wormwood) *Artemisia mexicana* Willd.; *hojas de naranjo* (orange leaves) *Citrus aurantium* L.; *albacar* (sweet basil) *Ocimum basilicum* L.; *oregano* (oregano) *Monarda menthaefolia* Graham; *ajo* (garlic) *Allium sativum* L.; *pelos de elote* (corn silks) *Zea mays* L.; *canela* (cinnamon) *Pulchea orodata* (L.) Cass; *romero* (rosemary) *Rosmarinus officinalis* L.; *borraja* (borrage) *Borago officinalis* L.; *cenizo* (purple sage) *Leucophyllum texanum* Benth.; *nopal* (prickly pear cactus) *Opuntia* sp.; *Rosa de Castillo* (rose) *Rosa centifolia; salvia* (sage) *Salvia leucantha* Cav.; *hojas de mesquite* (mesquite leaves) *Prosopis glandulosa* Torr.; *marijuana* (marijuana) *Cannabis sativa* L.; *nogal* (pecan) *Carya illonoensis* Koch; *comino* (cumin) *Arracacia atropurpurea* Benth. et Hook; *golondrina* (swallowwort) *Euphorbia prostrata* Ait.; *sacate de limon* (lemon grass) unidentified local plant; *el azajar* (orange blossoms) *Citrus aurantium* L.; *hojas se* (American tar bush) *Fluorensia cenura* D.C.; *cebolla* (onion) *Allium cepa* L.; *olivo* (olive) *Simarouba glauca* D.C.; *toronjil* (balm) *Melissa officinalis* L.; *limon* (lemon) *Citrus aurantifolia* Swingle; *malva* (mallow) *Malva parviflora* L.; *granada* (pomegranate) *Punica granatum* L.; *tomates* (tomatoes) *Physalis ixocarpa* Brot.; *epazote* (worm weed) *Chenopodium ambrosioides* L.; *marrubio* (horehound) *Marrubium vulgare* L.; *miel y limon* (honey and lemon) *Citrus aurantifolia* Swingle; *nuez moscada* (nutmeg) *Myristica* L.; *yerba amarilla* (sunflower) *Helianthus* sp. L.; *aguacate* (avocado) *Persea americana* Mill; *alcanfor* (camphor) *Cinnamomum camphora* Nees & Eberm; *alfalfa* (alfalfa) *Medicago sativa* L.; *altamisa* (mugwort) *Ambrosia artemisiaefolia* L.; *cilantro* (coriander) *coriandrum sativum* L.; *flor de tila* (bass wood) *Tilia occidentalis* L.; *hojas de guayava* (guava leaves) *Psidium guajara* L.; *lechuga* (lettuce) *Lactuca sativa* L.; *mejorana* (marjoram) *Origanum vulgare* L.; *papas* (potatoes) *Solanum tuberosum* L.; *papaya* (papaya fruit) *Carica papaya* L.; *poleo* (penny-royal) *Mentha pulegium; yerba de cancer* (copperleaf) *Acalypha phleoides* Cav.

Table 1 presents only the most commonly encountered *remedios caseros* in the sample, along with the percentage of the total number of cases each remedy represents and the cumulative percentage of the total cases re-

presented by the *remedios* in the core group. The cutoff point for inclusion in the core group was arbitrarily designated as a *remedio* whose number of case examples was equal to or greater than 0.3% of the total sample, a total of 56 remedies. Including remedies that represent approximately 0.2% of the total cases in the sample, the only other multiple example cases would have increased the core group by an additional 93 *remedios*, but would have increased the cumulative percentage by only an additional 18.2%. This was deemed too large an increase in the total number of core remedies for too small an addition to the total cumulative percentage to warrant their inclusion. The final 361 single case *remedios* discovered in the sample constitute the remaining 29.2% of the total 1235 cases.

The ten most commonly encountered *remedios* in the sample account for approximately 25% of the total cases in the sample. Since these treatments represent a significant number of the ailments present in the community that Mexican American informants felt could be treated by ethnopharmacological resources, the following is a description of the types of illnesses these *remedios* are used to combat.

