

The Experience of Elderly With Diabetes Mellitus in Herbal Medicine

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ABSTRACT

Introduction

The prevalence of chronic degenerative diseases including diabetes mellitus have increased along with the increasing numbers of elderly people. Diabetes mellitus requires long-term treatment. Currently, there is a growing interest in the used of herbal medicine for diabetes due to the side effects associated with oral hypoglycemic agents. This study aimed to explore the experience of consuming herbal medicine among elderly with diabetes.

Methods

This study applied descriptive phenomenology approach. The data were collected through in-depth interviews. There were nine participants, older people with diabetes mellitus, 60 years old, be able to tell their experience (can speak Indonesian language, not having impairment in speech, hearing, and cognitive), ever or were consuming herbal medicine, expressed their willingness to be interviewed and involved in the study. Audio recorder and field notes were used for data recordings. Data were transcribed and analyzed using Collaizzi method.

Results

The results revealed some themes including various of herbal medicine, uncertain rules for taking herbal medicine, many information sources of herbal medicine, the benefits of taking herbal medicines, perceptions about herbal medicine, and the easiness of obtaining herbal medicines

Conclusions

It is identified that current practice allows the elderly to consume freely the herbal medicines. The government has to set a regulation to standardize herbal medicine and the health workers should monitor diabetes medication consumption regularly.

Keywords

Diabetes Mellitus; Elderly; Herbal Medicine

BACKGROUND

The increasing of life expectancy can also lead to an epidemiological transition in the health sector due to the increasing number of morbidity due to degenerative diseases [1]. Data from the World Health Organization (WHO) showed that life expectancy in the world in 1990 was

64 years, increased to 66 years in 2000, and 70 years in 2012 [2]. The proportion of the elderly population tends to increase along with an increasing in life expectancy. Between 2000 and 2050, the proportion of people aged 60 years and over doubled from 11% to 22%, which increased from 605 million to 2 billion people [2]. The largest increase in the number of elderly will occur in developing countries as a result of declining birth rates [3].

Older persons face degenerative process in many body systems. One of them is decrease of pancreas function [4]. The data show increasing prevalence of diabetes, they are 171 million cases in 2000 years, 382 million in 2013 years, and estimated be 592 million in 2035 [5].

Diabetes mellitus is a chronic disease that requires long-term treatment. Presently, there is growing interest in herbal remedies due to the side effects associated with the oral hypoglycemic agents (therapeutic agent) for the treatment of diabetes mellitus. So the traditional herbal medicines are mainly used which are obtained from plants [6]. Due to lesser side effect and low cost the herbal formulations are becoming popular now days particularly in curing the disease. Herbal medicine plays important role in the management of diabetes mellitus [7].

The aim of this study to explore the meaning of herbal medicine in diabetes mellitus treatment.

METHOD

The research design in this study was a qualitative research by descriptive phenomenology approach. The participant's inclusion criteria were 60 years old, able to tell their experience (can speak Indonesian language, not having impairment in speech, hearing, and cognitive), ever or are consuming herbal medicine, are willing to be interviewed. Researchers as the primary data collection tool. Other data collection tools used in this research were interview guidance, field notes, and a digital recorder. Researchers conducted semistructured indepth interviews with a interview guidance assistance. Researchers tested the interview prior to the two elderly people with diabetes who were not participant to train researchers' ability to respond and to dig deeper. Interviews were conducted at the house of each participant. Indepth interviews conducted for 50-90 minutes on each participant. Recordings are written into a verbatim transcript, then analyzed using Colaizzi's method.

RESULT

The results identified various of herbal medicine, uncertain rules for taking herbal medicine, many information sources of herbal medicine, the benefits of taking herbal medicines, perceptions about herbal medicine, and the easiness of obtaining herbal medicines

Various of herbal medicine

Participants drank various types of herbal medicines to treat diabetes. One participant used more than one kind of herbal treatment. Participants also often change the kind of herbal medicines. Herbal medicines include herbal decoction, leaves and fruit, and herbal medicine on the market. Participants expressed through several statements:

"I now eat kaprika leaves, I eat noni leaves, once I drank brotowali, drank decoction of cinnamon, the walnuts, just drink it, whatever the bitter, try everything" (P3)

"Yes, it is the most to drink the herbs, the herbal medicine ... traditionally I make it by myself, boil it, guava leaves, bay leaves, kumis kucing leaves, if not ... there is a leaven, or can the mangosteen skin, guava leaves, continue kumis kucing leaves, I boiled together, then I drink it..." (P1)

"... drink herbal medicine ... liquid honey ... (bitter honey) with this (shows habbatusauda herbal medicine)" (P2)

uncertain rules for taking herbal medicine

Participants have various rules for taking herbal medicines subjectively without clear instructions. The statement of the participant is disclosed as follows:

"Noni leaves are boiled, soaked only, if the leaves of peppers can be eaten raw, wash thoroughly, eat only five or seven pieces" (P3)

"I drinks the decoction of the leaves, what leaves does anyone say that the neighbor wants to lose the sugar, drink one glass a day" (P5)

"Yes this (bitter honey diabet) twice a day and this one (habbatusauda) sometimes three seeds twice a day" (P2)

many information sources of herbal medicine

Participants received many sources of information about herbal medicine so participants took herbal remedies. Sources of information are obtained by the elderly from neighbors, friends, and television. Examples of participant statements related to the sources of information are expressed as follows:

"A friend who gets diabetic likes to share that herbs for diabetics are bitter thing, there are also people who tell me that eating these leaves, on TV there is also that alternative medicine" (P3)

"My neighbor, he has diabetes too, he said his glucose can be low, every day he drinks a glass. That's if you don't boil the leaves, don't boil betel leaves" (P4)

"So I drank the leaves like that, what leaves did someone say that the neighbor lost the glucose, drank one glass a day" (P6)

the benefits of taking herbal medicines

Participants felt the benefits of herbal medicines consuming. Participants said that the body feels good and fresh after taking herbal medicine. P1 and P3 said that blood glucose levels can be down after taking herbal medicine. The participant revealed the following statement:

"I like the glucose to be little down if I keep drinking the herbs" (P1)

"The herbal medicine in the body is good rather than the medicine of the hospital ... eehhm good ... whole body" (P2)

"If you eat kaprika leaves, glucose can be down one hundred ... it's good on the body." (P3)

perceptions about herbal medicine

Perception about herbal treatment for diabetes mellitus is owned by participants so that participants carry out herbal treatment. Participants have the perception that to treat diabetics must drink the bitter or sour. Participants also perceive that herbal medicine does not have side effects such as medical treatment. This is indicated by the following three examples of participant statements:

"He said that if we have diabetes we drink the bitter herbs and the effects may not exist" (P4)

"People with diabetes should drink the bitter ... make less glucose" (P1)

"Yes, the diabetes medicine is sour" (P7)

the easiness of obtaining herbal medicines

Three of the nine participants revealed that it was easy to get herbal treatment. