Journal of Ethnopharmacology 120 (2008) 342–359

Contents lists available at ScienceDirect

Journal of Ethnopharmacology

journal homepage: www.elsevier.com/locate/jethpharm

Cross-cultural adaptation in urban ethnobotany: The Colombian folk pharmacopoeia in London

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ARTICLE INFO

Article history:
Received 10 March 2008
Received in revised form 14 August 2008
Accepted 4 September 2008
Available online 18 September 2008

Keywords:
Urban ethnobotany
Cross-cultural adaptation
Literature survey
Colombians
London

ABSTRACT

Aim of the study: To investigate traditional health care practices and changes in medicinal plant use among the growing Colombian community in London.
Materials and methods: Ethnobotanical fieldwork consisted of qualitative, in-depth, semi-structured interviews with 23 Colombians living in London and botanical identification of 46 plant species actively used as herbal remedies. Subsequently, research data were compared with literature on ethnobotany and traditional herbal medicine in the home country, using a framework on cross-cultural adaptation, adjusted for the purpose of this study.
Results: Similarities and discrepancies between data and literature are interpreted as potential indicators of continuity and loss (or deculturation) of traditional remedies, respectively. Remedies used in London that are not corroborated by the literature suggest possible newly acquired uses.
Conclusions: Cross-cultural adaptation related to health care practices is a multifaceted process. Persistence, loss and incorporation of remedies into the Colombian folk pharmacopoeia after migration are influenced by practical adaptation strategies as well as by symbolic-cultural motives of ethnic identity.

1. Introduction

When people move to urban areas they often bring along their medical traditions, despite the widespread availability of conventional allopathic health care (Balick et al., 2000; Han, 2000; Balick and Lee, 2001; Corlett et al., 2003; Pieroni et al., 2005, 2007a; Pieroni and Vandebroek, 2007). Traditional medicine includes the use of plant-based remedies and non-medication practices such as spiritual healing therapies to maintain well-being, as well as to treat, diagnose or prevent illness (WHO, 2002). The dynamics of traditional plant use within migrant communities in a city environment, and the changes these medical systems undergo when transplanted from one cultural context to another are studied within the field of urban ethnobotany (Pieroni and Vandebroek, 2007). The present article aspires to contribute to this novel discipline by exploring potential changes in the folk pharmacopoeia of Colombians living in London, United Kingdom (UK). Despite laudable efforts to improve trans-cultural health care policies (Torry, 2005), the study of health care practices in the UK among minority ethnic groups originating from outside the former Commonwealth, has been largely overlooked (Ceuterick et al., 2007). However, in light of the increasing numbers of people originating from the Andean region, with Colombians being the most numerous, research into this community and its specific health care issues in the UK is urgent and relevant (Mcilwaine, 2005).

To date, British health policies have been mainly based upon assimilationist principles, which depart from the paradigm that inequalities between ethnic groups disappear once migrants adopt habits and ideas of the majority ethnic society (Green et al., 2006). However, it is doubtable that this essentialist perspective is applicable beyond a theoretical framework, since several studies have shown that migrants neither completely abandon traditional medical practices and health beliefs, nor totally reject the majority culture's health care system (Capps, 1994; Zapata and Shippee-Rice, 1999; Pieroni and Vandebroek, 2007; Pieroni et al., 2007a). Yet, it seems logical that many migrants, especially the most vulnerable ones – in both socio-economic and legal terms – tend to make more use of their own medical help-seeking strategies (Belliard and Ramírez-Johnson, 2005). Many illegal migrants have restricted access to services, which can have serious implications for their physical and mental health. The use of health care via official channels considerably increases the risk of arrest and subsequent deportation if a patient's details are passed on to the Home Office. In light of this, many migrants refrain from seeking treatment through the National Health Service altogether. In London, there exists one clinic that provides help to Latin-Americans regardless

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doi:10.1016/j.jep.2008.09.004

of their legal status (operating through the Latin-American House). However, it is the only official allopathic health care an illegal migrant can securely obtain, and it is probable that it is not accessed by all those who need it (Román-Velázquez, 1999).

The present article will illustrate the process of cross-cultural adaptation and change in medicinal plant use by Colombians in London through a review of continued, changed and possible new medicinal plant uses. Potential changes and innovations in the Colombian folk pharmacopoeia induced by migration are derived from a comparative analysis of fieldwork data based on interviews with Colombians living in London (reflecting the post-migratory context) and reports in Colombian ethnobotanical literature (as a frame of reference for the pre-migration ethnobotanical tradition). A similar approach was followed by Vandebroek et al. (2007). Following a combination of the frameworks used by Ososki et al. (2002) and Pieroni et al. (2005), this analysis will include:

1. a comparison of fieldwork data on plant species and treatments used by Colombians in London and Colombian ethnobotanical literature in order to analyse the potential continuity of traditional health care practices;
2. an evaluation of treatments reported in Colombian literature (for all species actively used by Colombians in London) that were not supported by fieldwork data in order to study potential loss of knowledge and/or practices;
3. an assessment of species and treatments used by Colombians in London that are not described in Colombian ethnobotanical literature in order to find potential newly acquired elements in the folk pharmacopoeia of the Colombians in London.

In the latter case, an additional question to answer is: where do these new uses stem from or from which other traditions are they potentially borrowed? By comparing these data to Western clinical phytotherapy this question can be partially answered.

The results of this comparative study will be illustrated using remedies that were widespread among the participants (coca, *panela*, detox) which will be further interpreted using qualitative data derived from a thematic analysis of participants' narratives about the use of traditional herbal remedies within the context of migration. These discourses will be used to understand and explain the underlying motives of adherence to traditional uses, cross-cultural change, and the adoption of new practices.

2. Cultural context: Colombians in London

Together with Spain, the UK is home to one of the largest Colombian communities in Europe and within the UK Colombians make up the largest group from Latin-American descent (Bermúdez Torres, 2006). The number of Colombians currently living in the British capital alone is estimated to be approximately 250,000 by the Colombian Consulate (personal communication, November 2006). A huge discrepancy exists in estimates of the total Colombian population in the UK. According to statistics mentioned in the literature the range from 50,000 to 200,000 reveals that a large number of illegal residents possibly disappear between the mazes of official statistics (Mcilwaine, 2005).

Colombia's long history of political violence has instigated widespread emigration of asylum seekers and refugees to the UK as early as the 1960s. During the 1970s, the British government authorised access to non-skilled migrants for employment under the work permit system, which led to the arrival of an estimated 4000–10,000 Colombians as temporary workers in domestic and catering services (Bermúdez Torres, 2006). Many of them subsequently acquired residence status or obtained British citizenship, and now represent the legal base of the Colombian community (Block, 2005). By the 1980s greater restrictions on immigration laws imposed by the Thatcher government implied the beginning of a new wave of widespread (often illegal) migration, which continued throughout the 1990s due to the escalated internal conflict, general economic stagnation, and a worsened social situation in Colombia (caused by neo-liberal reforms) (Bermúdez Torres, 2003).

Most Colombian migrants have an urban working class background and originate from cities such as Bogotá, Medellín and Cali, or provincial capitals such as Palmira (Mcilwaine, 2005). This finding corresponds with the background data of the participants in this study, many of whom originate from these Andean urban centres. Furthermore, most Colombians in London work in low wage, unskilled or low skilled areas, such as cleaning or catering. Deskilling (i.e. people with a higher education finding only lower skilled employment) is a common phenomenon, both because of illegality and language barriers. The Colombian community in London has developed at both ends of the Victoria tube line, which links the commercial centres of Seven Sisters in the North, and Brixton in the South. Both entail Colombian grocery stores, butchers, money transfer agencies, hairdressers and other small shops or *tiendas*. Together with the Elephant & Castle shopping centre, these form the social meeting points of the Colombian community (Román-Velázquez, 1999).

3. Methodology

3.1. Anthropological techniques: semi-structured and other interviews

This research is part of a more extensive study on the use and perception of herbal remedies within the Andean community in London for which fieldwork was conducted over a period of 20 months (2005–2007). The project was granted ethical approval by the University of Bradford Ethics Committee.

Twenty-three people from Colombian descent, living in the UK between 1 and 26 years were interviewed. Fifteen women and eight men, ranging in age between 18 and 78 years, were interviewed, using an in-depth, semi-structured interview format. Interviews lasted between 1 and 3 h. Interviewees were selected by purposive and subsequent snowball sampling (Tongco, 2007). Eligibility criteria for the primary purposive sample included: minimum age of 18 years old, being from Colombian descent (first generation), permanently residing in London and having actively used at least one herbal remedy during the entire period of stay in the UK. The results based on these interviews are not claimed to be representative for the whole Colombian community in London. Prior informed consent was obtained orally before the start of each interview. Interviews were tape-recorded and fully transcribed afterwards. All interviews were conducted in Spanish.

