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Medicinal plants diet as emerging complementary therapy from the Amazonian tradition. Data from Centro Takiwasi, a Peruvian therapeutic community

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ABSTRACT

This article presents data related to diet-retreat users at Centro Takiwasi, a therapeutic community that specializes in addiction rehabilitation based on a protocol that combines western psychotherapy with traditional Amazonian medicine. Central to Amazonian shamanism in Peru is the *dieta* (diet-retreat), a practice of drinking plant preparations in isolation in the rainforest while observing dietary restrictions, abstaining from social relations, sexual activities, and the use of perfumes. In the past two decades, the *dieta* has become increasingly popular among a global audience as an alternative form of healing for various physical and mental health conditions. We discuss socio-demographic data of the diet-retreat users at Centro Takiwasi from 2012-2017, describing as well the main plants used for this medical practice inspired by the local Amazonian traditional knowledge. Results indicate a rising interest in the shamanic diet for westerners as a complementary or integrative therapeutic experience. Further research on the Amazonian diet could contribute to implement a novel approach in herbal medicine at large.

KEYWORDS: Shamanic diet, shamanic tourism, diet-retreat, traditional Amazonian medicine, teacher plants, Takiwasi

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INTRODUCTION

Amazonian Diet-retreat: A Traditional Medicinal Tool

Traditional Amazonian Medicine (TAM) in Peru is characterized by a profound knowledge and use of medicinal plants by traditional healers, locally known as *curanderos* or *chamanes* (shamans) [1]. One widely-used practice of administering plant medicine is through a *dieta* (diet) in which a shaman or his/her client drinks a particular plant preparation for a period of time while observing certain dietary and lifestyle restrictions. A diet can last days, months, or even years depending on the purposes. During this time, the participant lives in isolation, abstains from sex, alcohol, salt, sugar, and meat, though some types of fish may be allowed. Although this technique is widespread in the Peruvian Amazon, there is no detailed literature on this traditional practice from the ethnobotanical or ethnopharmacological perspective. The

few reports that have referred to this method of healing were based on observations in regions around Pucallpa [2], Chazuta [3,4], and Iquitos [5,6], which lie in different parts of the middle- and Northern Peruvian Amazon. In Amazonian cosmology, plants are agential beings with whom it is possible to interact. Medicinal plants, often known as teacher plants (*plantas maestras*) each have a spirit or *madre* (mother). During the *dieta*, a shaman or client interacts with the spirit of the plant in order to heal and/or to learn about how to prepare and heal with other plants. Among an increasingly global clientele, the *dieta* is used to treat a wide variety of physical and emotional conditions, depending on the medicinal plant consumed during the diet period and the specific restrictions applied. It is also often used to strengthen or clean the body at physical and energetic levels. In addition to being a therapeutic technique, the *dieta* represents a fundamental process in shamanic apprenticeships, hence why it is also referred to as the "shamanic diet".

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Amazonian Diet-retreat as an Emergent Complementary Therapy

Perhaps the most significant attraction to Amazonian plant medicine is an increased international interest in the psychedelic tea known as Ayahuasca. The popularity of this psychoactive Amazonian beverage has increased substantially over the past few decades [7], facilitating a considerable growth in so-called shamanic tourism in Peru [8-10]. This therapeutic practice is a growing sector of wellness tourism in Peru, yet to date there are no reliable statistics that report the extent of this growth. Nevertheless, wellness tourism is a rapidly growing niche segment of global tourism that generated \$438.6 billion in revenue in 2013, with promising growth projections [11]. Most Ayahuasca tourism in Peru occurs in specialized retreat centers that offer 'shamanic experiences' through ritual administration in nighttime ceremonies. While many of these centers specifically focus on Ayahuasca, some also offer a more traditional *dieta* protocol. Although the *dieta* experience usually includes one or more Ayahuasca ceremonies, there is a clear difference between ayahuasca-retreats and diet-retreats. For example, dietary restrictions vary among the two types of retreat, as well as the duration of the retreat and the cost of the experience. In Peru, most TAM centers offering shamanic experiences with Ayahuasca and plant diets are concentrated in the areas around Cusco, Pucallpa, and Tarapoto, and particularly in or near Iquitos, where there may exist between 30 and 100 centers [12].

