Medicinal plants: knowledge transmission in families of ecological farmers in Souther Rio Grande do Sul

ABSTRACT
The aim of this study was to investigate the process of knowledge transmission related to medicinal plants among family generations in the context of ecological farmers in Southern Rio Grande do Sul. This qualitative study was conducted with eight farming families, comprising 19 respondents living in the municipalities of Pelotas, Morro Redondo, Canguçu and Arroio do Padre. The interviews took place from January to May 2009. Data analysis was performed using the hermeneutic-dialectic method. The family was referred to as the main source of knowledge about medicinal plants. Most subjects reported first completing treatment with medicinal plants, to then seek formal health service. The construction of knowledge related to medicinal plants by the families is predominantly oral, and takes place by the daily contact between its members and is shared with other members of the community to which they belong.

KEY WORDS

RESUMO
O objetivo deste estudo foi investigar o processo de transmissão do conhecimento relacionado às plantas medicinais entre as gerações familiares, no contexto de agricultores de base ecológica da região sul do Rio Grande do Sul. Trata-se de um estudo qualitativo realizado com oito famílias de agricultores, totalizando 19 entrevistados, residentes nos municípios de Pelotas, Morro Redondo, Canguçu e Arroio do Padre, entre janeiro e maio de 2009. A análise dos dados foi realizada através do método hermenêutico-dialético. A família foi referida como a principal fonte na transmissão do conhecimento em relação às plantas medicinais. A maioria dos sujeitos informou primeiro realizar o tratamento com as plantas medicinais para em seguida buscar o serviço formal de saúde. A construção do conhecimento relacionado às plantas medicinais pelas famílias é predominantemente oral, realizada através do convívio diário entre seus membros e compartilhada com os demais membros da comunidade na qual estão inseridos.

DESCRITORES

RESUMEN
El objetivo de este estudio fue investigar el proceso de transmisión del conocimiento relacionado a las plantas medicinales, entre las generaciones familiares en el contexto de agricultores de base ecológica de la región sur de Rio Grande do Sul, Brasil. Se trató de un estudio cualitativo, el cual fue realizado con ocho familias de agricultores, totalizándose 19 entrevistados, residentes en los municipios de Pelotas, Morro Redondo, Canguçu y Arroio do Padre, en el periodo entre enero y mayo de 2009. El análisis de los datos fue realizado a través del método hermenéutico-dialéctico. La familia fue referida como principal fuente en la transmisión del conocimiento en relación a las plantas medicinales. La mayoría de los sujetos informó realizar primero tratamiento con las plantas medicinales, para luego acudir al servicio formal de salud. La construcción del conocimiento relacionado con las plantas medicinales por parte de las familias es predominantemente oral, realizada a través de la convivencia diaria entre sus miembros y compartidas con los demás miembros de la comunidad en la cual están insertos.

DESCRITORES

* Extracted from the dissertation “Conhecimento sobre plantas medicinais entre agricultores de base ecológica da região sul do Rio Grande do Sul”, Nursing Graduate Program at Federal University of Pelotas, 2009. *Nurse. Master in Nursing. Assistant Professor at Faculty of Nursing. Federal University of Pelotas. Pelotas, RS, Brazil. tcelin@ig.com.br *Nurse. PhD in Nursing. Associate Professor at Faculty of Nursing. Federal University of Pelotas. Pelotas, RS, Brazil. heck@upel.edu.br *Biologist. PhD. in Genetics and Molecular Biology. Researcher with Embrapa Clima Temperado (Brazilian Agricultural Research Corporation Temperate Climate). Pelotas, RS, Brazil. barbieri@cpact.embrapa.br *Nurse. PhD in Nursing. Adjunct Professor at Faculty of Nursing. Federal University of Pelotas. Pelotas, RS, Brazil. eschwartz@terra.com.br *Nurse. PhD in Nursing. Adjunct Professor at Faculty of Nursing. Federal University of Pelotas. Pelotas, RS, Brazil. romaniz@terra.com.br *Agronomist. PhD in Soil Sciences. Researcher with Embrapa Clima Temperado. Pelotas, RS, Brazil. pillon@cpact.embrapa.br
INTRODUCTION

The hegemonic health model, present in the contemporaneous western society, is centered in the care focused on the disease, on the specialty of human body parts and on the allopathic treatment. Scientifically legitimated, this model ignores other knowledge dimensions in which the care follows the health logic, not limited to the human body, but to the family, to nature, achieved by the earth, by work, by the selection and production of plants that have meaning for that cultural context.

