

MEDICINAL PLANTS: TRADITIONAL HEALERS' INDICATIONS FOR THE TREATMENT OF WOUNDS

Plantas medicinais: indicação de raizeiros para o tratamento de feridas

Plantas medicinales: indicación de herboristas para el tratamiento de heridas

Original Article

ABSTRACT

Objective: To analyze the indications and knowledge of traditional healers on the use of medicinal plants for the treatment of wounds. **Methods:** Quantitative descriptive study conducted with 32 traditional healers from the municipality of Campina Grande - Paraíba, from November 2012 to March 2013. We used a structured questionnaire with 21 closed- and open-ended questions on sociodemographic variables, information on the plant species indicated for the treatment of wounds, acquisition of knowledge on the issue and sale of plants. Data underwent descriptive analysis using absolute and relative frequencies. **Results:** Of the 40 medicinal plants dealers invited to participate in the study, 32 (75%) agreed to answer the interview; of these, 75% (n=24) were women, 50% (n=16) were 60 years old or older, 25% (n=8) lived in rural areas, and only 18.75% (n=6) grew the herbs they traded. In all, 87.5% (n=28) of the respondents worked for over five years in this sector, with the family transmission across generations as the most common form of knowledge acquisition (87.5%; n=28). In all, 18 plants were cited by the traditional healers, with the *cajueiro roxo* as the most indicated (87.5%; n=28), followed by *barbatimão* (81.25%; n=26) and *quixaba* (50%; n=16). **Conclusion:** The present study leaves question about the level of popular knowledge of traditional healers on the use of medicinal plants for the treatment of wounds unanswered given that it comes from a family source without scientific evidence and imprecise therapeutic indication.

Descriptors: Medicinal Plants; Wounds and Injuries; Wound Healing; Ethnopharmacology.

RESUMO

Objetivo: Analisar as indicações e o conhecimento de raizeiros quanto ao uso de plantas medicinais para o tratamento de feridas. **Métodos:** Estudo quantitativo, de caráter descritivo, realizado com 32 raizeiros do município de Campina Grande - PB, no período de novembro de 2012 a março de 2013. Utilizou-se um questionário estruturado, contendo 21 questões fechadas e abertas, referentes a variáveis sociodemográficas, informações sobre as espécies vegetais indicadas para o tratamento de feridas, aquisição de conhecimentos sobre o assunto e comercialização das plantas. Realizou-se análise descritiva dos dados com cálculo de frequências absolutas e relativas. **Resultados:** Dos 40 comerciantes de plantas convidados a participar da pesquisa, 32 (75%) consentiram a entrevista, dos quais 75% (n=24) do sexo feminino, 50% (n=16) possuíam 60 anos ou mais, 25% (n=8) residiam na zona rural, e apenas 18,75% (n=6) cultivavam as ervas que comercializavam. Neste ramo, 87,5% (n=28) trabalhavam há mais de cinco anos, sendo a transmissão familiar através das gerações a forma mais comum de aquisição de conhecimentos (87,5%; n=28). Um total de 18 plantas foi citado pelos raizeiros, onde o cajueiro roxo foi o mais indicado (87,5%; n=28), seguido pelo barbatimão (81,25%; n=26) e pela quixaba (50%; n=16). **Conclusão:** Este estudo deixa em aberta a questão sobre o nível de conhecimento popular de raizeiros investigados acerca do uso de plantas medicinais no tratamento de feridas, visto que o mesmo advém de fonte familiar sem cientificidade, com imprecisa indicação terapêutica.

Descritores: Plantas Medicinais; Ferimentos e Lesões; Cicatrização; Etnofarmacologia.

Diogo Rodrigues Souza⁽¹⁾
Elaine Cristina Araújo Medeiros
de Souza Rodrigues⁽¹⁾

1) Paraíba State University (*Universidade Estadual da Paraíba - UEPB*) - Campina Grande (PB) - Brazil