The Diet-Retreat at Centro Takiwasi

The Takiwasi Center for the Rehabilitation of Drug Addiction and Research on Traditional Medicines (Centro Takiwasi), is a non-governmental organization (NGO) that specializes in the treatment of substance use disorders (SUD) by combining western psychotherapy and TAM [13,14]. Takiwasi is a therapeutic community founded in 1992 and recognized by the Peruvian health authority. In addition to addiction rehabilitation services for members of the therapeutic community, Takiwasi offers other health-related services for ambulatory patients, including a standard format of diet-retreats. Diets are offered once a month and involve spending 8 days in an isolated shelter in the forest while ingesting *plantas maestras* [2,5]. The plants taken by diet participants vary by individual based on a diagnostic process that involves a physical and mental health evaluation and a letter of motivation for participation. If deemed mentally and physically fit for the *dieta*, participants begin with an introductory psychotherapy session, which is followed up by psychotherapy sessions during and after the *dieta*.

Takiwasi uses approximately 20 different plant species for diets [15,16], some of which are mentioned in Politi and Friso (2018) [17] and Politi et al (2018) [18]. In the present work in the present work we provide a detailed description of the main medicinal plants administered to the diet-retreat users of Centro Takiwasi from 2012 to 2017. Based on the information gathered from the therapists of the center and an up-to-date literature review, we evaluate and discuss further research needs

as well as possible initiatives to encourage novel understandings and insights in the field of phytotherapy and herbal medicine. The main objectives of the present study are to evaluate the sociodemographic data of the diet-retreat participants of Takiwasi, as well as to describe the main plants used for this medical practice inspired by the Amazonian traditions.

MATERIALS AND METHODS

The PLUS System

Since 2012, Takiwasi has collected data on every kind of client (i.e., ambulatory and residential) using an internally developed electronic platform for clinical data management named PLUS. The PLUS software system was used to acquire the sociodemographic data of the diet-retreat participants of Takiwasi. This system was created by co-author GSR in compliance with the Peruvian regulation for Therapeutic Communities Law N° 29765 as a database for case reports of 'residential' or 'ambulatory' clients [19]. Residential clients are males who live in the therapeutic community, most of whom seek treatment for SUD and follow a treatment protocol lasting up to 12 months, during which diagnostic data are acquired based on internationally validated tools such as the Addiction Severity Index (ASI), the International Classification of Diseases (ICD-10), and the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).

Fieldwork and Literature Review

Semi-structured interviews with some of the therapists and herbal practitioners at Centro Takiwasi were performed in order to record the perceived main characteristics of each single plant medicine and the reasons for their administration based on the experience accumulated at Takiwasi overtime. Further explanation about the properties of medicinal plants was audio-recorded before the start of the *dieta* retreat.

Standard scientific databases including Pubmed, Pubchem, ScienceDirect and Scopus were used to access peer-reviewed publications with the aim to acquire up-to-date pharmacognostic and phytochemical data on the main botanical species used as diet plants. The search was extended to grey literature, including graduate student theses, policy documents, and books or reports. All the species were identified based on the common names used in the region and comparison with local specialized literature [3,20]; Latin names were confirmed through the use of the website www.theplantlist.org from where synonyms were derived as well.

RESULTS AND DISCUSSION

Sociodemographic Analysis of Takiwasi Diet-retreat Participants

From January 1996 to December 2017, a total of 2,365 diet-retreats were conducted at Takiwasi with 1,936 different participants (some repeated the treatment). Sociodemographic

data of participants are available in electronic form beginning in January 2012 through December 2017. In this time period (2012-2017) there were 654 treatments among 528 participants (31% female, 61% male), with an age range between 16 and 76 years old. The most common age range in this period was between 31-35 years (108 clients). The majority of participants were single (62%), the rest were married (17%), in domestic partnerships (11%), and divorced (9%). The majority of participants had completed a university degree (64%), followed by uncompleted university study (13%). Most participants identified as either Catholic (41%) or with no religious affiliation (40%).

A total of 62 diet-retreat sessions were completed between 2012 and 2017. Takiwasi accommodates a maximum of 19 participants in each retreat, which are usually booked to capacity. Figure 1 shows an increasing trend of people who come to participate in diets, with 1.79 times more participants in 2017