Manzanilla (*Matricaria chamomilla* L.) is used primarily to cure colic in infants, but has the secondary uses of soothing various types of upset stomach (nausea, cramps, vomiting), treating mild infections of the throat and vagina, and is occasionally used to treat *susto* (fright or soul loss), one of the folk illnesses of magical origin that has received so much attention in the literature on Mexican American folk medicine [see Rubel (1964) for a description of the etiology and treatment of *susto*].

Savila (*Aloe barbadensis* Mill.) has the widest variety of uses of all of the core *remedios*, computed by the number of separate ailment codes recorded in relation to the item. It is reported effective in treating burns (including sunburns), cuts, skin sores, acne, infected wounds, ulcers, arthritis, "tired blood", diabetes, balding, constipation, and diarrhea. Its most common uses are the treatment of burns and ulcers, while the other uses are less frequently represented by cases in the sample.

Ruda (*Ruta graveolens* L.) is most commonly used to cure ear-ache, by grinding the herb, adding it to hot oil and pouring the infusion into the ear. It is also used to treat upset stomach, to induce menstruation, and to reduce afterbirth pain for the mother.

Yerba aniz (*Pimpinella anisum* L.) is used to cure *susto*, and is more frequently used for this purpose than is *manzanilla*. Its other uses are as a mild sedative to relax nervousness, as a laxative to overcome constipation, and to treat stomach cramps.

Yerba buena (*Mentha spicata* L.) was encountered equally frequently as a cure for colic, stomach upset, nervousness, intestinal parasites, colds, and menstrual cramps; no single ailment predominated.

Estafiate (*Artemisia mexicana* Willd.) is another of the stomach remedies in the sample and is used primarily for gas, nausea, diarrhea, colic, and stomach aches.

Te de naranjo, a tea made from orange leaves, (*Citrus aurantium* L.) is used as a mild sedative to treat insomnia, menstrual cramps, and nervousness. It is also sometimes used to treat colic.

Albacar (*Ocimum basilicum* L.) is the second herb that has its most common use as the treatment of *susto*. In fact, it is the herb most commonly designated in the sample of cases for that purpose. And it has a second magical use, warding off evil spirits, when it is used as a part of a ritual called a *barrida* (a sweeping or cleansing), as reported by Trotter and Chavira (1975). *Albacar* has secondary uses as a treatment for insomnia and mild infections.

Oregano (*Monarda menthaefolia* Graham) was described as being beneficial for the treatment of colds, flu and their symptoms. The ailments treated by *oregano* were coughs, sore throat, congestion, colds, and flu.

The primary use of *ajo* (*Allium sativum* L.), the final remedy in the top ten, is to cure ear-ache by roasting a tooth of the garlic, wrapping it in cotton, and placing it in the ear until the ear-ache subsides. *Ajo* is used to treat insect bites, arthritis, stomach-ache, and insomnia as well.

The multiple uses of individual remedies indicated by the above descriptions generally continue throughout the core group of *remedios caseros*. For example, in the final ten *remedios* in the core group, where one might expect to encounter a relatively high number of remedies that treat only a single illness (due to the small number of cases encountered, if for no other reason), only one *remedio*, *hojas de guayava* (*Psidium guajara* L.), was noted for treating a single ailment, diarrhea. The other nine remedies treated multiple ailments. Eggs are used to cure *mal de ojo*, another Mexican American folk illness [see Nall and Spielberg (1967) for a description of the most common of these illnesses], plus anemia. *Lechuga* (*Lactuca sativa* L.) is used to cure insomnia and nervousness. *Mejorana* (*Origanum vulgare* L.) is used for fever, stomach-ache, and diarrhea; *papas* (*Solanum tuberosum* L.) for arthritis, head-aches, and wrinkles around the eyes; papaya fruit (*Carica papaya* L.) for cuts, intestinal parasites, upset stomach, and bed sores; *polea* (*Mentha pulegium*) for insomnia, coughs, and dizziness; red thread for hiccups and athletes foot; salt (sodium chloride) for burns, sore throats, indigestion, and toothaches; and *yerba de cancer* (*Acalypha pheleoides* Cav.) for cancer, sores, and stomach viruses.

As can be seen by the above descriptions, any particular *remedio* can be used to treat either single or, more commonly, multiple ailments, and the multiple ailments may be either related (*e.g.* coughs, congestion, sore throats, colds and flu) or unrelated groupings (*e.g.* ear-aches, insect bites, arthritis, and insomnia). At the same time, each ailment can often be treated by more than a single *remedio*, as is demonstrated in the following section.