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RESUMEN

Objetivo: Analizar las indicaciones y el conocimiento de herboristas sobre el uso de plantas medicinales para el tratamiento de heridas. **Métodos:** Estudio cuantitativo, de carácter descriptivo realizado con 32 herboristas del municipio de Campina Grande - PB en el periodo entre noviembre de 2012 y marzo de 2013. Se utilizó un cuestionario estructurado con 21 cuestiones tipo test y de desarrollar referentes a las variables socio demográficas, informaciones de las especies de vegetales indicadas para el tratamiento de heridas, adquisición de conocimientos sobre el asunto y el comercio de las plantas. Se realizó un análisis descriptivo de los datos con cálculo de frecuencias absolutas y relativas. **Resultados:** De los 40 comerciantes de plantas invitados a participar de la investigación, 32 (75%) permitieron la entrevista de los cuales el 75% (n=24) era del sexo femenino, el 50% (n=16) tenía 60 años ó más, el 25% (n=8) vivía en la zona rural y solamente el 18,75% (n=6) cultivaba las hierbas que comercializaban. En esta especialidad, el 87,5% (n=28) trabajaba hace más de cinco años y la transmisión familiar entre generaciones fue la forma más común de adquirir conocimientos (87,5%; n=28). Dieciocho plantas fueron citadas por los herboristas de las cuales el "cajueiro" morado fue el más indicado (87,5%; n=28) seguido del "barbatimão" (81,25%; n=26) y la "quixaba" (50%; n=16). **Conclusión:** Este estudio abre una cuestión sobre el nivel de conocimiento popular de los herboristas investigados sobre el uso de las plantas medicinales para el tratamiento de heridas una vez que el mismo viene de la fuente familiar sin cientificidad y con indicación terapéutica vaga.

Descriptor: Plantas Medicinales; Heridas y Traumatismos; Cicatrización de Heridas; Etnofarmacología.

INTRODUCTION

Since the dawn of civilization man has accumulated information and experience on the use of natural resources for the treatment of diseases and symptoms⁽¹⁾. In this context, the use of plant species is a practice that crossed all barriers of the evolutionary process and a widely used therapeutic approach until today in various parts of the world with a great meaning in some poorer regions of Brazil^(2,3).

The World Health Organization (WHO) estimates that 85% of the world population uses medicinal plants for health care, and 80% of people in developing countries rely on traditional and/or complementary practices to maintain or restore health, such as the popular practices of wound care⁽⁴⁾.

This situation may be influenced by economic issues (high cost of allopathic medicines, difficulties in access

to health care services and dispensing of drugs) or by the simple fact that replacing synthetic drugs (conventional medicine) for medicinal plants (alternative medicine) is current trend^(1,5).

Medicinal plants have active ingredients that are produced during their metabolism and that have therapeutic effects⁽⁶⁾. They are herbs used as home remedies to treat diseases that may even lead to a cure⁽⁷⁾.

In Brazil, it is clear that the mixing of Indigenous, African and European cultures was a major influencer regarding the use of herbs for the treatment of diseases and wounds⁽⁸⁾.

Since prehistory herbal products have been used topically as a poultice in the process of wound healing in order to stop bleeding and promote healing, and others have ingested solutions to act systemically⁽⁹⁾.

In general, plants are indicated and administered after a skin wound because they promote blood clotting, combat infections and accelerate the healing process, which consists of a sequence of events in three overlapping evolutionary phases: initial or inflammatory phase, proliferative or fibroplasia phase and remodeling or maturation phase. In addition to contributing to a rapid wound closure and a functionally and aesthetically satisfactory scar, herbs are considered more economical and affordable than synthetic drugs^(10,11).

A figure that stands out in the processes of indication, marketing and manipulation of medicinal plants is the traditional healer (or herbalist: a trader or connoisseur of medicinal plants)⁽¹²⁾, who is recognized as an agent with a traditional culture and responsible for trading these products in street markets, markets, among others (at home or as street vendors)⁽¹³⁾.

In this context, it is observed that plants with medicinal properties and the traditional healer are extremely important for the alternative treatment of diseases and wounds. Thus, it should be recognized that they represent a space of practice and knowledge interaction and in order to realize their full potential in promoting health it is necessary to valorize cultural resources, natural resources and interpersonal relationships (between users, healthcare professionals and healers) in order to develop people's critical view and promote the socialization of scientific research on the use of plants in primary health care and in the family environment^(14,15).

Given the above, the aim of this study is to analyze the indications and knowledge of traditional healers on the use of medicinal plants for the treatment of wounds.

METHODS

This is a quantitative descriptive study conducted with traditional healers of street fairs in the municipality of Campina Grande, Paraíba, from November 2012 to March 2013.