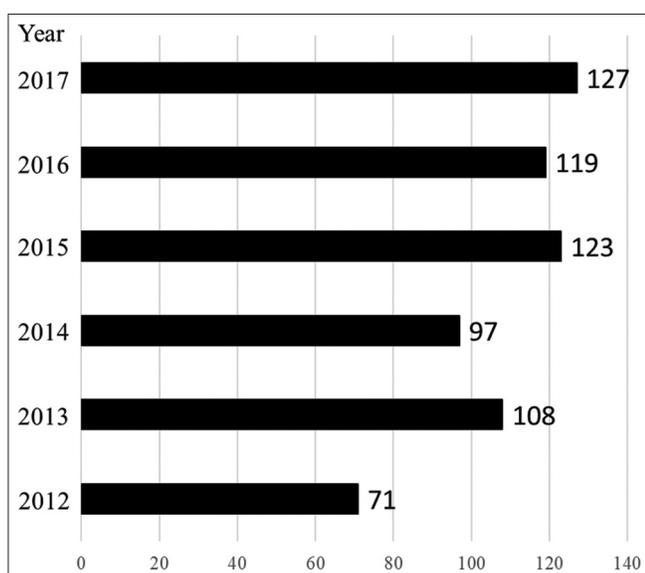


Figure 1: Number of diet-retreat users at Centro Takiwasi 2012-2017

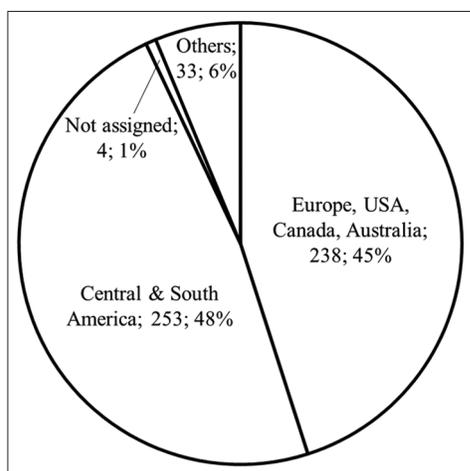


Figure 2: Nationality of diet-retreat participants at Centro Takiwasi, 2012-2017

than in 2012. 13% of participants repeated the treatment in this 5-year period, the majority of which only repeated two times. Nationality (Figure 2) is mostly distributed between Western Europe and South America, the majority coming from France (18%), Peru (13%), Argentina (13%), and Chile (10%); all other nationalities count below 6%. The overrepresentation of French participants is likely influenced by the fact that treatment is available to both French- and Spanish-speaking participants, while English and other languages are less represented among the therapeutic team.

Administration of Plant Medicines

All medicinal plant concoctions given to the diet-retreat participants are prepared following traditional processing methods [21]. During the diet, the shaman(s) who works with Takiwasi visits the participants two or three times a day to administer the plants medicines. At Takiwasi, most diet participants are given a primary plant and secondary plant, though some only take one plant. Most, but not all, primary plants are administered twice a day (early morning and late evening), and the secondary one, if present, is taken only midday. On the third day of the diet, a cup of concentrated tobacco juice is also usually administered to strengthen the effect of the plants. Participants are fed a simple diet of boiled plantain, plain cooked oats, or plain cooked rice and are instructed to avoid exposure to heat or cold, perfumes, and toiletries that contain synthetic chemicals. Most of these restrictions must also be observed in the post-diet period (*post-dieta*), which lasts one month. The *post-dieta*, is considered an important part of the diet that guarantees the safety and long-lasting efficacy of the treatment, though in this period participants may eat salty foods and engage in social activity.

Main Plants Used at Takiwasi During the Dieta

The type of the primary and secondary plants including the number of administrations to diet-retreat users at Takiwasi over the selected period of time is shown in Figure 3. The two main plants of each group are described as follow.

Ushpa Washa Sanango

Tabernaemontana undulata Vahl – Apocynaceae (there are 13 synonyms for the scientific name of this plant). This is the most consumed primary plant, accounting for 258 administrations within the selected period. The plant is commonly prepared through prolonged decoction of the root bark and subsequently filtered before administration. Takiwasi practitioners explained that Ushpa Washa Sanango works on the "memory of the heart", in particular helping to metabolize relevant emotions. Through memories, dreams, feelings, thoughts and sensations the plant allows the unexpressed emotions to flow in, encouraging contact with deep feelings. Working with this plant can trigger catharsis, including the re-experiencing of certain feelings that often result in the expression of crying, sorrow, anger, fear, joy, hope, etc. It can help with reconnection and the balance between the inner emotional and mental world.

