TOXIC PLANTS: IMPORTANCE OF KNOWLEDGE FOR REALIZATION OF HEALTH EDUCATION

ABSTRACT
Objective: recognizing the poisonous plants mentioned by farmers. Method: a descriptive study linked to the project Bioactive plants for human use by families of farmers ecological base in the southern region of the RS. Participants were 19 farmers from southern Rio Grande do Sul were used as instruments to simple observation and semi-structured interviews with photographic record of medicinal plants. Data analysis was based on information about the knowledge of farmers, organized into a table and then compared with pharmacological, phytochemical and ethnomedical studies. The research was approved by the Research Ethics Committee, protocol 072/2007. Results: 11 plants were cited: Dieffenbachia picta, Nicotiana tabacum, Papaver rhoeas, Senecio brasiliensis, Zantedeschia aethiopica and Symphytum officinale have toxic activity. However S. officinale has this action only if ingested orally. Conclusion: popular knowledge of farmers on 54% is consistent with the scientific literature. Descriptors: Poisonous Plants; Public Health; Health Education; Nursing.

RESUMEN
INTRODUCTION

One of the main problems related to the action of the medicinal plants in Brazil is the idea that comes from nature does not hurt, excluding the possibility of a plant cause an adverse reaction or toxic effect.1

Every plant has some toxicity at a given dose, but the designation of toxic plants conceptualizes all the vegetables through contact, inhalation or ingestion, cause damage to health, both for man and for animals, and may even cause them to death.2

3 These plants have substances that can trigger adverse reactions, whether for its own components, or become dangerous due to the quality of cultivation, collection or inadequate extraction of their constituent.4 Many poisonous plants are considered ornamental, logo is present in many environments around us, therefore facilitating the risk of poisoning for humans.5

Vegetables contain chemicals, called active principles, such as alkaloids, glycosides, cardioactive, cyanogenic glycosides, tannins, saponins, calcium oxalate and toxialbumines, all causing similar symptoms in animals or humans.6 Pyrrolizidine alkaloids (sinfitin and equimimid) have toxic principles, which even after a few years of the toxic dose ingested, can cause liver cirrhosis or liver cancer.5

According to data from the National Information System of Toxic Pharmacologic (SINITOX), in 2010, Brazil in 1.132 cases of plant poisoning, with 330 in the South So were recorded toxicity of medicinal plants has become a serious problem.6-7 the public health nurses and other health professionals, especially those working in the Family Health Strategy (FHS) for its close contact with the population, have a fundamental role in the recognition of possible risks and related guidance on these plants, performing this care mainly through health education.

Health education is very important, while includes public policy, appropriate environments and reorienting health services, beyond clinical and curative treatments, focusing on liberating pedagogical proposals, committed to the development of solidarity and citizenship, in order to promote quality of life and fostering the autonomy of the individual. It is a possible tool to minimize or prevent the occurrence of cases of intoxication or health problems resulting from improper use of plants.

For health professionals able to conduct health education on this topic, you must have access to courses related, however, it is important to emphasize that in Brazil is difficult nurses empower themselves on this subject, since the cities that offer courses with minimum workload of 360 hours, according to Resolution 197/97 of the Federal Council of Nursing (COFEN), located in major centers and the cost of these high, hindering the improvement of those professionals in this area.

Thus, this study has relevance for society, because the values of the participants folk knowledge and learn from this, search the scientific literature if this information is consistent or not, can be an effective resource in the care provided by the disclosure of these results, seeking to identify its risks and clarify why these plants are avoided through health education.

OBJECTIVE

• Knowing the poisonous plants mentioned by farmers.

METHODOLOGY

This is a descriptive study analyzing qualitative data, linked to design of bioactive plants for human use by families of farmers ecologically-based region in Southern Rio Grande do Sul, developed by the School of Nursing, Federal University of Pelotas and by Embrapa funded by the National Development Council Technological Development (CNPq).