Inclusion criteria adopted in the present study were 18-year-old traders and connoisseurs of medicinal plants used in the treatment of wounds who should be working at the time of data collection and agree to participate voluntarily in the study. Individuals who did not meet the pre-established criteria were excluded. After explaining the objectives and methodology of the research, the healers were invited to participate in the study. Those who agreed to participate signed the Free Informed Consent Form, ensuring their privacy and freedom to participate or withdraw at any stage of the study.

The present study uses a nonprobability sampling technique given its accessibility – researchers sought to interview all traders of medicinal plants found⁽¹⁶⁾.

Data were collected using a questionnaire containing 21 closed- and open-ended questions that were later categorized; the questionnaire was especially designed by the researchers in order to analyze sociodemographic variables (age - classified into five categories: 18-29 years, 30-39, 40-49 years, 50-59 years, 60 years or older; gender – man or woman) and variables related to medicinal plants indicated for the treatment of wounds (indications, preparation and parts used). In addition, the healers were asked about the length of time they have been working as plant traders, the source of the knowledge of medicinal plants, the origin of the herbs, unwanted effects and marketing criteria.

The questionnaires were applied by two trained researchers in a coordinated way where the researcher read and explained the questionnaire and informed how each question should be answered. The entire data collection procedure lasted about 15 to 20 minutes. The interviews took place in private areas when there were fewer clients in order to ensure that the respondents' work would not be compromised and to facilitate the collection of information without frequent interruptions.

Data were initially entered into Microsoft Office Excel 2010 and then imported into the Statistical Package for the Social Sciences - SPSS version 18.0. Descriptive statistics (absolute and relative frequencies) was used for continuous

variables, and the data on plants and knowledge of healers regarding the treatment of wounds were standardized and arranged in demonstrative charts. Other data were categorized.

The present study was approved by the Research Ethics Committee of the Higher Education and Development Center (*Centro de Ensino Superior e Desenvolvimento – CESED*) in accordance with the ethical principles of Resolution 466/12 of the National Health Council⁽¹⁷⁾.

RESULTS

In all, 40 traders of medicinal plants were invited to participate in the present study, 32 (75%) of whom agreed to be interviewed. Of these, 75% (n=24) were women, 50% (n=16) were 60 years or older, 25% (n=8) lived in rural areas, and only 18.75% (n=6) grew some of the herbs they traded and bought the others from other traders from different regions for resale.

According to the interviewees, the time they have been trading medicinal plants ranged from eight months to 25 years of experience in the field, and 87.5% (n=28) of the respondents have been working in this field for a period of more than five years.

Regarding the acquisition of knowledge about the treatment of wounds with medicinal plants, traders reported that their knowledge comes from various sources, mostly (87.5%; n=28) from tradition or family followed by mass media: television, radio, magazines (25%; n=8), doctors, faith healers, biologists, teachers (18.75%, n=6), courses or workshops not accredited by regulatory agencies (12.5%; n=4), and other sources not addressed in the questionnaire (43.75%; n=14) which include their life experience in rural areas, research in papers and books, internet support and acquisition of knowledge through friends and other vendors.

Of the 18 plants recommended by healers to treat wounds, the most indicated one was the *cajueiro roxo* (*Anacardium occidentale*), mentioned by 87.50% (n=28) of the traders followed by *barbatimão* (*Stryphnodendron barbatiman*) (81.25%, n=26) and *quixaba* (*Sideroxylon obtusifolium*) (50%; n=16).

Chart I shows the data found in the present research and links them to the literature⁽¹⁸⁾, which clearly demonstrates that the indication of medicinal plants was not scientifically grounded.

Chart I - Medicinal plants indicated by traditional healers for the treatment of wounds, parts used and preparation for popular use according to the literature. Campina Grande, Paraíba, 2012-2013.