Illnesses treated by remedios caseros

As is the case with the *remedios caseros*, there is a core group of ailments that represent the bulk of the health problems that are treated by ethnopharmacological means in Mexican American communities. This sample produced a core group of 70 most frequently encountered ailments,

out of a total of 198 separate illnesses discovered in the sample of cases. These ailments are reported in Table 2.

TABLE 2
Selected ailments treated by *Remedios caseros**

	Ailment	Raw number	Percentage	Cumulative percentage
1.	Stomach-ache	76	6.2	6.2
2.	Cough	55	4.5	10.7
3.	*Nervios*	48	3.8	14.5
4.	Colic	45	3.6	18.1
5.	Fever	43	3.5	21.6
6.	Ear-ache	38	3.1	24.7
7.	Indigestion	37	3.0	27.7
8.	Diarrhea	36	2.9	30.6
9.	*Susto*	36	2.9	33.5
10.	Constipation	29	2.4	35.9
11.	Arthritis	27	2.2	38.1
12.	Eye irritation	27	2.2	40.3
13.	Insomnia	23	1.9	42.2
14.	Sores (*granos*)	23	1.9	44.1
15.	Bladder infections	20	1.6	45.7
16.	Burns	20	1.6	47.3
17.	Kidney infections	20	1.6	48.9
18.	Diabetes	19	1.5	50.4
19.	Intestinal parasites	18	1.5	51.9
20.	Sore throat	17	1.4	53.3
21.	Colds	16	1.3	54.6
22.	Boils (*tacotes*)	15	1.2	55.8
23.	Bleeding	14	1.1	56.9
24.	Heart problems	14	1.1	58.0
25.	Insect bites	14	1.1	59.1
26.	Aches and pains	13	1.1	60.2
27.	Headaches	13	1.1	61.3
28.	Menstrual cramps	13	1.1	62.4
29.	Congestion	11	0.9	63.3
30.	*Empacho*	11	0.9	64.2
31.	Gas	11	0.9	65.1
32.	Acne	10	0.8	65.9
33.	Balding	10	0.8	66.7
34.	Cuts	10	0.8	67.5
35.	Induce menstruation	10	0.8	68.3
36.	Bronchitis	9	0.8	69.1
37.	Stomach cramps	9	0.7	69.8
38.	Tooth-aches	9	0.7	70.5
39.	Ulcers	9	0.7	71.2
40.	Asthma	8	0.6	71.8
41.	Infected wounds	8	0.6	72.4
42.	Backache	7	0.6	73.0
43.	High blood pressure	7	0.6	73.6
44.	Run-down feeling	7	0.6	74.2
45.	Tired blood	7	0.6	74.8

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TABLE 2 *(continued)*

Selected ailments treated by *Remedios caseros**

	Ailment	Raw number	Percentage	Cumulative percentage
46.	Mental disorders	6	0.5	75.3
47.	Mild rashes	6	0.5	75.8
48.	Mouth infections	6	0.5	76.3
49.	Obesity	6	0.5	76.8
50.	Pneumonia	6	0.5	77.3
51.	T.B.	6	0.5	77.8
52.	Cleanse wounds	5	0.4	78.2
53.	Hemorrhoids	5	0.4	78.6
54.	Hiccups	5	0.4	79.0
55.	Keep evil spirits away	5	0.4	79.4
56.	Liver pain	5	0.4	79.8
57.	*Mal de ojo*	5	0.4	80.2
58.	Mumps	5	0.4	80.6
59.	Uterine hemorrhage	5	0.4	81.0
60.	Warts	5	0.4	81.4
61.	Cancer	4	0.3	81.7
62.	Induce labor	4	0.3	82.0
63.	Infertile womb	4	0.3	82.3
64.	Insufficient milk	4	0.3	82.6
65.	Panacea	4	0.3	82.9
66.	Stomach virus	4	0.3	83.2
67.	Sun stroke	4	0.3	83.5
68.	Tonic for blood	4	0.3	83.8
69.	Urinary tract infection	4	0.3	84.1
70.	Whooping cough	4	0.3	84.4
	Total cases = 1234 (1 case missing)			
	Total ailments in sample = 198			