Participants were asked to name all herbal remedies they were actively using in London at the time of the interview or they recalled having used at some point while residing in the UK. Doing so, all passive and mere knowledge of former plant uses in Colombia was excluded and only active, actual uses that outlasted migration were included in the answers (Albuquerque et al., 2006). In order to recall more remedies, participants were subsequently asked to free-list herbal remedies for a list of diseases that was compiled after a preceding pilot study (Quinlan, 2005). For each remedy, the vernacular name, plant part used, preparation, administration and provenance were recorded, as well as information on its usage (being either 'actual use', 'former/abandoned use', 'knowledge' or 'passive knowledge'). In the following part of the interview, further open-ended questions aimed at collecting data for a discourse analysis of people's perceptions on the effect of migration on medicinal

plant use and diet, illness aetiologies, change of health care practices, and ritual plant use. A thematic analysis (encoding) of these discourse related questions was done after transcription, using Nvivo7. In order to avoid linguistic bias, useful quotes were translated to English after analysis. Data from these in-depth interviews were triangulated with information from casual and open-ended interviews, participatory observation techniques and group interviews (with different participants) (Bryman, 2001).

3.2. Voucher specimens

The lack of voucher specimens and careful botanical identification of reported plant species is a weakness noted in a number of recent urban ethnobotanical publications (Sandhu and Heinrich, 2005; Waldstein, 2006). In order to rule out dubious results, in this study, 24 pharmacognostic specimens (consisting of crude, dry plant material) and botanical voucher specimens, representing 21 different plant species were collected. The botanical samples from fresh plant material were pressed and dried using conventional techniques. Most samples, however, consisted of dried, often sterile and fragmented material. All samples were identified using standard botanical literature and through comparison with the online herbarium collection of the New York Botanical Garden (NY) and with voucher specimens of the reference collections in the herbaria of La Molina (MOL) and San Marcos (USM) Universities, Lima, Peru. Both herbaria hold a large collection of medicinal species from Andean and Amazonian regions, as well as cultivated and introduced exemplars common in Colombia. The collection was deposited at the Herbarium of Pharmacognosy of the University of Bradford. In addition, generally known, common and cultivated food plants (such as garlic, potato etc.) were identified *in situ* during interviews, and no vouchers were collected for these species. To confirm common names, data were double-checked with half the number of participants, using visual stimuli (such as pictures or illustrations in books of correctly identified species). Such a back-up method is necessary, since common names often refer to more than one botanical species (Mead, 1970).

3.3. Review of the literature: Colombian ethnobotany

An online literature search was conducted using ISI Web of Science, JSTOR and PubMed for scientific articles (published before September 2007), while the library collections of Kew Gardens, the British Library and Canning House were consulted for books on Colombian ethnobotany.

Ethnobotanical literature with a major focus on the Andean region of Colombia is rather scarce. However, since all participants originated from Andean regions, studies focussing on the Amazonian part of Colombia were deliberately left out to avoid data bias related to biogeographic differences. General works on medicinal plants from Colombia were included, since they described country-wide uses of generally distributed species. Vulgarising anecdotal works were left out because these publications usually do not have clear information on plant identifications, which makes a comparison awkward (Vandebroek et al., 2007). Eventually, 13 useful literature sources were selected for review. These can be divided into the following categories: (1) standard books on medicinal plant uses in Colombia with a general focus (Pérez Arbeláez, 1935; Portilla, 1951; Garcia-Barriga, 1992; Rivera et al., 2000), (2) ethnobotanical articles and books focussing on specific Andean regions of Colombia (Antonil, 1978; Zuluaga, 1995; Arango Caro, 2004a, 2004b; Colvard et al., 2006; Toscano Gonzáles, 2006) and (3) articles and books with different themes, containing an important section on ethnobotanicals in Colombia (Diaz, 2003; Zuluaga, 2005; Amariles et al., 2006).

The comparison between fieldwork data and literature entries was based on the scientific names of the species used by Colombians in London, which would have been scientifically unsound without identification of voucher specimens. Data collected from the literature included: use(s), mode of preparation, administration, and other information on potential side effects, origin and cultural uses of a species, if mentioned. Appropriate information was stored in an Excel file, and relevant data were translated from Spanish. In addition, data were compared with two standard works on current clinical, evidence based Western phytotherapy (herbal medicines), i.e. Weiss and Fintelmann (2000) and Barnes et al. (2007).

4. Results and discussion

4.1. Active uses and prevalence of ailments

Table 1 lists all botanical taxa used by Colombians living in London for health and healing. The results are based on data of active, actual uses in London provided by the interviewees, thereby excluding quotations of known or past uses in Colombia. Following the underlying assumption that the frequency of citation of actual use (captured here in the use-index) of plant remedies parallels prevalence of health conditions in a study area, it can be supposed that this is a reflection of the types of illnesses and discomforts that have a high incidence (Vandebroek et al., 2008). The use index in Table 1 shows the percentage of participants that actively use a certain species for a given use, thereby indicating the prevalence of a specific treatment among the interviewed group. In total, the Colombian participants of this study actively use 46 different botanical species for treatment of 53 different ailments, encompassing a total of 108 different uses. These uses were lumped together in 13 overarching categories of health conditions, including a category for cosmetics and for ritual uses, which (though not medical uses per se) were included as well for their broader use as promoters of general 'well-being'. This classification is derived from participants' own concepts, thus providing an optimal synthesis of both emic (folk) and etic (scientific) perspectives (Quinlan et al., 2002). The original Spanish terminology of those ailments is indicated between brackets. As shown in Fig. 1, most herbal remedies are used for stomach ailments (*dolor de estomago*), gastritis (*gastritis*), colics (*cólicos*), flatulence (*gases*), heartburn (*acidez*), diarrhoea (*diarrea*, *estomago flojo*), constipation (*estreñimiento*) and anthelmintics (*para botar bichos o lombrices*), which make up the

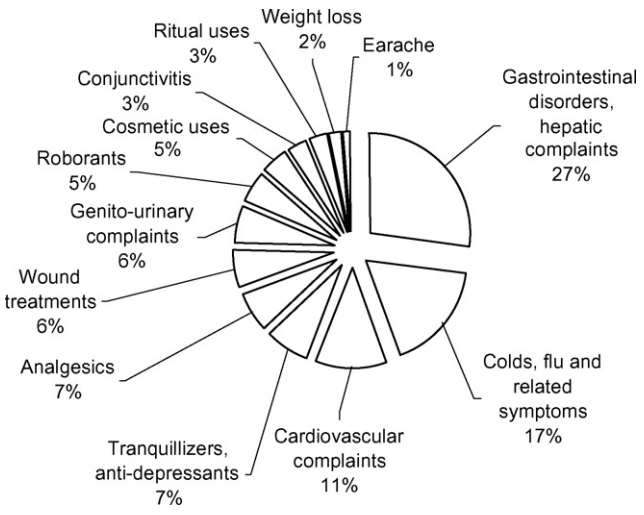

Fig. 1. Active use categories in the folk pharmacopoeia of the Colombians in London.

Table 1
Comparison active uses London – Colombian ethnobotanical literature – standard Western phytotherapy.

Family Scientific name (if applicable: voucher number)	Spanish/English name	Origin	Part(s) used	Administration	Claimed medicinal use(s) London	Use index	Traditional use in Colombian ethnobotanical literature	Same or similar use(s) recorded in Western phytotherapy
Anacardiaceae *Mangifera indica* L.	Mango/Mango	Br/E	Fruits	Juice	1. Laxative	*	1. Laxative (4)	x
					2. Headache, migraine (detox)	*	2. No reference found	x
					3. Cicatrizant (internal)	*	3. NO REFERENCE FOUND	x
							4. Antitussive (13), bronchial infections (4)	x
							5. Roots and leaves: anthelmintic, repellent (4)	x
							6. Leaves: emetic (4)	x
Apiaceae *Apium graveolens* L.	Apio/Celery	Br	Aerial parts (fresh)	Infusion/soup	1. Stomach ailments, digestive, carminative	***	1. Colics, antidiarrhoeal (8; 13), carminative (4; 8), indigestion (8), stomach tonic (1), digestive (4; 5), heartburn, stomach swelling (3)	x
					2. Health food, 'good for the blood'	**	2. Diuretic (4; 5)	x
					3. To lose weight	*	3. To lose weight, obesity (11), diuretic (4; 5)	x
					4. Hepatodepurative	*	4. Diuretic (4; 5)	x
							5. Fever (13)	x
							6. Rheumatism (13)	x
							7. Menstrual pains (8)	x
							8. Anti-inflammatory (5; 6)	x
							9. Sedative, tranquillizer (ripe, dried fruits) (4)	x
Apiaceae *Daucus carota* L.	Zanahoria/Carrot	Br	Root	Juice	1. Health food: 'good for the eye'	**	1. Source of vitamin A (6), diseases of the eye (4)	x
					2. Flu	*	2. NO REFERENCE FOUND	x
					3. Hair conditioner	*	3. NO REFERENCE FOUND	x
							4. Preventive measure against cancer (1)	x
							5. Prevents spots (4)	x
							6. Cardial tonic (4)	x
Apiaceae *Petroselinum crispum* (Mill.) Nyman ex A. W. Hill.	Perejil/Parsley	Br/E/O	Aerial parts (fresh)	Condiment/ infusion	1. Health food, condiment with digestive and depurative properties	**	1. Antispasmodic, carminative (4; 6)	B
					2. Menstrual regulator, calm menstrual pains ('to treat a cold womb')	*	2. Haemostatic (1; 4; 13)	B
							3. Epilepsy (13)	x
							4. Root: diuretic (1)	A, B
							5. Chew for strong gums (1)	x
							6. Tranquillizer (5), decoction of root: heart ailments (4)	x
Apiaceae *Pimpinella anisum* L. (MC22)	Anís/Aniseed	L	Seeds (dried)	Infusion	1. Depurative, 'good for the blood', at least 1l every 8 days	*	1. Promotes circulation of blood (4)	B
							2. Diuretic (1; 4)	x
							3. Carminative (1; 4; 5; 6)	A, B