Medicinal plants indicated		Parts used		Preparation		Confirmation
Plants indicated	Scientific name	Healers	Literature	Healers	Literature	Indication*
<i>Ameixeira</i>	<i>Ximenia americana</i>	Bark and Inner Bark	Seed and bark	Tea and tincture	Decoction, maceration and tincture	YES
<i>Aroeira</i>	<i>Myracrodruon urundeuva</i>	Bark and Inner Bark	Bark, inner bark and resin	Tea, tincture and powder	Tincture, maceration and decoction	YES
<i>Babosa</i>	<i>Aloe vera</i>	Bark and Leaf	Leaf	Tea, tincture and maceration	Powder, infusion, dry extract and dried leaf paste	YES
<i>Barbatimão</i>	<i>Stryphnodendron barbatiman</i>	Bark and Inner Bark	Bark and leaves	Tea, tincture, <i>garrafada</i> (combination of crushed plant parts in a liquid medium) and powder	Infusion of leaves, decoction of bark and maceration	YES
<i>Cajueiro Roxo</i>	<i>Anacardium occidentale</i>	Root and bark	Inner bark	Tea, tincture, syrup and <i>garrafada</i>	Maceration, decoction, fluid extract and tincture	YES
<i>Cascara Sagrada</i>	<i>Rhamnus purshianus</i>	Inner bark	Bark and Inner Bark	Tincture and powder	Tea and infusion	NO
<i>Confrei</i>	<i>Symphytum officinale</i>	Leaf	Roots and leaves	Tincture	Tincture, infusion, poultice and decoction	YES
<i>Copaíba</i>	<i>Copaifera cearenses</i>	Oil	Oil and resin	Oil	Essential oil and resin	YES
<i>Cumarú</i>	<i>Dipteryx odorata</i>	Bark	Bark and seeds	Tea	Decoction, tincture and fluid extract	NO
<i>Favela</i>	<i>Cnidoscylus phyllacanthus</i>	Root and bark	Bark	Tea and powder	Decoction and maceration	YES
<i>Ipê Roxo</i>	<i>Tabebuia avellanedae</i>	Inner bark	Bark	Tea	Decoction, maceration and fluid extract	YES
<i>João Mole</i>	<i>Pisonia tomentosa</i>	Bark	Bark	Powder	Infusion	NO
<i>Juá</i>	<i>Zizyphus joazeiro</i>	Bark	Bark, Fruit and Leaves	Tea	Decoction, infusion, fluid extract and tincture	NO
<i>Jucá</i>	<i>Caesalpinia férrea</i>	Bark	Bark, roots, leaf and fruit	Tincture	Infusion and fluid extract	YES
<i>Jurema Preta</i>	<i>Mimosa acutistipula</i>	Inner bark	Bark	Tincture	Infusion, decoction and tincture	NO
<i>Quina-Quina</i>	<i>Coutarea hexandra</i>	Bark	Leaves and bark	Tea	Infusion of leaves and decoction of barks	YES
<i>Quixabeira</i>	<i>Sideroxylon obtusifolium</i>	Root and Bark	Bark	Tea, tincture and <i>garrafada</i>	Water maceration, decoction, tincture and extract	YES
<i>Romã</i>	<i>Punica Granatum</i>	Bark and Seed	Stem and <i>romã</i> bark, leaves, root, aril and seed pulp	Tea and tincture	Maceration, fluid extract, infusion and decoction	YES

Source: Dantas, IC⁽¹⁸⁾. * Indicated to treat wounds

DISCUSSION

It was found in the present study that women are more involved in working with medicinal plants than men, and that most of the time the knowledge about plants comes from the family. This finding may be related to the historical fact that women since the dawn of civilization are responsible for taking care of the family – but without recognition or social power – and that knowledge was usually acquired through empirical learning of ways to maintain and take care of health which were transmitted in the family environment across generations⁽¹⁾. This practice usually happens in rural or indigenous societies in which learning is carried out by socialization, without any mediating instructions⁽¹⁹⁾.

Interestingly, a research also conducted in Campina Grande, Paraíba, between 2000 and 2001 found that there is no significant difference between the number of male and female healers working in this field. This contradiction demonstrates that the number of professionals of both genders working in this field varies, which deserves greater attention and further research to understand the reason for such disparity⁽²⁰⁾.

It is important to note that most of the healers interviewed in the present study were not limited to the knowledge passed on by their ancestors and reported more than one source of learning, which demonstrates the relentless pursuit of knowledge about medicinal plants. This finding was also reported in research conducted in Vitória da Conquista, Bahia, where 93% of the healers had acquired their knowledge through the family tradition and only 7% had acquired theoretical knowledge through other ways (books and internet)⁽²¹⁾.

With regard to age, the results of the present study differ from previous findings since only 23.1% of the participants were 60 years old or older⁽²¹⁾.

In Brazil, due to its high cost, 66% of the population has no access to allopathic drugs, and 62.9% of Brazilians often use popular knowledge and complementary practices for health care and also for the treatment of wounds⁽²²⁾.