The family group context carries its own knowledge, passed through family generations, with particularities that are limited to that group. In this scenario, medicinal plants are used in order to prevent and treat diseases or alleviate their symptoms. In order to understand this context, it is important to learn how people live, their values, their beliefs and the factors related to their culture, which influence the health care practices.

Each group or community has peculiarities that differ its culture from others and the way health care is performed. Farmers practice ecology-based family farming, which requires the participation of its members, creating opportunity in this daily familiarity for passing knowledge, beliefs and values through generations. This type of agriculture is not limited to the aspects related to the ecological sustainability of the production system, it is rather an approach that also incorporates questions related to its cultural environment.

In the ecology-based farmer’s view, integrity is an indissociable component that passes by the different care models and interacts in the daily life. This care is daily built, constantly receiving influences from the cultural context and from the meanings socially established. Understanding how care is practiced by the families, through the use of medicinal plants, demands to learn the symbolic representations used in the transmission of this knowledge, which does not end, on the other hand, it is amplified through the exchange of knowledge between the family members and the environment in which they live.

Therefore, the nurse’s participation is important, aimed at integrating the popular and the scientific knowledge, since the informal system may contribute to the health sciences, enabling to the subject and his family autonomy regarding the health care.

Nursing approaches this reality in an attempt to understand the health care through the use of plants and, then amplify the integrity view, promoting the study to approach the care to each cultural group in the practice.

OBJECTIVE

The objective of this study was to investigate the process of knowledge transmission related to medicinal plants, between family generations in the context of ecology-based farmers from the south region of Rio Grande do Sul.

METHOD

This is a qualitative study, bonded to the project *Plantas bioativas de uso humano por familias de agricultores de base ecológica na Região Sul do RS*, developed by the Nursing School of the Federal University of Pelotas in partnership with Embrapa Clima Temperado.

The study subjects were ecology-based farmers who commercialize their production in the urban perimeter of the municipality of Pelotas. The ecological fair was chosen due to the easy access to the families, to the receptivity of the farmers’ group and to the historical bond to Embrapa Clima Temperado, strategic partner of the project and the study. The fair generates income for 28 families, which live in the municipalities of Arroio do Padre, Canguçu, Morro Redondo, Pelotas and Turuçu. The interviewees were indicated by the coordinator of the Fair Association as they have great knowledge about medicinal plants, triggering the chain of informers.

Prior to the interviews, each family was contacted for a previous appointment, which took place at the ecological fair and was later confirmed on the telephone, close to the visit day. At that moment, it was also evaluated whether the indicated families met the selection criteria of the study and the data collection according to the location of their houses, since they lived in the rural area and some of them in regions distant from the municipality of Pelotas. The visit day was scheduled according to the family availability not to interfere in the routine of their activities or harm the rhythm of work, production and organization of the products to be commercialized at the fair.

The study location was the house of these families, located in the rural area of the municipalities of Pelotas, Morro Redondo, Canguçu and Arroio do Padre, in the south region of Rio Grande do Sul. The subjects were ecology-based farmers and their family generations, completing the total of eight families, corresponding to 19 subjects, with at least two generations in each family. These were identified by the initial letters of their names and the city where they lived, followed by the age and gender of the interviewee. Example: S.C.M, 35, fem. The names mentioned in the genogram are fictitious, attributed by the authors.
The data collection regarding the knowledge related to the medicinal plants took place between January and May of 2009. The used instruments were the semi-structured interview\(^5\), the construction of a genogram and an ecomap\(^7\), the systematic observation of the plants with photographic records, geocoding and field observation. Data analysis was developed through the hermeneutic-dialectic method\(^5\). According to the chosen methodological approach, data were analyzed through the following stages: description of the context of the study subjects; elaboration of the profile of the interviewees; transcription of the interviews and field journal reading. Afterwards, data were classified into four themes: knowledge transmission; flow of the knowledge related to medicinal plants; health comprehension and knowledge loss regarding the plants. At the final analysis, data were confronted against the theoretical referential. Only the first two themes are approached in this article.