*The labels for the ailments were taken directly from the case examples, rather than being *a priori* categories designated by the author. If the label was presented in Spanish in the case, it was translated during coding and cross-checked for the accuracy of its match with its English equivalent. If there was no English equivalent, the Spanish term was retained. The author is convinced that these labels represent a folk taxonomy of illnesses that can be treated by *remedios caseros*; however, more work needs to be done to ensure absolutely that the categories are all mutually exclusive. If there is any error in the categories, it is in the direction of lumping together terms that were slightly different but appeared to be the same, rather than by splitting categories into separate units based on such differences.

Table 2 presents a list of the most commonly encountered ailments in the sample of cases, along with the percentage of the total sample represented by the cases of each ailment and the cumulative percentages of all of the cases representing ailments in the core illness group. As with the *remedios*, ailments were included in the core group if an ailment had sufficient cases to equal at least 0.3% of the total sample of 1234 cases (one case in the sample had no ailment associated with the *remedio*). By including the ailments that

represented approximately 0.3% of the total sample, the core group would have been increased by an additional 35 ailments, but the cumulative total would have been increased by only 7.0%. This was deemed too small an increase to warrant including so many additional ailments in the core. The remainder of the 93 cases were ailments that were encountered only once in the sample. These single case ailments represent the final 8.6% of the total sample of cases.

For the purposes of this preliminary report, it was decided to describe only representative ailments and their associated *remedios*, rather than to try to detail the enormous variety of *remedios* associated with even the top five or ten ailments in the core group. One way this deficiency will be corrected in the future is through the publication of all of the ethnopharmacological data associated with selected individual core ailments. The health problems chosen for presentation herein are stomach-ache, sores, inducing menstruation, pneumonia, and whooping cough.

Stomach-ache was chosen since it is the most frequently listed ailment in the sample of cases, and the others were chosen because they were spaced relatively evenly through the list of core herbs. Stomach-ache has a total of 40 *remedios* associated with it that were felt by various informants to be beneficial for eliminating this problem. The *remedios* for stomach-ache represent 7.8% of the total number of *remedios* found in the sample. The *remedios* for stomach-ache are listed in Table 3, along with the number of times each was presented in the sample and the percentage of cures for stomach-ache each *remedio* represents.

TABLE 3

Remedios used to cure stomach-aches*

	Spanish common name	English common name	Raw number	Percentage
1.	Manzanilla	camomile	14	18.7
2.	Estafiate	wormwood	7	9.3
3.	Yerba buena	mint	5	6.7
4.	Hojas se	american tar bush	4	5.3
5.	Ruda	rue	4	5.3
6.	Albacar	sweet basil	3	5.3
7.	Canela	cinnamon	2	2.6
8.	Cascara de mesquite	mesquite bark	2	2.6
9.	Cenizo	purple sage	2	2.6
10.	Muyicle	aniscanth	2	2.6
11.	Ageratum	Mexican ageratum	1	1.3
12.	Ajo	garlic	1	1.3
13.	Arandolo o mirtilo	unidentified	1	1.3
14.	Amargosa	crucifixion thorn	1	1.3
15.	Boldo	jalap from Chile	1	1.3
16.	Borraja	borrage	1	1.3
17.	Cilantro	coriander	1	1.3
18.	Tortilla de masa	corn tortilla	1	1.3

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TABLE 3 *(continued)*

Remedios used to cure stomach-aches*

	Spanish common name	English common name	Raw number	Percentage
19.	Contra yerba	caltrop	1	1.3
20.	Epazote	worm weed	1	1.3
21.	Flor de canela	cinnamon flower	1	1.3
23.	Hojas de naranjo y miel	orange leaves and honey	1	1.3
24.	Huevos y comida	eggs and food	1	1.3
25.	Limoncillo	little lemon	1	1.3
26.	Malva	mallow	1	1.3
27.	Marrubio	horehound	1	1.3
28.	Mejorana	marjoram	1	1.3
29.	Muérdago	mistletoe	1	1.3
30.	Muikle y nuez moscada	aniscanth and nutmeg	1	1.3
31.	Nuez moscada	nutmeg	1	1.3
32.	Poleo	penny-royal	1	1.3
33.	Ponse tanse	great tansy	1	1.3
34.	Sal y manteca	salt and lard	1	1.3
35.	Toronjil	balm	1	1.3
36.	Yerba almanso	unidentified	1	1.3
37.	Yerba aniz	anise	1	1.3
38.	Yerba buena y volcanico	mint and volcanic oil	1	1.3
39.	Yerba de perro	unidentified	1	1.3
40.	Zorra planta	unidentified	1	1.3
	Total *remedios* for stomach-ache = 76			