Table 1 (*Continued***)**

Family Scientific name (if applicable: voucher number)	Spanish/English name	Origin	Part(s) used	Administration	Claimed medicinal use(s) London	Use index	Traditional use in Colombian ethnobotanical literature	Same or similar use(s) recorded in Western phytotherapy
Asteraceae *Calendula officinalis* L. (MC30)	Caléndula/Pot marigold	S/H/E	Flowers (dried)	Infusion (also topically applied)/cream	1. Anti-inflammatory (infection of the womb), cicatrizant (used after surgery)	*	1. Anti-inflammatory, vulnerary, cicatrizant (4; 6; 8; 5, 10a; 13), haemostatic (1; 4), natural antibiotic (13), antiseptic (5, 10a)	A, B
				Infusion	2. Depurative 'good for the blood'	*	2. Depurative (1), renal depurative (13)	x
				Infusion	3. Tranquillizer, sedative (to combat stress)	*	3. NO REFERENCE FOUND	x
							4. Cancer treatment (13)	x
							5. Stomach ailments (8), gastric ulcers (5)	B
							6. Menstrual pains (8)	B
							7. Expectorant (1)	x
Asteraceae *Lactuca sativa* L.	Lechuga/Lettuce	Br/E	Leaves (fresh)	Salads/infusion	1. Health food, digestive (salads or smoothie)	**	1. NO REFERENCE FOUND	x
					2. Sedative, tranquillizer	*	2. Sedative (1; 4; 6), chest pains (1), insomnia (infusion of 2-3 leaves per cup), (4)	x
Asteraceae *Matricaria recutita* L.	Manzanilla/Chamomile	Br/L/E	Flowers (dried)	Infusion/teabags	1. Stomach ailments, digestive	**	1. Digestive (1; 4; 6; 8; 10, 13), antispasmodic (8; 6; 10)	A, B
					2. Tranquillizer, sedative, nervous headaches	**	2. Tranquillizer (1; 4; 8; 10)	B
					3. Emollient (skin)	*	3. Emollient (4; 13)	x
					4. Conjunctivitis (anti-inflammatory)	*	4. Conjunctivitis, antiseptic (4), anti-inflammatory (6; 8)	A, B
							5. Fever (1)	x
							6. Baths for anaemic children (1)	x
							7. Period pains, colics (5; 8; 13), emmenagogue (4), vaginal showers (13)	B
							8. Hepatic problems (4)	x
							9. Antidiarrhoeal (4; 8)	x
							10. Laxative, purgative (13)	x
							11. Analgesic (10)	x
							12. Depurative (10)	x
Asteraceae *Taraxacum officinale* L. (MC19)	Diente de león/Dandelion	L/H/O	Leaves, root	Infusion (dried leaves and/or roasted root)/eaten (fresh root, leaves)	1. Hepatodepurative, depurative, diuretic, to treat kidney stones, infusion of roasted root drunk as a coffee substitute	**	1. Diuretic (6; 5; 8), weight loss (11)	B
							2. Laxative (1; 5)	B
							3. Rheumatism (5)	A, B
							4. Digestive problems: heartburn, gastritis (8)	A
Bromeliaceae *Ananas comosus* (L.) Merr.	Piña/Pineapple	Br	Fruits	Juice	1. Health food, laxative	*	1. NO REFERENCE FOUND	x
					2. To lose weight	*	2. Diuretic (1; 4)	x
							3. Digestive (1), carminative (4)	A
							4. Bronchitis (1; 4), expectorant (4)	x
							5. Sedative (1)	x
							6. Astringent (4)	x

Caricaceae *Carica papaya* L.	Papaya/Papaya	Br/L	Fruits (fresh, dehydrated)	Consumed entirely	1. Stomach ailments, ulcers, digestive, laxative	*	1. Laxative, anticoagulant (ulcers) (13), digestive (1; 6; 13), gastrointestinal disorders (4)	A
							2. Diabetes (13)	x
							3. Anthelmintic (13), leaves: repellent (4)	x
							4. Peel: antitussive (1)	x
							5. Seeds: astringent (1)	x
Chenopodiaceae *Beta vulgaris* L.	Remolacha/Beetroot	Br	Root (fresh)	Cooked	1. Health food, 'good for the blood', anaemia (food, smoothies, combined with other 'red' vegetables)	**	1. Anaemia (5)	x
							2. Intestinal problems (1)	x
							3. Severe sinusitis (5)	A
Chenopodiaceae *Spinacia oleracea* L.	Espinaca/Spinach	Br	Leaves	Soups, stews	1. Health food, 'good for the blood' (attributed to high levels of iron)	*	1. NO REFERENCE FOUND	x
Equisetaceae *Equisetum giganteum* L. (MC16)	Cola de caballo/ Horsetail	L	Aerial parts (dried)	Infusion/bath	1. To treat cystitis	*	1. Diuretic (1; 4; 5), anti-inflammatory (internal and external) e.g. ovaries (1; 4)	x
							2. Astringent (1; 4)	x
							3. Internal cicatrizant (5)	x
							4. Alopecia (4)	x
Erythroxylaceae *Erythroxylum coca* Lam. (MC27)	Coca/Coca leaf	L	Leaves (dried)	Teabags	1. Toothache (analgesic)	**	1. Conjunctivitis, analgesic (4; 12)	x
					2. Stomach ailments, digestive, carminative, antidiarrhoeal	*	2. Stomach ailments (1), antidiarrhoeal (3)	x
					3. Sore throat	*	3. Gargles (4)	x
							4. Stimulant, combat hunger, sleep (1; 4)	x
							5. Tranquillizer (1; 4)	x
							6. Asthma, antitussive (1)	x
Euphorbiaceae *Manihot esculenta* Crantz.	Yuca/Manioc	Br/E	Tuber	Cooked	1. Internal cicatrizant (combined with sweet potato *Ipomoea batatas*)	*	1. NO REFERENCE FOUND	x
					2. Antidiarrhoeal	*	2. Antidiarrhoeal (4)	x
							3. External use: infections of the skin (4)	x
Fabaceae *Glycine max* Merr.	Soya/Soy bean	H	Sprouts	Cooked	1. Health food, prevention constipation	*	1. NO REFERENCE FOUND	x
					2. Antihyperlipidemic	*	2. NO REFERENCE FOUND	x
							3. Health food, generally nutritive (4)	x
Lamiaceae *Melissa officinalis* L. (MC8, MC41)	Toronjil/Lemon balm	L/O	Leaves (fresh/dried)	Infusion/teabags	1. Common cold	*	1. Infusion with milk: diaphoretic (4; 5), flu, viral infections (13), refreshing, relieves headache and fever (3)	A, B
					2. Anti-depressant	*	2. Tranquillizer (1; 4; 5; 8; 13), sedative (4; 6), tonic for the heart (4; 5; 13), heart ailments (8)	A, B
							3. Antispasmodic, digestive (4; 13)	A
							4. External use (fresh leaves) vulnerary (4)	x
							5. Emmenagogue (4)	x
							6. Kidneys (13)	x
Lamiaceae *Mentha* spp., *Mentha piperita* L. (MC5, MC7)	Hierba buena, Menta/Mint	Br/O/L	Leaves (fresh/dried)	Infusion/teabags/ extract	1. Stomach ailments, digestive, aromatic infusion	***	1. Stomach ailments (1; 13), external use cataplasm (4), digestive problems, colics, diarrhoea (4; 8; 5; 10), carminative (4; 6)	A, B

Table 1 (*Continued*)