The present study respected the ethical principles regarding studies with human beings. The study subjects signed the Term of Free and Clarified Consent. The project was approved by the Committee of Ethics and Research of the Medical School of the Federal University of Pelotas, protocol no. 072/2007.

RESULTS AND DISCUSSION

The ecology-based farmers interviewed are associated to the Regional Association of Agroecological Producers of Rio Grande do Sul (ARPASUL), founded in 1995. The ecological fair is an initiative that weekly unites producers at four locations in the municipality of Pelotas and at a sales point in Canguçu.

Before working with ecology-based farming, the main source of income for most of the families was tobacco farming, whose production system is highly intensive in the use of materials and imposed a high risk of intoxication by chemical products. Among the 19 interviewees, 16 were women aged between 12 and 82 years old and 3 were men between 35 and 55 years old. Regarding the age distribution of the subjects, two of them were between 12 and 19 years old, eight (42.7%) were between 20 and 39 years old, five were between 40 and 59 years old and four were between 60 and 82 years old.

The prevailing education level (63%) was incomplete elementary school. The youngest members of the families attended school, and most of them reported they did not want to continue working in the property but to practice another activity.

Most of the families descended from German, Pomeranian, Italian and Brazilian (miscegenation among Indians, Portuguese, Spanish and African people) people, whose lineage evidences the miscegenation that takes place in our country, due to the immigration, merging the popular cultures. The Pomeranian are an ethnic group descending from Slav and German tribes that lived in the region of Pomerania, located in the north of Poland and Germany, whose territory was divided between these two countries after the Second World War\(^8\). The ethnic question involves beliefs, values and culture, to which this group adapted in the Brazilian context and not only in the perspective of a common origin\(^9\).

Most of the interviewees declared to be German descendants, which is justified in face of the strong constitution of colonies of immigrants in Rio Grande do Sul. In 1858, some Pomeranian and German people arrived in São Lourenço do Sul, south of the state, who dedicated their work to the family agriculture\(^10\). The interviewees referred to practice the Catholic and the Lutheran religions in Brazil, with prevalence of the latter, which is justified by their ethnic lineage.

The farmers know 196 medicinal plants, among native plants from Rio Grande do Sul, exotic plants from the State and seven elixirs. The recipes of the elixirs mentioned were extracted from a book provided by the Movement of Peasant Women, to which one of the interviewees had been a member for eight years, interrupting her participation due to time unavailability. This social movement, which started in the decade of 1980 aimed at the rights of the woman and the working class, remains active and is organized in eighteen Brazilian states.

The families of target-farmers in this study live in small rural properties, far (between 48 and 90 Km) from the urban area of Pelotas. The access to these properties occurs mostly through dirt roads.

The prevalence of the female gender evidences the importance of the women in the transmission of knowledge between the generations and their responsibility for the execution of care in the family health through the use of medicinal plants.

I learned everything I know with my mother, I learned watching her do it, helping her make the infusions, the things (JVP, 37, Fem.).

The perception that women retain more knowledge had already been observed as of the beginning of the study, since the fair coordinator indicated predominantly women as people who knew about medicinal plants. From the historical point of view, the woman-mother has taken over the role of main caregiver, adopting a care style that was culturally inherited from her ancestors\(^10\), thus becoming the main person in charge of this function among the family members. Caring demands dedication, experimentation and wisdom, inserted in the world conception of the common sense\(^11\). The woman who works in the family farming takes care of herself, her husband, her children, her house and also participates in the property business\(^12\), such as the sales of products at the fair.

In this context, the transmission of knowledge among the family members is continuous and there is not always a pause to call attention into the beginning of a new ritual. Actions are continuously repeated among the different...
tasks, and the routine is changed by the days of sales in the urban area, by the meetings among the fair associates and, on Sunday, day off and to go to the church.

When trying to comprehend how the process of knowledge transmission about medicinal plants takes place between family generations, the nurse must comprehend the meaning of this action and the cultural context in which it occurs. In the family daily practice, the informal, formal and biomedical care models(13) are not stagnant structures, as they interact according to the health needs of the person in suffering. Different practices are used such as the tea, application of heat or cold, according to the health need, as well as feeding. During the execution of these care practices, they monitor the symptoms, follow up the clinical signs, contact the Basic Health Unit and, in case it is too serious, the hospital.

The informal health care is often performed concomitantly to the care provided by the formal system, as observed in the next statement, and the subject can use both the medicinal plants and the medication indicated by the Basic Health Unit (BHU).

I learned from father to mother, from generation to generation. But then you must like drinking tea, because there are people here who go to the health unit and take medication, they do not drink tea (WLA, 47, Fem.).

This knowledge is also acquired through the marriage, when the wife and/or husband influences in the practice of the daily use of medicinal plants for the health care.

I think it increased a lot because I am married to (husband’s name), and he likes it more than I do. I have always avoided drinking tea, but besides liking it he also drinks because he needs to. [...] we learned more that way, and our daughter, we have a couple, is just like him (father), whenever she can she carries a tea leaf and does something. On the other hand, our boy is just like me regarding these things (PDC, 29, Fem.).

Information about the habits and care to health, such as the use of medicinal plants, are orally transmitted among the family members. The family is a system in which values, beliefs, knowledge and practices are conjugated, forming an explanatory model of health-disease, through which the family develops its functioning dynamics, promoting the health, preventing and treating the disease of its members(16), as it may be observed in the following speech:

We learned with our parents, and curiosity, I have always liked it a lot [...]. The drugs are very expensive and we have to try first with the medicinal plant, if it does not work then we look for a doctor; besides, the drugs are chemical. My grandmother liked to explain things... and we were very curious (LOC, 51, Fem.).

The family is also a space to create new ways of caring, which are awakened by curiosity. The genogram in Figure 1 was chosen to represent the eight genograms, due to the approach of three generations, allowing the representation of the use of plants, in which it is possible to observe that, despite of the reduction in the number of descendents per generation, the knowledge about the plants remains in different age groups.

In contrast, it is also pointed out that this knowledge is not identical in all the families, as shown by the difference between the ancestors of Eulália’s family, who transmitted the knowledge about medicinal plants and those from Osvaldo’s family, who did not reinforce this knowledge. When a couple uses medicinal plants, it is likely that their children will appropriate this knowledge and practice it. On the other hand, if the knowledge is limited to one person of the family, the man for instance, this transmission is not always effective.

During data collection and the construction of the genograms, it was observed that the knowledge transmission in some families happens since the childhood, being a gradual sensitization of the use of tea in a progressive way over the different stages of life.

Through my grandmother and my mother, after my mother started working with this medicine we learned a lot (GCP, 20, Fem.).

It was also surprising to observe the knowledge of a nine-year-old child who followed her father during the photographic records at the field observation. At that occasion, the child would orally verbalize the names of several plants and their use in health, anticipating the information that was later complemented by the father.

The daily contact and the division of work according to the gender allow the exchange of experiences, values and knowledge among the family members, which are distinguished as for what belongs to men and women. Most of the times, the knowledge related to medicinal plants is transmitted from older to younger women.

My mom, and a little at school, but mostly with my mother and my father (LLC, 12, Fem.).