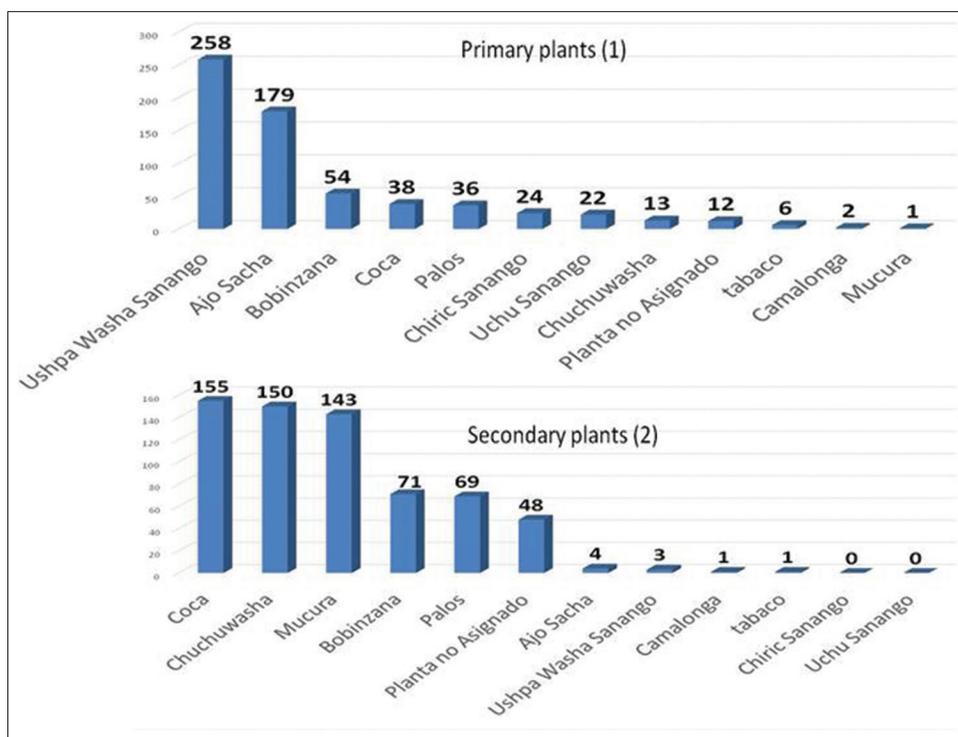


Figure 3: Type and number of primary (1) and secondary (2) plants administered to diet-retreat users at Centro Takiwasi during 2012-2017

Ethnomedical reports in the region where Takiwasi is located describe this remedy as an antidote for snakebite poisoning [22], for rheumatism, malaria, and as a general health tonic [3]. Undefined commercial extracts from this plant can be found in online markets, often in form of eye drops used as a potential remedy for various ocular ailments and to improve visual acuity as well as metaphysical vision. Both physical and metaphysical claims refer to certain indigenous uses of the plant, however we did not find any peer-reviewed references to support these claims in the databases we used.

Several indole alkaloids were identified in this species [23,24]. This class of compounds are typical of this botanical genus [25,26], where ibogaine represents probably the better known example with potent activity on human neurobiology [27]. Part of the psycho-emotional effects observed for Ushpa Washa Sanango could be linked with this class of natural derivatives.

Ajo Sacha

Mansoa alliacea (Lam.) A.H. Gentry - Bignoniaceae (there are 13 synonyms for the scientific name of this plant). This is the second most consumed primary plant, counting for 179 administrations. This plant is traditionally prepared in Takiwasi by squeezing the root bark in water at room temperature to produce the resulting filtrate. Practitioners explained that this plant works by bringing light and clarity, especially for making life-decisions and direction. After a diet with this plant, the visions experienced during the Ayahuasca session can become more lucid and vivid. The remedy can help to move forward from a stagnant condition that can be

the main cause of depression. It is a masculine, solar and fire plant, and this fire element is reported to help the dieter find clarity about their vocation in life. The fire characteristic is also used to purify contamination in both the physical and spiritual dimensions.

Ethnomedical reports in the region where Takiwasi is located mention the use of this plant for cases of rheumatism, gastritis, anemia caused by intestinal parasites, as a depurative and health tonic [22]. It is also mentioned as an ingredient in a complex formula with the Ayahuasca brew. A recent conference presentation summarizes the main ethnopharmacological, biological, and chemical data on *M. alliacea* [28], a plant characterized by the presence of sulfur derivatives similar to those of Garlic with which it shares a similar aroma. Extracts from this plant show inhibitory activity against 5-HT₆ and 5-HT_{1B} receptors [29], both promising pharmacological targets for the implementation of cognitive enhancers [30] and anti-depressive agents [31], respectively. Such preclinical data seems in line with some of the properties reported by Takiwasi therapists for this remedy, especially the reported “bringing light” characteristic of this plant.