Family Scientific name (if applicable: voucher number)	Spanish/English name	Origin	Part(s) used	Administration	Claimed medicinal use(s) London	Use index	Traditional use in Colombian ethnobotanical literature	Same or similar use(s) recorded in Western phytotherapy
					2. Anthelmintic (extract fresh leaves)	*	2. Anthelmintic (8; 5; 10), external use: leaves put near bed preventive measure against parasites (4)	x
					3. Antitussive	*	3. Antitussive (5; 10; 13), bronchial problems (13)	B
					4. General painkiller	*	4. Analgesic (5; 10)	x
							5. Menstrual pains (8)	B
							6. Tranquillizer (8)	B
							7. Refreshing: relief for headaches and fever (3)	B
Lamiaceae *Ocimum basilicum* L. (MC3)	Albahaca/Basil	Br/E/O	Leaves (dried)	Infusion/condiment	1. Stomach ailments, digestive	**	1. Stomach ailments, gastric ulcers (13), carminative (4; 5; 6; 13), antispasmodic, antidiarrhoeal (5)	x
					2. Ritual use	*	2. Ritual use 'good luck', component of flower bath (seven herbs) (5)	x
							3. Menstrual pains (13)	x
							4. Sedative (5), tranquillizer, heart ailments (13)	x
							5. Diuretic (4; 5), obesity, to lose weight (11)	x
							6. Vulnerary (1)	x
							7. Otitis (1; 4; 5)	x
							8. Repellent (1)	x
							9. Bronchial infections, common cold (4; 5)	x
							10. Conjunctivitis (seed inserted in eye) (4)	x
							11. Refreshing: relief for headaches and fever (3)	x
Lamiaceae *Origanum vulgare* L.	Orégano/Oregano, pot marjoram	Br/O	Leaves (fresh/dried)	Condiment/ infusion/extract	1. Digestive, stomach ailments (preventive)	**	1. Digestive (1; 4; 13)	x
					2. Conjunctivitis (extract fresh leaves)	*	2. Anti-inflammatory (4; 6)	x
							3. Vulnerary (1; 4)	x
							4. Diabetes (4)	x
							5. Antitussive, common cold (13)	x
							6. Otitis (13)	x
Lamiaceae *Rosmarinus officinalis* L. (MC26, MC39)	Romero/Rosemary	O/Br	Aerial parts (fresh/dried)	Infusion	1. To treat stomach ailments, digestive	**	1. Stomach ailments (4; 13), spasms (4; 6; 8), carminative (4; 5)	A, B
				Infusion topically applied	2. Alopecia (scalp or hair washed with lukewarm infusion)	*	2. Alopecia (8; 13), against lice (1)	x
				Macerate	3. Sore throat: macerate in white wine, gargles	*	3. Antitussive (1; 4; 8), asthma, flu (4; 8)	x
							4. General body pains (13)	A
							5. Ritual use (13), baths for 'good luck' (1; 5)	x
							6.Toothache (13)	x
							7. Tranquillizer (5; 8; 13), heart ailments (4; 8)	B

							8. Antiseptic (5), vulnerary external use (4)	B
							9. Macerate (in wine) enhance memory (4)	x
							10. Restorative tonic (5), anaemia (4)	A
Lamiaceae *Salvia* sp. (MC29)	Salvia/Sage	H	Leaves(dried)	Preparate	1. Regulate symptoms of menopause (hot flashes etc.)	*	1. NO REFERENCE FOUND	A, B
							2. Digestive, carminative (4; 6), astringent, regulates digestive system, antiemetic (1)	A, B
							3. Repellent (13)	x
							4. Antiseptic (mouth wash) (1; 4; 6)	A, B
							5. Altitude disease (regulates blood pressure) (1)	x
Lamiaceae *Thymus vulgaris* L.	Tomillo/Thyme	Br	Aerial parts	Infusion	1. Sore throat, tonsillitis (gargles), antitussive (expectorant, hot remedy)	*	1. Diaphoretic, antitussive (1; 5)	A, B
							2. Anthelmintic (4; 5; 13)	B
							3. Antiseptic (4; 5; 10)	x
							4. Tonic for the stomach (1; 5), carminative, antispasmodic (4)	B
							5. Emmenagogue (4)	x
Lauraceae *Cinnamomum verum* J. Presl (MC1)	Canela/Cinnamon	Br/L	Bark (dried)	Infusion	1. To combat menstrual pains caused by 'cold womb', heating properties	**	1. Period pains (5)	B
							2. Headache (dehydration) caused by sunburn (5)	B
							3. Astringent, antiemetic, carminative, colics in babies (5; 10; 6; 4)	B
							4. Rheumatism (1)	x
Liliaceae *Allium cepa* L.	Cebolla/Onion	Br	Bulb (fresh)	Infusion/steam inhalant/juice: external use	1. Common cold, flu, antitussive (infusion combined with *Allium sativum*, *Psidium guayava*, *Citrus sinensis*)	**	1. Antitussive (1; 4; 5), bronchitis (5; combined with *Allium sativum*, *Citrus limon*, honey), sore throat (4)	x
					2. Anti-inflammatory, to treat burns	**	2. Anti-inflammatory (1; 4), disinfectant, to treat burns (4)	x
					3. Stomach ailments (in 'changua')	*	3. In *changua* (infusion of onion, coriander), digestive (4), external use for stomach ailments (cataplasm on stomach) (5)	x
					4. Aphrodisiac	*	4. NO REFERENCE FOUND	x
							5. Anthelmintic (5)	x
							6. Diabetes (5)	x
							7. Hypertension, circulation (5)	A
							8. Diuretic (1), renal depurative (4), weight loss (11)	x
							9. Antihyperlipidemic (5)	A
							10. Depurative (4)	x
Liliaceae *Allium sativum* L.	Ajo/Garlic	Br	Bulb (fresh)	Ingestion	1. Anthelmintic	*	1. Anthelmintic (4)	B
					2. Augments the immune system (preventive use in food)	*	2. NO REFERENCE FOUND	B
					3. Common cold, antitussive (infusion with *Allium cepa*)	*	3. NO REFERENCE FOUND	B
					4. Heart ailments ('good for the heart')	*	4. Hypertension (6)	B

Table 1 (*Continued*)

Family Scientific name (if applicable: voucher number)	Spanish/English name	Origin	Part(s) used	Administration	Claimed medicinal use(s) London	Use index	Traditional use in Colombian ethnobotanical literature	Same or similar use(s) recorded in Western phytotherapy
					5. Suspension from diet as antidiarrhoeal	*	5. NO REFERENCE FOUND	x
							6. To lose weight (11)	x
							7. Diabetes (4)	x
							8. Rheumatism (4)	x
							9. Hepatodepurative (4)	x
							10. Gastro-intestinal infections (4)	B
Liliaceae *Aloe vera* L.	Sábila, aloe/Aloe	O	Leaves (fresh)	External use (cataplasm)/ Ingestion	1. Cicatrizant (internal and external use), treat burns	**	1. Cicatrizant (8; 6), external anti-inflammatory (5), vulnerary (8)	x
					2. Hepatodepurative (detox, combined with ginger)	**	2. NO REFERENCE FOUND	x
					3. Cosmetic use (conditioner, lice)	**	3. Cosmetic use for skin and hair (13), skin (8)	x
					4. Laxative (combined with mango), digestive	*	4. Laxative (1; 4; 8), digestive, colics (1; 4)	B
					5. Antitussive, expectorant (ingestion, combined with milk, egg, honey)	*	5. Expectorant (5; 6), pneumonia (1), antitussive (8; 13)	x
					6. Headache	*	6. NO REFERENCE FOUND	x
					7. Ritual use (protection against evil)	*	7. Ritual use (behind doors, entrances) to protect from evil influences, to attract good luck (5), 'esoteric' use (13)	x
							8. Repellent (1; 4)	x
							9. Anti-diaphoretic (4)	x
							10. To treat cholesterol (13)	x
							11. Purgative, hypertension (13)	x
Linaceae *Linum usitatissimum* Griseb.	Linaza/Linseed, flaxseed	Br/H	Seeds (dried)	Infusion/ingestion	1. Laxative	***	1. NO REFERENCE FOUND	A
					2. Diuretic: kidney stones, lose weight	**	2. Diuretic, 'refreshing' (2), inflammation of urinary tracts (4), renal problems (5)	x
					3. Antihyperlipidemic (cholesterol)	*	3. NO REFERENCE FOUND	x
							4. Antidiarrhoeal, antispasmodic (6)	x
							5. Emollient (skin, cataplasm) (1; 4)	x
							6. Antitussive (4)	x
Monimiaceae *Peumus boldo* Mol. (MC2)	Boldo/Boldo leaf	L	Leaves (dried)	Teabags	1. Hepatodepurative ('detox' of the liver), to treat stomach ailments, digestive	*	1. Hepatodepurative, laxative (6; 5)	B
Myrtaceae *Eucalyptus globulus* Labill. (MC17)	Eucalipto/Eucalyptus	O/L	Leaves (dried)	Infusion/steam inhalant	1. To treat flu, common cold, antitussive	**	1. Antitussive (8; 4), anti-inflammatory, astringent (10), expectorant (1; 4; 6), to treat fever (1; 4), diaphoretic (1)	A, B
				Burnt	2. To purify the air, remove germs (especially before winter), sometimes with lemon	*	2. Antiseptic, antibiotic, depurative (1; 10), 'sauhumerios' incense (5)	B
							3. Diabetes (5; 4)	x

Myrtaceae *Psidium guajava* L.	Guayaba/Guava	Br/E	Fruits (fresh, dried)	Juice	1. Antidiarrhoeal	*	1. Antidiarrhoeal (4; 5; 13), astringent (1)	x
					2. Flu, antitussive, bronchial allergies (combined with juice of *Allium cepa*, *Citrus sinensis*)	*	2. NO REFERENCE FOUND	x
					3. Stomach ailments, digestive,	*	3. Tonic, laxative (1), antispasmodic (4)	x
					4. Health food, roborant	*	4. Anaemia, fortifying (13)	x
							5. Alopecia, decoction of leaves (4)	x
							6. Diabetes, ingestion of pulverised seeds (4)	x
Myrtaceae *Syzygium aromaticum* (L.) Merr. & L.M.Perry (MC24)	Clavo de olor/Clove	Br/P	Flower buds (dried)	Chewed/essential oil	1. Toothache (chewed or oil put on aching tooth)	**	1. Analgesic and antiseptic (4; 10), chewed with alcohol for caries (5)	B
Poaceae *Avena sativa* L.	Avena/Oats	Br	Seeds (grains)	Decoction (in water or milk)	1. Laxative (often preventive as part of diet, health food) breakfast, combined with pineapple, cinnamon	**	1. NO REFERENCE FOUND	x
					2. Detox remedy (with barley, milk and honey, to be taken on an empty stomach, during day only mango juice)	*	2. NO REFERENCE FOUND	x
					3. Emollient (mixed with milk and honey, applied as a mask, left for 15 minutes)	*	3. NO REFERENCE FOUND	A
							4. To lose weight (11)	x
							5. Arthritis (6)	x
							6. Health food: roborant (4)	x
Poaceae *Cymbopogon citratus* Stapf (MC6)	Limoncillo/ Lemon grass	L/I	Leaves (dried)	Infusion/teabags	1. Common cold, flu	*	1. Diaphoretic (1), flu (3; 8; 5), common cold, fever (3; 4; 8), tonsillitis (13)	x
							2. Carminative (1; 6), digestive (5; 10; 6), stomach ailments, ulcers, antidiarrhoeal (13)	x
							3. External use: to clean and/or whiten teeth (1; 4)	x
							4. Stimulant (1; 4), circulation of blood (10)	x
							5. General painkiller (13)	x
							6. Tranquillizer (13)	x
							7. Antiseptic (10)	x
Poaceae *Saccharum officinarum* L.	Panela/Sugar cane	L/S/I		Decoction	1. Common cold, flu, antitussive	***	1. NO REFERENCE FOUND	x
					2. Health food, fortifying	**	2. Fortifying (1)	x
					3. Emollient (facial scrub cream, combined with *Matricaria recutita*)	*	3. NO REFERENCE FOUND	x
							4. Digestive (13)	x
							5. External use: vulnerary (1; 4)	x
							6. Gargles: to cure cysts (1)	x

Table 1 (*Continued*)

Family Scientific name (if applicable: voucher number)	Spanish/English name	Origin	Part(s) used	Administration	Claimed medicinal use(s) London	Use index	Traditional use in Colombian ethnobotanical literature	Same or similar use(s) recorded in Western phytotherapy
Poaceae *Zea mays* L.	Maíz/Corn	Br	Stigma (dried)/flour	Infusion/external use	1. Cystitis, renal depurative	*	1. Cystitis (4), diuretic (1; 4; 5; 13), renal depurative (4; 13), nephritis (4)	B
					2. To treat burns	*	2. Swellings (cataplasm, flour) (1)	x
							3. Postpartum reconstituent (5), general health food (4)	x
Rutaceae *Citrus sinensis* Pers.	Naranja/Orange	Br	Fruits	Juice	1. Common cold, flu	**	1. Flu (10; 13), antitussive (13), tonsillitis (10)	x
					2. Laxative	**	2. Digestive (4)	x
							3. Tranquillizer, analgesic (5)	x
							4. Antispasmodic (5)	x
							5. Depurative (5)	x
Rutaceae *Citrus* spp. (different species)	Limón/Lemon, lime	Br	Fruits	Juice	1. Flu, common cold (hot lemon juice, combined with *panela*), sore throat (gargles of juice with salt)	***	1. Flu, sore throat (4; 13), hot lemonade for flu (5)	A
					2. Stomach ailments caused by salmonella	*	2. Stomach ailments (1; 13)	x
					3. Headache	*	3. Headache (4)	x
					4. Hypertension	*	4. Hypertension (4)	x
					5. Depurative	*	7. Depurative (4), related uses: hepatodepurative (1), combined with Allium cepa and A. sativum, antihyperlipidemic (to treat cholesterol) (5)	x
					6. Antiseptic (external use)	*	6. External use for: skin irritations (5), insect bites (1), disinfectant (4)	x
					7. Otitis (drops)	*	7. NO REFERENCE FOUND	x
							8. To lose weight, obesity (11)	x
							9. Astringent (1; 4)	x
							10. Conjunctivitis (1; 4)	x
							11. Diabetes (control levels of sugar in blood) (5)	x
							12. Carminative (4)	x
							13. Regulate imbalances of nervous system (4)	x
							14. Rheumatism, arthritis (juice of 4 lemons on empty stomach) (4)	x
Rutaceae *Ruta graveolens* L. (MC28)	Ruda/Rue	O/L	Leaves (fresh)	Condiment (traditionally with scrambled eggs)/ infusion	1. Menstrual regulator, anti-emetic	**	1. Menstrual problems, colics (5; 8; 13), traditional recipe with scrambled egg for menstrual pains (8), antispasmodic, emmenagogue (2; 4; 10)	x
					2. Flu	*	2. Antitussive (13)	x
							3. Digestive (1; 4; 5; 8; 13)	x
							4. Headache (13), analgesic, tranquillizer (1; 10)	x
							5. Avert bad luck, spells (1), to attract good luck, ritual baths (5), ritual use (13)	x

							6. Repellent (external use) (1; 2; 9)	x
							7. Anthelmintic (internal use) (4)	x
							8. Neuralgia (8), 'mal aire' (4)	x
							9. Otitis, seeds applied directly (5)	x
							10. Diaphoretic (1)	x
							11. Hepatodepurative (4)	x
Smilacaceae *Smilax medica* L. (MC10)	Zarzaparrilla/ Sarsaparila	L	Root (dried)	Decoction	1. Depurative, 'cleans the blood'	*	1. Depurative (1; 4)	x
							2. Cancer treatment (5)	x
							3. Arthritis, rheumatism (1; 5)	B
							4. Tonic (1; 4)	x
Solanaceae *Solanum tuberosum* L.	Papa/Potato	Br	Tuber (raw)	Juice/external use	1. Sedative (juice)	*	1. NO REFERENCE FOUND	x
					2. Headache (external use)	*	2. Headache (5)	x
							3. External use: to treat boils (1)	x
Tiliaceae *Tilia* sp.	Tilo/Linden	Br	Leaves (dried)	Teabags	1. Flu	*	1. Diaphoretic (4),	A
					2. Tranquillizer	*	2. Tranquillizer (1), sedative (4)	B
							3. Stomach ailments, calming (4)	B
							4. Depurative (4)	B
Valerianaceae *Valeriana officinalis* L. (MC34)	Valeriana/Valerian	S	Root > essential oil	Infusion	1. Tranquillizer, sedative	*	1. Only available prepared in pharmacies, tincture used as tranquillizer (5)	A, B
							2. Stomach ailments (6)	B
Verbenaceae *Lippia citriodora* (Lam.) Humb. Bonpl. Kunth. (MC23)	Cedrón/ Lemon verbena	O/L	Aerial parts (fresh/dried)	Infusion/teabags	1. Tranquillizer, sedative, anti-depressant, drunk to 'calm the nerves', drunk as 'agua de tiempo'	**	1. Anti-depressant (13) treat nerves, stress, depression, related to heart attacks (4; 8), tranquillizer (5; 10) sedative (6), heart ailments, 'susto' (2)	B
							2. Digestive (5; 13), carminative (4; 6; 8)	B
							3. Antiseptic (10)	x
							4. Expectorant, anti-asthmatic (1; 4; 5)	B
Zingiberaceae *Zingiber officinale* Roscoe	Jengibre/Ginger	Br	Root (fresh)	Ingestion	1. Sore throat (combined with juice of *Citrus sinensis*, honey (to balance spiciness of ginger) and butter (1sp, 3/day)	*	1. Expectorant (6)	x
					2. Augments the immune system (health food, preventive)	*	2. NO REFERENCE FOUND	x
							3. Carminative (1; 6), digestive (1)	A, B
							4. Antiemetic (6)	A