The participants consisted of eight farming families and their family generations, for a total of 19 people, who were farmers living in rural areas of the municipalities of Pelotas, Morro Redondo, Canguçu and Arroio do Padre, southern region of Rio Grande do Sul. A selection of participants was made through the display of these by the coordinator of the association of stallholders as knowledgeable of medicinal plants, based on the methodology of snowball sampling.8 data collection occurred between January and May 2009, the homes of families.

There were used as instruments the simple observation and semi-structured interviews with photographic record of medicinal plants. The collected plants were photographed and identified by a botanist, linked to Embrapa. The interview questioned about the profile of participants, knowledge of plants toxic to human health, as well as information on how to acquire knowledge on the topic.

This study was respected COFEN Resolution 311/2007, the Code of Ethics for Professional Nursing and Resolution 196/9610 of the National Board of Health; Ministry of Health. All participants signed the Free and Informed Consent. The project received approval from the Public Health Ethics Committee of the School of Nursing, Federal University of Pelotas.
the Medical School of the Federal University of Pelotas (072/2007) Research Ethics Committee.

Regarding data analysis, relevant to farmers' knowledge about toxic plants information was organized into a framework (scientific name, family, common name, and mentioned by participants use) and later compared with pharmacological, phytochemical and ethnobotanical studies.

In this sense from the information of survey participants searches were carried out in literature, on-topic and studies available atLiLACS (Latin American Literature on Health Sciences), SciELO (Scientific Electronic Library Online), PubMed (Medline Public) books, ScienceDirect - Elsevier, in order to meet the objective. Searches were conducted by the scientific name of each medicinal plant mentioned.

**RESULTS**

The ethnobotanical survey showed the quote of 196 plants by the interviewees, these, 11 were referred to as toxic.

Table 1 presents the plants mentioned by participants as toxic, specifying the taxonomic identification in which most plants was identified by its genus and species and some were only identified the genre, along with the popular name and indication of respondents.

**DISCUSSION**

Plants are often marketed and publicized through the media, as a product that brings only benefits, since it comes from a natural source, however, the supposed pharmacological properties advertised may not have scientific legitimacy, because they have not been investigated, or because they have not had their pharmacological actions proven in scientific tests. In this perspective that the plant does no harm to health, the population uses them in conjunction with manufactured drugs, which may have synergistic effects and interactions cause.

A survey in Maringa, who analyzed records toxicology case the poison control center at a university hospital, identified the toxic plants were responsible for 20 cases of plant poisonings and "me-nobody-can" (*Dieffenbachia picta*) was identified as the main cause in a group of children under 14 in 1995.

The scientific literature confirms that the toxicity of two species of Dieffenbachia (*D. picta* and *D. exotica*) were tested in rats and showed the toxic effect, causing edema, vascular congestion, degeneration of the basal membrane and inflammatory reaction. There is record reports three cases of eye injuries, causing pain, blurred vision and decreased visual acuity caused by contact with this plant, and oropharyngeal edema after oral ingestion of the plant stem.

Recognition of the high toxicity of Nicotiana tabacum (tabacco) has his job for medicinal purposes inappropriate. Preclinical pharmacological and clinical trials reported as main effects in small doses, increased blood pressure and the mucosa stomach activity, and at higher doses, decreased blood pressure, decreased tone of the digestive
muscles, stimulation of respiration and central nervous system, leaving one more alert.\textsuperscript{14}

The \textit{Senecio brasiliensis} (maria-mole) is one of the most toxic species of poisonous plants of the genus \textit{Senecio}.\textsuperscript{15} According to a case report of a 2 year old had hepatic veno-occlusive disease after drinking the tea from this plant.\textsuperscript{16} There case also poisoning in cattle after ingestion of this, causing liver damage and death.\textsuperscript{17}

The \textit{Zantedeschia aethiopica} (copo-de-leite) presents evidence of toxic activity through in vitro test due to the presence of idioblasts that if ingested can cause pain, redness and swelling in the mouth, and eye contact, intense irritation.\textsuperscript{18}