*The binomial designations for the *remedios* associated with the core ailments are presented below. No English translation was available for a number of the herbs. In such a case, only the binomial is presented. *Arandalo o mirtilo* (unidentified medicinal plant); *zorra planta* (unidentified medicinal plant); *muyicle* (aniscanth) *Anisacanthus wrightii* (Torr.) Gray; *boldo* (jalap from Chile) *Peumus boldus* Molina; *amargosa* (crucifixion thorn) *Holacantha stewartii* C. H. Muller; *yerba almanso* (unidentified medicinal plant); *guarumbo* (*Cecropia obfusifolia* Bert.); *ageratum* (Mexican ageratum) *Ageratum corymbosum* Zucc.; *yerba de perro* (*Porophylum* sp.); *contra yerba* (*Dorstenia contrajerba* L.); *muerdago* (mistletoe) *Phoradendron brackystachyum* Nutt.; *limoncillo* (*Pectis angustifolia* Torr.); *panso tanse* (great tansy) *Tanacetum vulgare* L.; *yerba del gato;* (*Crotondioicus* sp.); *capitana* (*Verbesina pedunculosa* D.C. or *Verbesina crocata* Nees); *arnica* (*Heterotheca inuloides* Cass.); *yerba de buey* (gum plant) *Grindelia aphanactis* Rydb.; *amica* (unidentified medicinal plant); *yerba de vibora* (broom snakeweed) *Gutierrezia sarothrae* Britt & Rusby; *borraja de castillo* (borrage) *Borago officinalis* L.; *chilipikin* (bush pepper) *Capsicum frutescens* L.; *menta* (mint) *Mentha viridis; habas* (English broad beans) *Vicia faba* L.; gordolobo (*Gnaphalium conoideum* H.B.K.).

The majority of the remedies for stomach-aches (70 out of 76) are prepared as a tea. However, there was one example each of *estafiate* (*Artemisia mexicana* Willd.), an egg mixed with other food, a corn tortilla, and of a lard mixture being applied to the stomach as a poultice for relief of the problem; and one example each of garlic (*Allium sativum* L.) and *hojas se* (*Fluorensia cenura* D.C.) being eaten raw to provide relief from a stomach-ache.

Sores (*granos*) are treated with 17 different *remedios*. These remedies are *ajo* (garlic: *Allium sativum* L.); *albacar* (sweet basil: *Ocimum basilicum L.); amica* (unidentified medicinal plant); *arnica* (*Heterotheca inuloides* Cass.); *capitana* (*Verbesina pedunculosa* D.C. or *V crocata* Nees.); *cebolla* (onion: *Allium cepa* L.); *golondrina* (swallow wort: *Euphorbia prostrata* Ait.); *golondrina y manteca de vaca* (swallow wort and lard); ocean water; *olivo* (olive oil); *pasas* (raisins); *yerba amarilla* (sunflower: *Helianthus annuus* L.); *yerba amarilla y mantequilla* (sunflower and butter); *yerba de buey* (gum plant: *Grindelia aphanactis* Rydb.); *yerba de cancer* (copperleaf: *Acalypha phleoides* Cav.); *yerba de gato* (*Crotondioicus*); and *yerba de vibora* (broom snakeweed: *Gutierrezia sarothrae* Britt and Rusby).

There were multiple examples only of *golondrina* (3), *capitana* (2), *yerba amarilla* (2), and *yerba de cancer* (2). Most of these remedies were prepared either as poultices or as baths, although one, *capitana*, was prepared as both a tea and a bath and another, *pasas* (raisins), was eaten raw. Six *remedios* were prepared as baths: *amica*, *capitana*, ocean water, *olivo*, *yerba amarilla* and *yerba de cancer.* The latter two were also prepared as poultices, while the remaining *remedios* (*albacar*, *arnica*, *cebolla*, *golondrina*, *golondrina* and lard, *yerba amarilla* and butter, *yerba de buey*, and *yerba del gato*) were prepared only as poultices.