Br: British supermarkets, L: Latino/Colombian shops in London, O: own plant at home, I: import from Colombia, S: send over post by relatives, E: minority ethnic markets in London, H: health (food) stores, P: pharmacy/*: used by less than 10% of the participants, **: used by more than 10% and less than 30% of the participants, ***: used by more than 30% of the participants/(1): Pérez Arbeláez, 1935; (2): Portilla, 1951; (3): Antonil, 1978; (4): Garcia-Barriga, 1992; (5): Zuluaga, 1995; (6): Rivera et al., 2000; (7): Diaz, 2003; (8): Arango Caro, 2004a; (9): Arango Caro, 2004b; (10): Zuluaga, 2005; (11): Amariles et al., 2006; (12): Colvard et al., 2006; (13): Toscano Gonzáles, 2006/A: Weiss and Fintelmann, 2000; B: Barnes et al., 2007, x: No reference found.

complex of gastrointestinal disorders. Together with remedies for hepatic complaints and hepatodepurative agents (*para el hígado*, *limpiar el hígado*, *detox*), this adds up to 22% of all uses. An additional large amount of the Colombian folk pharmacopoeia contains remedies for the common cold (*resfrio*, *resfriado*), flu (*gripa*), and related symptoms such as sore throat (*dolor de garganta*) and cough (*tos*) (17% of all uses). Eleven percent of all uses include cardio-vascular complaints, which encompass diseases of the blood, depuratives (*limpiar la sangre*), antihyperlipidemic (*colesterol*) and antihypertensive (*presión alta*) agents and treatments for heart ailments (*para el corazón*, *palpitaciones*). This category also contains food that is considered 'good for the blood' (*bueno para la sangre*). In line with Pieroni and Quave's (2006) definition, this could be described as functional food that, apart from its nutritional purposes, is also consumed for its general health benefits. All these health conditions within the category of cardio-vascular complaints are typical examples of life-style diseases that might be induced by migration (Vandebroek et al., 2007). Remarkably, remedies for diabetes (another life-style illness) are completely absent, just like treatments for arthritis, which are nonetheless common complaints that were frequently claimed to be treated with home remedies back in Colombia, as became clear during open-ended interviews with Colombian elderly in London. Moreover, diabetes has a large incidence among Latinos in the United States, which raises the question about its prevalence among Latinos in the UK (Arcury et al., 2004).

Another widely used category of herbal remedies contains tranquillizers (*tranquilizantes*), sedatives (*algo para dormir mejor*) and anti-depressants (*para dar animo*), representing seven percent of all uses (or the fourth large use category). This confirms findings from an earlier study by Mcilwaine (2005) that indicated that stress, anxiety, insomnia and even depression are widespread among the Colombian community, especially among those without legal status or refugees coping with post-traumatic stress disorders. Avoidance of seeking medical attention (for a problem that is often not considered medical by participants) might be an explanation for the high incidence of home remedies for the treatment of psychological distress among Colombians. Other categories include wound treatments (vulneraries, antiseptics, cicatrizants, and treatments for burns), treatments for genito-urinary complaints (including cystitis and female problems such as dysmenorrhoea, amenorrhoea, and menopausal symptoms), analgesics (for head- and toothaches), roborants (restorative medicine or tonic, including agents that augment the immune system and aphrodisiacs), remedies for conjunctivitis and other eye problems, weight loss and treatments for earache. Additional uses that were also reported are: cosmetics (treatments for alopecia, lice, hair conditioners, emollients) and ritual uses. The latter category mainly includes herbal amulets (or good luck charms). The most common magico-ritual plant mentioned during interviews is *sábila* (*Aloe vera* L., see Table 1). An entire plant is usually kept near doorways to attract health, good luck and to protect against evil spirits, a custom that was also observed in several Colombian shops and restaurants in London.

This overview illustrates that people tend to use home remedies for health conditions that, according to interviewees' own accounts, are either considered of minor severity or loaded with a certain degree of taboo (such as psychological distress, lice treatments and female problems). When considering the species that appear in Table 1, those with the highest use indexes (used by at least thirty percent of all participants) are all food plants used for common ailments. Celery (*Apium graveolens* L.), linseed (*Linum usitatissimum* Griseb.) and mint (different *Mentha* species) are used for gastrointestinal disorders, while sugarcane (*Saccharum officinarum* L.) and lemon species (*Citrus* spp.) are consumed for common cold, flu and related symptoms. The species with the highest versatility (in this case: five or more different types of uses) are aloe (*Aloe vera* L.), lemon/lime (*Citrus* spp.), each with seven different applications, and garlic (*Allium sativum* L.), which has five different applications (each different type of use is indicated on a separate row in Table 1).

4.2. Cross-cultural adaptation: a comparative approach

A suitable framework to interpret a comparison of research data and literature references can be found in Kim's (2001) model of cross-cultural adaptation. Unlike theories that focus on cultural identification processes in the context of migration (Baumann, 1996), this framework is particularly relevant for studying the use of herbal remedies by migrant communities, because of its applicability to more practical forms of adaptation (Pieroni et al., 2005). The process of cross-cultural adaptation or change embodies two processes that often take place simultaneously. The first component of cross-cultural adaptation entails a loss of original cultural habits, also called deculturation (Kim, 2001). The second element, called acculturation, implies the adoption of cultural elements of the new country, 'attitudinal and behavioural changes of individuals who come into continuous contact with another culture' (Cheung-Blunden and Juang, 2008). It should be remarked that cross-cultural adaptation is not exclusive to migrant communities; in any changing community forms of adaptation may take place across all ethnic groups. Assessing the influence of traditional Colombian medicine on mainstream health care practices is outside the scope of this study, but could inspire future research.

4.3. Discrepancies: lost uses

For the 46 revised species, an extra 153 uses not mentioned in London were found in the Colombian ethnobotanical literature, as illustrated in Table 1. There is a limitation to comparing data from research with literature in that there will always be uses reported in literature that even in Colombia are not or no longer widespread. Verification of this idea falls outside the scope of the current research. Other uses, however, might also reflect habits that were lost through migration as Colombians themselves stated during this study when they recalled information about certain plants. Several reasons for this assumed 'loss' induced by migration could be distilled from an analysis of the participants' narratives.

Firstly, remedies that contain fresh plant material as an essential ingredient are often left behind. This is especially the case with different types of wound treatments. Fresh leaves of lemongrass (*Cymbopogon citratus* L.), lemon verbena (*Lippia citriodora* (Lam.) Humb. Bonpl. Kunth.), lemon balm (*Melissa officinalis* L.), basil (*Ocimum basilicum* L.), oregano (*Origanum vulgare* L.) and sugarcane (*Saccharum officinarum* L.) are all described as topically applied vulneraries in the literature from Colombia (see Table 1), yet none of them is used as such in London, mainly because they are rarely sold fresh. In addition, participants claimed to have given up these uses since they can easily be substituted by readily available alternatives that are often perceived as more practical and less time-consuming. Another example is the use of basil seeds (*Ocimum basilicum* L.) for the treatment of earache and conjunctivitis. Both are described in the literature (see Table 1) and are mentioned by participants as 'abandoned', because the seeds (that are traditionally recovered from fresh plants) are hardly ever found in London.

Other types of treatments are lost because the conditions for which they were previously used are not prevalent anymore in the UK. A typical example is that of anthelmintics. Ten percent of all species used in London (see Table 1) are mentioned for treatment of intestinal worms or other parasites in Colombian literature, while none of them is actually used as such by participants.

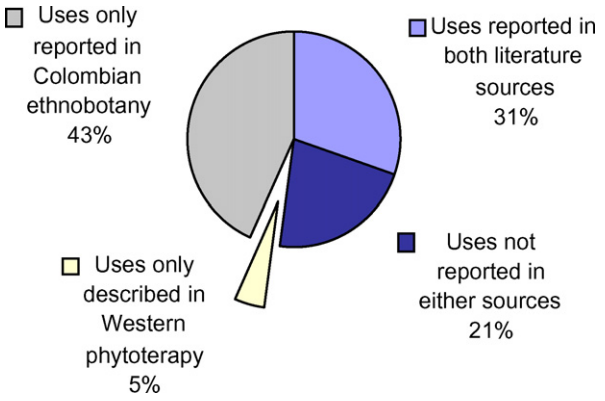

Fig. 2. Proportion of medicinal plant uses ($n = 108$) reported by participants in London described in Colombian ethnobotany and/or Western phytotherapy.

Interviewees ascribed this to improved quality of food, better overall hygiene and the accessibility of (pharmaceutical) alternatives that are widely available without prescription in pharmacy chains (see also Vandebroek et al., 2007).

4.4. Similarities: continuity of uses

4.4.1. Overlap and provenance

Seventy-three percent of all uses and 45 (out of 46) species reported in London were also described in the literature (Cfr. Fig. 2). It can thus be assumed that all these remedies outlasted migration. For two species only (boldo leaf, *Peumus boldo* Mol., cloves, *Syzygium aromaticum* (L.) Merr. and L.M.Perry) there exists an exact overlap, meaning there are no new or lost uses, when considering all the uses that were reported for these species (see Table 1). Yet, for the majority of species participants reported less uses as compared to the Colombian literature. This can be due to, among others, the limited sample size of our subjects in London. The question as to why certain uses are continued after migration while others are abandoned has been addressed before from either a utilitarian or a symbolic perspective in studies on migrant food ways and home medicines (Nguyen, 2003). Using two cases from the data of this study that were chosen for their high use indexes, both perspectives will be illustrated. Our results show that the maintenance of traditional remedies is multivalent rather than being reducible to a single explanation.