For the plant \textit{Papaver} sp. (papoula) studies of two species were found. The study of \textit{P. rhoeas} evaluated the administration of aqueous and alcoholic extract intraperitoneally into mice, and found that some were caused toxic effects, such as reduced locomotor, exploratory and postural,\textsuperscript{19} behavior, since the test with seeds of \textit{P. somniferum} in mice demonstrated significant anticancer activity through inhibition of neoplasm.\textsuperscript{20}

Said privilege reinforces the knowledge that we need to master when we use a plant, because this extracts have been demonstrated to be toxic, but the seeds of the plant of the same genus were found beneficial health effects, highlighting the need to know what chemicals are found in certain parts of a plant and the route that should be used.\textsuperscript{21}

The same case applies in the plant \textit{Symphytum officinale}, commonly known as comfrey, although useful for healing, is toxic if ingested orally, being forbidden the use of this form by the Ministry of Health in Brazil and other countries.\textsuperscript{5,14,22} The main effects caused by oral ingestion are related to liver diseases such as non-occlusive disease, venous thrombosis, obstruction of small hepatic veins leading to cirrhosis and possibly liver failure.\textsuperscript{22}

\textit{Euphorbia pucherrima} (bico-de-papagaio) plant, despite being one of the twelve plants which caused the largest number of poisonings in the United States in the XXI\textsuperscript{22} century, when tested in mice by oral administration did not cause any behavioral damage, intestinal, renal disorder or body weight.\textsuperscript{24}

To \textit{Cestrum nocturnum} (dama-da-noite) and \textit{Plectranthus barbatus} (boldo) no studies demonstrating toxic activities were found. For plant \textit{Cestrum nocturnum} (dama-da-noite), the tested plant study in rats and concluded that \textit{C. nocturnum} extracts are capable of inhibiting the growth of tumors and prolong the lifespan of mice bearing this pathology.\textsuperscript{25}

Another study tested the decoction of dried leaves in rats and brought results suggest that the plant possesses analgesic activity.\textsuperscript{26}

To \textit{Plectranthus barbatus} (boldo) research evaluated the plant by administering leaf infusion, orally in rats for the alleged abortifacient effect and concluded that there was no interference in embryonic development.\textsuperscript{27} The plant has a beneficial effect, to demonstrate through pharmacological test of the aqueous extract of the leaves, gastric hypo-secretor action, reducing not only the volume of gastric juice as its acidity.\textsuperscript{14}

For plants \textit{Daphnopsis fasciculata} (embira) and \textit{Manihot grahamii} (mandioquinha-brava) no scientific studies were found.

Another factor that is associated with the ingestion of plants, and toxicity is conservation. A study that evaluated the conservation of plants showed that 96.7\% of the samples had dirt in addition to a large number be contaminated with insects and fungi, contributing factors disapproval.\textsuperscript{28} When making use of medicinal plants or extracts plants obtained from unsafe source, are great risks of intoxication.

The use of toxic plants is not a problem only for professionals in the health, but also of veterinarians\textsuperscript{29}, who must seek knowledge about medicinal plants, not only on toxicity, but also medicinal use.

With regard to the toxicity of the plants, the field of public health provides enough autonomy to health professionals, as they can work in promoting and health education, but to accomplish this practice successfully, it is important to know the social network Users and their culture, as this greatly influences the aspects of life of individuals, interfering heavily in the health care process.\textsuperscript{30}

Therefore, it is necessary to train professionals who know how to listen, recognize popular\textsuperscript{21}, knowledge that do not impose their views, providing subsidies and allow the user to choose their decisions. Therefore, it is necessary to train professionals who believe in popular culture, avoiding the uncritical reproduction of the biomedical model.

**CONCLUSION**

The popular knowledge of participants about toxic plants in this study is consistent with the 54\% search the scientific literature, which shows that most respondents beware of these plants.

Although the majority of popular knowledge of the participants of this study...
corroborate with scientific literature, other studies are necessary to verify on the dosage, route and part of the plant that can cause poisoning.

We know that there are difficulties in this scenario, but it is important that health professionals, including nurses, are open to evolve their knowledge, because by training, have subsidies to encourage self-care safely through health education.

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