However, in addition to having beneficial properties, plants can also be toxic and harmful to the human body if used improperly or in large quantities⁽²³⁾. Given that and the desire to learn, there is a need to integrate these professionals in training courses in order to minimize risks to the population⁽¹²⁾.

Regarding medicinal plants, the most important findings in the present study were related to *Cáscara Sagrada*, *Cumarú*, *João Mole*, *Juazeiro* and *Jurema Preta*. Some of the healers interviewed indicated these plants for the treatment of wounds; however, according to the

databases and the literature searched, they are used for other purposes.

The *Cáscara Sagrada*, *Rhamnus purshianus*, in contrast to the indications reported by the healers in the present research, is used worldwide as a laxative and its use to treat constipation is also very famous. It is mainly indicated for chronic constipation, biliary dyskinesia, chronic cholecystitis, gallstones and meteorism, with no reported indications for the treatment of wounds⁽²⁴⁾.

Contrary to what the healers interviewed in the present study said, the *Cumarú* plant, *A. cearenses*, is not recommended for use in the treatment of wounds. This plant has expectorant, emmenagogue, anti-inflammatory, bronchodilating, antirheumatic, aromatic, antispasmodic and analgesic effects. In addition, it is indicated for the treatment of catarrh, sinusitis, runny nose, cough, bronchitis, lung diseases, rheumatic pains, sore throat, asthma, vitiligo, edema, digestive disorders, stomach pain, intestine cramps and uterine cramps. Thus, this plant is indicated for the treatment of airways dysfunction, not for tissue repair⁽²⁵⁾.

The *João Mole* plant, *Pisonia tomentosa*, was indicated by the interviewees in the present research for wound healing, being used in the form of powder made from the bark of the plant to be put over the wound. However, this plant has in its wood a powder that irritates human skin. Its use is indicated for sore throat and rheumatism and it should be used as bark infusion for gargling; it is not indicated for the treatment of wounds⁽²⁶⁾.

The *Juazeiro* tree, *Zizyphus joazeiro*, can be used for stomach problems or as a hair tonic and it also has hypotensive, cardiotoxic, digestive, disinfectant, dentifrice, detergent, antipyretic, expectorant, antimicrobial, anti-ulcer, astringent and diuretic effects⁽²⁷⁾. In 2011, it was shown that *Juá* seeds have allelopathic activity⁽²⁸⁾. Another study conducted in 2012 demonstrated the effectiveness of ecological brushing with *Juá* in the control of dental plaque in children⁽²⁹⁾. Despite the efforts and extensive research, studies on the use of the *Juazeiro* tree for the treatment of wounds could not be found in the literature.

The *Jurema Preta* tree, *Mimosa hostilis*, has sedative, narcotic, hypnotic, anti-hysterical, aphrodisiac, antispasmodic, febrifugal, hemostatic, anti-anemic, anti-catarrhal, anti-diarrheal and astringent effects⁽³⁰⁾. The tree is indicated in cases of ulcers, cancer, boils, erysipelas, eczema, and in cases of gonorrhoea; it is not indicated for the treatment of skin wounds⁽³¹⁾. A study conducted in 2011 pointed out the hallucinogenic and astringent functions of the tree; however, the authors highlighted the small number of studies on this species. There are no reports of the use of this plant for the treatment of wounds in the literature⁽³²⁾.

With the present study it was possible to verify that the variety of medicinal plants traded by healers to treat wounds is extensive in the city of Campina Grande, Paraíba. However, there were some limitations in relation to time and resources which prevented researchers from investigating the surrounding cities; therefore, the knowledge of traders of medicinal plants could not be assessed comprehensively.

Given the importance of alternative and less costly practices for restoring and promoting health of poor populations, the use of medicinal plants can be integrated into primary health care; however, there is a need for greater knowledge about the subject among people, self-employed professionals and healthcare professionals.

CONCLUSION

The present study leaves open the question of the level of popular knowledge of the healers interviewed regarding the use of medicinal plants for the treatment of wounds since it comes from a family source without any scientific grounds and with inaccurate therapeutic indication.

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- Mailing address:**
 Diogo Rodrigues Souza
 Universidade Estadual da Paraíba - UEPB
 Rua Baraúnas, 351 - 3º Andar
 Bairro: Universitário
 CEP: 58.429-500 - Campina Grande - PB - Brasil
 E-mail: diroso84@gmail.com