Coca

Erythroxylum coca Lam. – Erythroxylaceae (there are 3 different varieties registered as synonyms). This is the most consumed secondary plant counting for 155 administrations. According to the knowhow acquired at Takiwasi, the leaves are squeezed in room-temperature water to produce the resulting filtrate. This plant works toward re-balancing and reaching equilibrium. The well known anesthetic property

of Coca leaves refers not only to the physical dimension but apply also at the psycho-emotional level, bringing peace and calmness. It helps to enhance good quality feminine aspects such as softness, sweetness, and receptivity, simultaneously conferring strength and nourishment like a mother. Moreover, it provides an enlightening, or darkness-removing, quality. It is recommended to pay particular attention to dreams occurring during the diet with Coca leaves.

The psychoactivity of the alkaloids contained in this plant species, the most famous of which is cocaine is well known and exhaustively documented. In comparison, the use of whole Coca products such as leaves or flour are much less described in the scientific literature and this topic is still a matter of debate [32]. Traditional use of this plant is still widespread among local populations in Peru and other South American countries, where it is used for different purposes including treatment of gastrointestinal symptoms, environmental stress, hunger, and altitude illness [33]. In its whole-leaf form, Coca may also be a fast-acting antidepressant that does not produce toxicity or dependence [34]. At Takiwasi, it is used within the protocol for the rehabilitation of drug addiction [18].

Chuchuwasha

Maytenus macrocarpa (Ruiz & Pav.) Briq. - Celastraceae (there are 4 synonyms for the scientific name of this plant). This is the second most consumed secondary plant, counting for 150 administrations. According to the knowhow acquired at Takiwasi, where long lasting decoction of the bark is the common way to prepare the remedy represented by the resulting filtrate, this plant works on structure and strength. The physical structure of this plant is said to reflect its physical and metaphysical properties: it is a large tree with deep roots in the earth that grows straight upward toward the sky, representing a transition from the material to the spiritual dimension that allows the dieter to stay grounded. This tree also assists the dieter to reconcile with their own family tree, including past and future generations and relationships beyond the family. It is also known to provide support for the reproductive system.

Ethnomedical reports in the region where Takiwasi is located mention the use of this remedy for rheumatism, broken bones, as an aphrodisiac, health tonic, antidiarrheal, and postpartum tonic [22]. Different species of the same genus *Maytenus* are mentioned in another Amazonia area of Peru (Pucallpa) to be part of a group of medicinal plants that have a strengthening effect all belonging to the category of *palos* which refers to large jungle trees [2]. The main phytochemical and pharmacognostic data related to *M. macrocarpa* have been reviewed [35]; in animal models, effects on the reproductive [36] and central nervous system [37] has been reported. However, there is still a great need to fully evaluate the therapeutic properties of this species, particularly for understanding local claims that it is a 'strengthening' plant. In this sense, Chuhuwasha exemplifies the difficulty of bridging local knowledge with information yielded by modern laboratory science.

CONCLUSION

This case report offers insight into the format of the *dieta* at a mental health clinic in Peru. In addition to explaining the treatment protocol at this alternative-integrative health center, this article has revealed sociodemographic information about diet participants between the years 1997-2017, yielding data on age, gender, nationalities, and socioeconomic backgrounds, with a focus on the electronically available data between 2012-2017. The main plants administered were also described, combining the information acquired from the herbal specialists of Centro Takiwasi with the available scientific data.

The rising popularity of diet-retreats as a complementary or alternative therapeutic resource is linked to the internationalization of Ayahuasca consumption as a form of health care [38,39]. There is scientific literature on the *dieta* as a CAM among non-indigenous users, except for some anthropological insights by Fotiou (2010) [40], Hagens and Lanksy (2012) [41], and Gearin and Labate (2018) [42]. These accounts focus on the *dieta* as an integral part of Ayahuasca shamanism and related tourism. Over the decades that Takiwasi has offered diet-retreats, it has been evident that many users come primarily to seek experiences with Ayahuasca, but upon exposure to the concept of the *dieta* decide to explore this route of healing.

Indeed, outside of the many TAM centers in Peru, the authors know of several centers and shamanic practitioners in France, Spain, Argentina, Portugal, Ireland, and Canada. In these countries, practitioners reproduce the *dieta* by using plants from the local flora [43], or sometimes by importing plants from Amazonia. It seems we are witnessing the beginning of the global spread of the *dieta* as a CAM originating from traditional Amazonian knowledge. From a preliminary analysis of the data at Takiwasi (which fall outside the scope of this article and it is therefore not shown), it is evident that many foreigners come to the Amazon seeking a form of mental health care or emotional well-being that they cannot access in their respective countries. As a rising trend in alternative physical and mental health care, we consider the Amazonian plant diet to be an important new focus of research in the use of traditional medicine among international clientele.

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