Firstly, the use of traditional remedies is influenced by different 'practical' factors, such as the prevalence of diseases amongst the participant group, the perceived effectiveness of a remedy (Yoon et al., 2004) and availability (of a certain species). The utilitarian argument basically comes down to the idea that people continue to use herbal remedies that are readily available and easily accessible in the new country (Ososki et al., 2002). There is a slight difference between availability and accessibility; a certain herb can be available, but not accessible. Some remedies used by Colombians are available in Colombian and Latino shops only, yet for some (particularly older) people those shops are not located near their home and thus inaccessible. Most remedies that are continued after migration include common, globalised species. Their worldwide distribution and availability facilitates their use considerably and explains why exactly those species outlast migration. The availability of herbal remedies is illustrated by an overview of the provenance of ingredients used in the Colombian folk pharmacopoeia in London (see Table 2). This shows that people mainly buy (known) herbs from supermarkets and Latino shops. The species with the highest use indexes are not surprisingly the ones that can be bought in the vegetable department of any supermarket, like celery (*Apium graveolens* L.), or in readily usable teabags such as mint (*Mentha* spp.) or chamomile (*Matricaria recutita* L.). Moreover, as becomes clear from Table 1, nearly 70% of all species used by Colombians in London have a primary function as food (or condiment). The clear-cut explanation for this predominance is that food plants have the widest availability in London. As Bennett and Prance (2000, p. 99) have put it: 'if transported to an urban supermarket, a South American *campesino*, just as likely would turn to the produce section to find a remedy, as he would turn to the medicine aisle'.

Table 2
Provenance of herbal remedies used in London.

British supermarket(s)	38%
Colombian and other London based Latino shops (Ecuadorian/Peruvian)	21%
Own plant (garden or flower pot)	15%
Other minority ethnic markets (non-Latino)	11%
Health (food) store	7%
Sent over postal mail by relatives	4%
Own import from Colombia	3%
Pharmacy	1%

In contrast, own import (either personal or via post packages) from Colombia is relatively small (only 7% of all herbal remedies are purchased this way). This result remarkably differs from other studies. For example, half of the ingredients of the pharmacopoeia of Turks living in Cologne has been brought unofficially into Germany directly from Turkey (Pieroni et al., 2005). Damaging and often misplaced stereotypes associating Colombians with drugs as well as harsh and vague British importation laws can be considered main reasons as to why many Colombians refrain from importing herbal remedies (Ceuterick et al., 2007). As a result, participants tend to bring only those herbs of which they are certain that they are also available (hence legal) in the UK.

While all sorts of practical considerations are at play here, the results of this study nonetheless suggest that people also continue to use plants that are hard to find or not necessarily proven to be pharmacologically effective. This idea will be further elaborated using the examples of two species that are widely used amongst Colombians in London and that can be interpreted as cultural markers, respectively coca and *panela* or sugarcane. As shown in Table 1, within the category of native Andean herbs, coca has the highest use index, while sugarcane has one of the highest use indexes among (introduced) cultivated species. Hence these species are valid examples to illustrate each argument.

4.4.2. 'In Colombia everyone has a small coca plant in the backyard' (quote from a group interview with Colombian elderly)

The persistence of traditional food ways and pharmacopoeias is often seen as a symbol in the maintenance of ethnic identity (Nguyen, 2003). Pieroni et al. (2005) found that mountain tea leaves are important markers for the cultural identity of Kosovan refugees in Germany. In this study, about a quarter of all participants continue to use coca leaves (*Erythroxylum coca* Lam.) after migrating to the UK, despite the controversy about its legal status (though another quarter claimed to have given up on using coca for exactly this reason). Whether used as a means to combat pain, hunger and fatigue, or applied in fortune telling or rituals, the coca leaf is an essential part of Andean culture (Allen, 1981). Despite all negative imagery and eradication campaigns it has never completely disappeared from the Colombian reality (Metaal et al., 2006). In London, coca tea (prepared from teabags or as an infusion of dried leaves) is mainly drunk as an analgesic for toothaches, as a digestive or gargled to treat sore throat. These treatments are widely described in Colombian literature but have not been recognised in the revised Western phytotherapeutical literature. The main pharmacologically active component of coca leaf is the alkaloid cocaine, which has an analgesic effect that has also been detected in generally

consumed teabags (Jenkins et al., 1996). Those that still use coca in London do so not only because of its effectiveness, but also because consumers claim to be 'proud of their origin'. This way, they try to overcome the damaging stereotypes that ignore the intrinsic difference between the coca leaf and its cocaine derivate. To a broader extent, this can even be seen as a symbolic attempt to cope with prejudices and overcome the daily difficulties of being a Colombian migrant. Hence, like food can be consumed to strengthen one's cultural identity (Pieroni et al., 2007b) herbal remedies can be vehicles for the metaphorical embodiment of social ideas (Laderman, 1981).

4.4.3. *"Panela is the first thing you look for when you're ill"*

This quote is from a Colombian woman (in her 30s, 10 years in the UK) and refers to another plant that is used in the negotiation of Colombian identity: *panela* (*Saccharum officinarum* L.). *Panela* is solid, unrefined sugar, obtained from the boiling and evaporation of sugarcane juice and is usually prepared as *agua de panela* (sugarcane dissolved in boiling water). Worldwide, Colombia has the highest per capita consumption of *panela* (Espinal et al., 2005). In London, it is an important treatment for common cold, flu and cough, used by almost half of all interviewees. However, no ethnobotanical reference of this use was found in the Colombian literature, which might be attributed to the fact that *panela* is a derived product and not the actual plant in itself. For its other medicinal use as a fortifying health food, only a minor reference was found in a publication from the 1930s, and relevant up-to-date information was inexistent. Furthermore, while sugarcane extract (of fresh plant material) has been proven active as an immunostimulant in chickens and pigs (Amer et al., 2004; Lo et al., 2005), no pharmacological evidence of the effect of *panela* (sugarcane in its processed form) could be found when searching PubMed and Web of Science. This raises the hypothesis that *panela* might not really be used for its pharmacological effectiveness as a flu remedy (for which so far no clinical evidence has been found), but rather as a comfort food, consumed to ensure well-being on an emotional level rather than on a physiological level. This idea is also reflected in the following quote from one of the participants:

> *Agua de panela* is a beverage that is drunk in some parts of the country almost daily, but I like to drink it when I have a cold, or a cough because it makes you feel better, though it does not really cure. (Original quote from a Colombian man in his thirties, five years in the UK: *panela es una bebida que en algunas partes del pais se utiliza casi a diario, pero a mi me gusta cuando tengo tos o estoy resfriado porque te reconforta mucho, aunque realmente no te cura.*)

It be might as well that the effectiveness of *panela* is symbolic and lies in what Moerman and Jonas (2002) call 'consumers' meaning response', i.e. the physiological or psychological effects resulting from its meaning as a comfort food. What is considered a comfort food depends on one's ethnicity and cultural background, but generally it is food covered in an aura of nostalgia, turned to for temporary relief, security or reward (Wansink et al., 2003). Hence, rather than seeing this as an example of a marker of a current ethnic identity, *panela* can be seen as emblematic of a lost identity in that it evokes images of Colombia and generates positive connotations of people's homeland. Despite the lack of appropriate pharmacological data, *panela* is an interesting example from an anthropological perspective since this case demonstrates that the continuity of the Colombian folk pharmacopoeia is not only based on practical reasons, such as accessibility, availability or (scientifically) proven effectiveness of a remedy. Instead it is illustrated that, like food, medicinal plants can be used in the negotiation of ethnic identity, and can be substance and symbol at the same time, in the latter case embodying a lost sense of belonging.

4.5. *Discrepancies: potentially new elements incorporated into the traditional pharmacopoeia*

For 29 treatments currently in use in London (which comes down to about a quarter of all uses), no reference was found in the Colombian literature (see Table 1). The absence of corroboration for some of these uses can be partly attributed to a margin of error (e.g. participants who did not remember uses or names of herbs correctly and consequently provided erroneous information), yet this could also indicate contemporary new uses (adopted from recognised phytotherapy, different minority ethnic communities, or even popularised health trends). In some cases, differences between data and literature can indicate the emergence among migrant communities of certain 'urban lifestyle' illnesses that were formerly unknown or less common and for which apparently new uses are being adopted (Vandebroek et al., 2007). For example, remedies used in London for the treatment of high cholesterol (i.e. linseed, *Linum usitatissimum* Griseb. and soy, *Glycine max* Merr., both purchased in health food stores) are not corroborated in Colombian literature and could thus point to certain new health care problems related to a changed lifestyle.