Men also share this knowledge about the plants, but with less intensity than women, being mentioned in the speeches. This characteristic is possibly related to the men’s work cultivating plants, as they know the vegetal characteristics of these plants and are not limited to their use in care for the treatment of symptoms. Besides, the influence of the school is also observed, to a lesser extent, in the transmission of knowledge about plants among young people.

Among the approached women, some out of curiosity and others due to their bonds to social movements, it is possible to observe the development of knowledge regarding the manipulation of the plants (preparation of infusions, syrups and ointment), influencing and disseminating this knowledge among the family and the community.

We have a book, there are tea groups at the church where they explain, and then we learn something. We are too old, we remember because we have spent our entire lives drinking tea [...]. The neighbors also share the information (SNP, 82, Fem.).
Figure 1 - Genogram of one of the interviewed ecology-based farming families - Pelotas, RS, Brazil - 2009
Medicinal plants are part of the knowledge of common sense of these families, being a cultural system with beliefs, similar connections for all the members of a group who live in community (15).

The farmers mentioned stated they acquired the knowledge about medicinal plants more frequently with their families, followed by groups of women and/or a community church that works with medicinal plants, with a person in the community who knows about these plants, at the ecological fair, with neighbors and through books about medicinal plants (16), at school, at the Support Center to the Small Farmer (CAPA), at ARPASUL, at the Company of Technical Assistance and Rural Extension (EMATER-RS), at the Basic Health Unit (BHU) and on television, forming a network of knowledge about the subject (Figure 2), as exemplified in the following speeches.

![Figure 2 - Flow chart about the transmission of knowledge regarding medicinal plants among ecology-based farmers - Pelotas, RS, Brazil - 2009](image)

Many years ago we used to have a pastor here who also worked with the different types of tea, then he went to Mato Grosso, but he sometimes comes by to visit us. They (pastor and his wife) used to produce everything without pesticides. My son was so used to it, when we went to the church and the tea in his bottle was over he would take it to the pastor's wife and she would give him some more tea. But after the pastor was gone, the other couple who came to replace them did not understand about tea (WLA, 47, Fem.).

[...] We had a course at school a few days ago and a lecture about tea, in which I learned many things (SLP, 20, Fem.).

The neighbors use it a lot, sometimes when they need, they just call as ask Hey, are you home? Can we come by to pick up some plants for a syrup? Then they make some syrup and distribute to their family. In the group [...], there are even health agents who participate, we work with crafts, cooking, medicinal plants. [...] from CAPA is also going there now (JRP, 60, Fem.).

The knowledge related to medicinal plants, their therapeutic properties and ways of using is an authentic resource of popular wisdom, traditionally used among the family and socialized in the relationships of the neighborhood.

For the farmers approached in this study, besides the sales of products, the ecological fair also allows the exchange of knowledge between producers and consumers.

The exchange of ideas, we talk a lot about it at the fair. Even the customers recommend tea, for their purposes. Because we have a lot of customers who are doctors...
Then we sometimes take tea to the fair, because they ask, and I did not know some of the plants were good for something. Then they explain, and as we talk about tea, we know how to do things differently, even for cooking [...] (LEC, 37, Fem.).

The information related to the use, especially of medicinal plants, are transmitted diffusively, among the family, in the community space through a repetitive movement in that socioeconomic context where they were created and socialized(17), resulting in a network of knowledge, composed by the formal and informal health systems.

The configuration in network is peculiar to the human being. The human being associates to his fellow men and established relationships of work, friendship, finally, relationships of interests that are developed and modify according to his trajectory, expanding the network according to the insertion in the social reality. The network is a decentralized, flexible, dynamic, self-organizable structure with no defined limits, which is established through horizontal relations of cooperation, working as a space for sharing information and knowledge(18).

The network may be also defined as a system of knots and connections represented by social subjects (individuals, groups, organizations etc.), bonded around common values and interests. Data, knowledge and information circulate through the networks, and their construction is related to cultural, political and social factors(19). The network starts its formation at the moment one person identifies another one to whom they have affinity, thus triggering several other connections, as observed in the network of the families.

When questioned about how they clarify doubts regarding the use and identification of a plant, the family was the most mentioned source, followed by a person at the community who knows about medicinal plants, books, neighbors and the school.

I use books, [...] there is a great exchange of information, informed people, someone knows something and passes it to another person and so on, things are passed from one person to another (SMM, 35, Male).

Health practices express representations, meanings and values connected to the set of sociocultural relations that associate people and groups together, involved in the same field and referred to the same space(20).

Families value the consumption of food without pesticides and the benefits of this habit for their health. The use of medicinal plants as a care practice of the informal system of this population aims to promote health and treat diseases, in order to achieve better quality of life, avoiding the use of allopathic drugs, which are used only when necessary. Most of the interviewees reported they make the treatment with medicinal plants first, and later look for care at the formal health system.

Eating healthy food. We still cannot do it all, but everything we plant is natural, there is no poison in our farm, nothing toxic, everything is natural. We are still sorry because we have to buy coffee, salt... there are many things we have to buy and we cannot (LOC, 51, Fem.).

You see, health is... I don't know, I guess it is living well and also knowing how to use what we have in the property, avoiding getting things from outside, I don't like drugstores. So, one of the things we do here in the property is using the least we can from outside (SEP, 45, Male).

The transmission of knowledge predominantly occurs in the informal health system, whereas health professionals are rarely mentioned. This is probably justified by the lack of preparation and/or disbelief of the health professionals (formal system) regarding this popular practice of health care.

There is ... (nursing technician) for instance, if we have doubts like ”Is this good?” we ask here in the city (LOC, 51, Fem.).

The mentioned nursing technician currently works at a hospital. Despite of the fact that she is inserted in the formal health system, she has previously worked at the Support Center to the Small Farmer (CAPA), where she probably established bonds that remain up to the present moment, allowing her to be mentioned as a person in the community who knows and clarifies doubts regarding medicinal plants.

In the context of family farmers, the use of medicinal plants is part of this care mastery over which they dimension what they know (medicinal plants) and what they do not know (drugs). This distinction makes them believe in a safe care practice, without aggressions, keeping the integrity of care and their way of living.

Different species of plants were found by the same popular name, indicated for the treatment of the same clinical symptom. One example was the euphorbiaceous plant, used in the treatment of kidney problems, as after the ethnobotanical survey it was possible to identify two different types (Phyllanthus sp. and Sommerfeltia spinulosa).

When using a medicinal plant, it is necessary to know how to identify it correctly, to know its chemical composition and contraindication before indicating its use, besides the use of an appropriate dosage in order to usufruct its benefits to health(21).

The use of medicinal plants in the health care is an area in which the nurse may get qualification, since this practice has been encouraged by the Ministry of Health with the introduction of complementary therapies in the Unique Health System. Furthermore, it is fundamental to increase pharmacological studies regarding the plants used by the popular knowledge aimed at health care.

In this context, nurses must try to comprehend the structures, the meaning and the senses of the different cultures, their values and care practices. Therefore, they must try to...
build, based on this knowledge resulting from the popular wisdom, new practices to act in the health services, in order to achieve the aspired integrality in the care provided to the individual and his family, thus acting in the construction and reproduction of knowledge and integral practices of health care\[1\].

**CONCLUSION**

The construction of knowledge related to the use of medicinal plants by the families of farmers is predominantly oral, developed through the daily social contact among their members, allowing the transmission of information, beliefs and values, also shared with the other members of the community in which they are inserted. The conservation of the transmission of popular knowledge about the plants depends on how it will continue to be passed through the family generations and through the networks of knowledge.

In his practice, the nurse must try to integrate the popular and the scientific knowledge in the execution of care, developing an integral care system that comprehends the cultural context in which the subject and his family are inserted, thus, promoting health and the improvement of the life quality.

In order to bring this into reality, the professional needs to know about the identification of the plants, the active principles and contraindication of a certain plant, considering the local knowledge and including the diversity of names attributed to the same plants by the community.

**REFERENCES**