The problem of inducing menstruation through ethnopharmacological means is accomplished by brewing a tea from one of the following remedies: *borraja de castillo* (borrage: *Borago officinalis* L.); *canela* plus two *espirinas* (cinnamon and aspirin: *Pulchea odorata* (L.) Cass. and acetylsalicylic acid); *chilipikin* (bush pepper: *Capsicum frutescens*); *manzanilla* (camomile: *Matricaria chamomilla* L.); *romero* (rosemary: *Rosmarinus officinalis* L.); *rosa de castillo y ruda* (rose petals and rue: *Rosa centifolia* and *Ruta graveolens* L.); and *ruda* (*Ruta graveolens* L.). No other type of preparation or administration of a *remedio* for this problem was found in the sample.

Pneumonia is cured, according to the informants, through the use of *malva* (mallow: *Malva parviflora* L.); *menta* (mint: *Mentha viridis*); *habas* (English broad beans: *Vicia faba* L.); one-month-old chickens; pigeons, and *cucarachos* (cockroaches). *Malva* and *menta* are prepared as teas, the pigeon is cut open and used as a poultice on the chest, and the one-month-old chicken is used, along with prayer, as a *barrida* (magical sweeping) to draw out the illness. The methods of preparing the *cucarachos* (cockroaches) and the *habas* (English broad beans: *Vicia faba* L.) were, unfortunately, not recorded by the informants who provided those two remedies.

The final ailment in the core group, whooping cough, is treated by four separate *remedios*: *cenizo* (purple sage: *Leucophyllum texanum* Benth.), and the combination *limon*, *gordolobo* and *miel* (lemon: *Citrus aurantifolia* Swingle; *Gnaphalium conoideum* H.B.K.; and honey) which are brewed as teas, and *leche de burra* (burro's milk) or, more specifically, *leche de burra negra* (black burro's milk) which are drunk by the patient in the morning before eating anything.

Even the small number of examples cited above indicate the richness of the ethnopharmacological resources of the Lower Rio Grande Valley. There are many herbs and non-botanical remedies available in the area, yet the number of ailments treated is relatively small compared to the number of ailments which could be treated if each remedy was used for only one or two ailments. This means that some selective force, or forces, is operating to restrict the impact of ethnopharmacology on the population. The following threefold classification of the ailments is a preliminary attempt, a generation of hypotheses, to explain this phenomenon of restriction.

First, it must be explained that most Mexican Americans in the Lower Rio Grande Valley have access to conventional medical treatment, so the explanation for the utilization of *remedios* cannot rely solely on the condition of limited access to modern medicine due to economic factors. There is a system of choice operating in which people with health problems sometimes choose to use ethnomedicine and sometimes choose to use conventional medical treatment, and, also, sometimes choose to utilize both simultaneously. An inspection of the types of illness represented in the core ailment group suggests that the ailments can be classified into three basic types, and these types suggest a rationale behind the selection of *remedios caseros* over conventional pharmacology.

The first group of illnesses can be labeled "ailments having no medical treatment". The group can be further subdivided into natural and supernatural problems. The natural problems consist of ailments from the core group like balding and colds, while the supernatural problems include *susto*, *mal de ojo*, and driving away evil spirits. The second group of illness in the typology can be classified as "ailments which do not ordinarily require medical treatment". Examples of these ailments include minor cuts and wounds, stomachache, colic, acne, burns, gas, menstrual cramps, constipation, diarrhea, obesity, *etc.* Most of the examples in this group of remedies are treatments that would be considered first-aid within the conventional medical system. Many psychosomatic complaints could also be classified as this type of ailment. The third group of illness are "ailments which the medical system has failed to deal with appropriately, from the patient's perspective". The modern medical system has, over the past fifty years, discovered treatments and cures for a large number of illness that used almost to guarantee death, and the general public has come to expect that any and all illnesses can be cured. Thus, when a terminal illness, such as cancer, or a chronic illness, such as diabetes, is encountered, people often feel the system has failed them, and many turn to alternative treatment systems that claim success. Illnesses such as cancer, diabetes, arthritis, mental disorders, asthma, T.B., and high blood pressure all potentially fit into this third category.

The rationale behind choosing either ethnopharmacology or conventional treatment appears to be one of comparing cultural typologies of illness, modified by personal experience, with the symptoms presented to the patients and/or their relatives. If the ailment fits within one of the categories described above, then folk medical treatment is applied. If the symptoms fit those categories (as yet undefined) that suggest medical treatment, then that

choice of treatment is made. Naturally, some problems are highly ambiguous, which often causes both systems to be utilized simultaneously or, perhaps, sequentially; a condition that is well documented from recent ethnographic research (see Trotter and Chavira, in press).

This typology, and the accompanying rationale for selection of type of treatment, suggest that ethnopharmacology in the Lower Rio Grande Valley tends to be complementary to, rather than in competition with, modern medicine, except in those instances where the illness is incorrectly assessed for its seriousness. Such incorrect assessment may cause the patient either to delay medical treatment and make the condition worse, or cause them to seek medical treatment for something that can not or should not be treated, and thereby causes them to waste time and money.

Conclusions

The data presented above should be considered a first level of analysis of the ethnopharmacology of Mexican Americans on the United States–Mexico border. It is almost certain that a number of refinements will be derived from increasing the size of the sample the author is using, as the archive grows, and by applying more sophisticated statistical procedures to the available data. Nevertheless, certain trends are apparent even within these constraints.

The data reconfirm the contention (see Madsen, 1964) that Mexican Americans tend to dichotomize less between supernatural and biophysical illness within the parameters of their ethnomedicine, than is true of the Anglo Americans living in the same area. This is seen in the inclusion of supernatural illness within the core group (for example, *susto*, *empacho*, and *mal de ojo*) and in the mixing of biophysical and magical *remedios* for the treatment of ailments. Examples of the use of a single remedy for both physiological and magical ailments include *albacar* (*Ocimum basilicum* L.) and *yerba aniz* (*Pimpinella anisum* L.) which are used to cure *susto* and, alternatively, used to treat insomnia, cramps, and mild infections. An example of a single ailment that has both magical and physiological remedies associated with it is pneumonia, which, according to the informants, can be treated with a tea made from *malva* (*Malva parviflora* L.) and by giving the patient a *barrida* (magical sweeping) with a one-month-old chicken. However, a note of caution should be interjected here. Certain authors [for example, Madsen (1964) and Rubel (1960, 1964)] have left the impression that the treatment of folk illnesses such as *mal de ojo*, *empacho* and *susto* constitutes the bulk of Mexican American ethnomedicine. This was previously demonstrated to be an incorrect conclusion for the magical and pyscho-social realms of *curanderismo* (Mexican American folk medicine) by Trotter and Chavira (1975, in press). The data for this paper now clearly demonstrate that these folk illnesses, while they are present in the core ailment group, do not consitute the major focus of Mexican American ethnopharmacology either.

The second trend demonstrated by the data is the existence of the core group of most frequently used *remedios* and the existence of the core group of ailments that are most frequently treated by *remedios caseros*. Together these core groups define the bulk of the ethnopharmacological utilization patterns in Mexican American communities in the Lower Rio Grande Valley of Texas.

The other major trend documented by this analysis is of the use of multiple remedies for the same ailment and the existence of multiple uses of the same remedy. This conditions raises some very interesting questions for future research.

One problem that needs to be explored further is the informants' basis for identifying one ailment from a group of related ailments, such as choosing to treat something as a stomach-ache rather than nausea (since these two are seen as discrete categories). Another is the problem of how people choose one from amongst a group of alternative *remedios* to treat a particular illness. A third question for future research is to determine how ethnopharmacological knowledge is distributed throughout the population in relation to common demographic characteristics (for example, age, sex, ethnicity, *etc.*). Another research question is to determine how informants make the choice between a magical and a biological remedy, and why they make the choice they do. If these same questions are also asked and answered for other cultural groups, as well as for Mexican Americans, it may be possible to put together a very informative picture of the patterns of medical self-reliance around the world, coupled with a better knowledge of the patterns of health-related problems that never appear in the conventional health statistics collected from physicians, hospitals, and other medical facilities.

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