Five of the uses not described in Colombian ethnobotany are reported and recognised in Western clinical phytotherapy (see Table 1). An interesting example here is the use of sage, *Salvia* sp. for menopausal complaints. Its use as a memory enhancer and treatment for excessive perspiration (hot flushes) is extensively described in Western phytotherapy (Weiss and Fintelmann, 2000; Barnes et al., 2007). No reference on menopausal complaints could be found in the consulted Colombian literature sources. This might be an example of the medicalisation of a normal phase of a woman's life cycle in the West (Illich, 1975), which might previously not been considered a medical problem in Colombia.

Twenty-four of these uncorroborated uses were not supported by Western phytotherapy either (see Table 1). Some of these uses appear in traditional pharmacopoeias of other minority ethnic communities in London. For instance, the use of ginger (*Zingiber officinalis* Roscoe) as a flu remedy has origins in Indian phytotherapy (Williamson, 2002). In fact, 11% of all remedies in the Colombian folk pharmacopoeia are frequently purchased from specialised markets in London, other than Colombian or Latino (i.e. Caribbean, African or Indian). This example suggests that cross-cultural adaptation is not one-way process but rather a diverse and complex phenomenon that goes beyond the sole incorporation of customs from the dominant ethnic culture, as is captured in the following quote:

> I have learned this in England... mostly because of my curiosity...I have a lot of African friends and my husband had Indian roots. With them I learned to prepare a lot. I have learned from this mixture of different cultures. (Original quote from a Colombian woman in her late forties, sixteen years in the UK: *Eso, lo aprendí aquí en Inglaterra... Más que todo a través de mi curiosidad. Tengo muchos amigos del África, mi esposo tenía raíces indianas. Con ellos aprendí a preparar mucho. He aprendido con la mezcla de diferentes culturas.*)

As such, divergences between data and literature can be seen as a reflection of the dynamics of the incorporation of new uses and health care practices after migrating to a new, multicultural context (Nguyen, 2003).

Most remedies (11 treatments) that are not corroborated in Colombian literature were referred to by participants as 'detox' treatments. More than a third of all interviewees had used a detox remedy in London. According to the retailer of a Latino herbal shop in London, the majority of the sold products consist of hepatic detox cures. Forty percent of all remedies not recognised in

literature from Colombia included a sort of detox remedy. Though originally a medical term referring to treatments of alcohol- and other drug addictions, the word 'detox' is now used in popular jargon to describe diverse therapies purporting to cleanse the body of accumulated toxins resulting from poor nutritional content of processed foods, pesticide residues in food, and atmospheric pollutants (Fitzpatrick, 2003). Strengthening the body through diet and cleansing natural remedies is a common system of healing in European and North American naturopathy and a popular middle-class phenomenon that can be situated within a broader revival of all kinds of complementary and alternative medicine (CAM) among the British population (Thomas et al., 2001; Kirmayer, 2004; Greenhalgh and Wessely, 2004). The commercial detox assortment, widely covered by the British media, embraces an amalgam of non-prescribed, over-the-counter remedies ranging from herbal teas to dietary supplements, sold in pharmacies, health food stores and supermarkets. Despite its popularity, scientific evidence on the effectiveness and safety of these detox cures and diets is virtually inexistent (Dixon, 2005). The whole 'detox' idea can be understood as a sort of urban trend, a quasi-medical phenomenon (i.e. presented as medical, but without a scientific foundation) based upon the commercialisation of a former medical concept, thus reflecting a fusion of health care and consumer culture (Doel and Segrott, 2003). Detox cures used by participants consist of 'general' cleansings (usually laxatives used as part of a fasting cure, or to overcome change of diet and bad adaptation to 'western food'), depuratives for the blood and periodic liver 'detoxifications' (hepatodepuratives). The popular detox concept (referred to by participants as *detox*, *desintoxicación*, *purificación*, *limpiar el organismo*, *limpiar el sistema*) is absent in the revised Colombian literature. While the use of detox cures could ostensibly be interpreted as a new use incorporated into the folk pharmacopoeia after migration, the absence of the detox concept in Colombian literature as such might not necessarily mean that participants adopted this type of treatment in the UK.

Unlike the 'typical' commercial detox cures that consist of processed or pre-packed products (such as vitamins, tablets, herbal mixtures etc.), as shown in Table 1, many Colombians tend to use home-made remedies based on natural ingredients they are familiar with (such as pineapple, *Ananas comosus* (L.) Merr., mango, *Mangifera indica* L. and aloe, *Aloe vera* L.). Furthermore, the notion of 'detoxifying' might not be that distinct from traditional Andean medical concepts as it seems. The detox concept, which has been called a 'secular metaphor of human vulnerability', arises from the idea that humans are constantly 'threatened' by their environment (Greenhalgh and Wessely, 2004). This image of a constantly hostile and inherently dangerous environment is central to Andean medical cosmology (Greenway, 1998; Larme, 1998). The discourse used in advertising for detox cures is thus to some extent reminiscent of concepts in traditional Andean medicine (Miles, 1998b). Cleansings (*limpias*) are common in Andean healing practices, for example after giving birth, or for ritual purposes (Cajiao et al., 1997). In Colombia, *baños de florecimiento* (floral cleansings) are still practised (usually as a way to 'wash off' negative energy). Whilst none of the Colombians actually claimed having applied this type of ritual cleansing in London, some mentioned the custom when talking about their use of herbs before migrating to the UK. Hence, it is possible that Colombians have partially taken on the detox trend because of similarities with their own traditional medical concepts.

Not only does this detox case illustrate the hybrid nature and medical pluralism typical of Andean folk medicine (Andrade et al., 2005), it also reveals a specific limitation of the current comparative literature search. Uses that are not described in the literature do not necessarily indicate completely new uses, and in fact some contemporary uses in Colombia might have fallen between the mazes of this comparative methodology. It is hard to decipher to what extent this commercial phenomenon could be applicable onto an urban context in Colombia, though it might be assumed that considering the transnational character of the marketing of many of these detox commodities, it may have also reached at least the urban areas there. The detox example also shows how the world has increasingly become a global village, where we all eat the same, use the same herbal remedies and follow the same commercial trends. It illustrates how marketing strategies transform herbal medicine and how global commercialism increasingly influences and transforms medical knowledge (Miles, 1998a). This phenomenon makes it particularly difficult to demarcate how 'traditional' certain health care practices really are and even to track down whether a use is in fact post- or pre-migratory in origin. Finally, considering the absence of scientific evidence for any of these detox cures that are widely used, the detox example might also reveal potentially dangerous trends, which merit further investigation and deserve appropriate attention from health care policy makers.

5. Conclusion

In this article, cross-cultural adaptation strategies among Colombian migrants in London were investigated by comparing their folk pharmacopoeia to ethnobotanical literature from the home-country, through adaptation of an existing model on interculturality processes.

First, discrepancies between actual uses and literature can be interpreted as uses that are potentially lost and thus as a form of deculturation from the home culture. The reasons for which people stop using certain remedies are various, with availability of better alternatives and diminished prevalence of certain disorders being the main causes. Correspondingly, most remedies are used for common minor ailments (such as common cold, flu and gastric problems).

Second, an overlap between the Colombian ethnobotanical literature and the current folk pharmacopoeia in London can be interpreted as continuity of use. Here, availability and perceived effectiveness play an important role. Accordingly, most species are purchased in supermarkets. This practical argument is further reflected in the plant inventory, showing that most plants that are actively used for medicine by Colombians in London consist of food species (fruits, vegetables or condiments and spices). Yet, a mere utilitarian argument does not appear to be a sufficient explanation. In fact, continuity of plant uses is multivalent. Apart from being an effective remedy, herbal remedies can function as ethnic markers, in that they are vehicles of migrants' identity. The example of coca suggests that, despite the low availability, uses are continued, not only because of proven effectiveness but also as a sort of resistance against stereotyping of Colombians and their cultural traditions. On the other hand, the example of *panela* shows that a remedy does not have to be pharmacologically efficient to 'survive' migration. It is argued that a role as 'comfort food' that embodies a lost sense of the homeland can be important as well.

Third, some uses that are absent in Colombian literature are interpreted as new elements in migrants' folk pharmacopoeia, and thus as a form of acculturation towards the new society. In modern-day London this context is inevitably multicultural. The provenance of ingredients of the pharmacopoeia shows that people effectively adopt ethnic uses as well as popular British remedies. This last tendency is best reflected in the use of different detox remedies, which illustrates the influence of commercial trends on the folk pharmacopoeia, which is not necessarily related to migration.

This comparison demonstrates that cross-cultural adaptation related to health care practices is a multifaceted process, that cannot be pinpointed to either practical, utilitarian arguments alone, nor to a single symbolic-cultural interpretation.

A more comprehensive and quantitative study that compares data (of active uses) from the regions of origin of the participants with the data collected in London, could reveal the wider applicability of these results and thus represent an important source of information for health care policymakers. In summary, this article offers a model to study the dynamics and cross-cultural adaptation of migrant plant use in an urban context.

Acknowledgements

This project received financial support from the Leverhulme Trust (PI: Andrea Pieroni, Grant number F00235D). Special thanks go out to all participants for their kind and inspiring contributions.

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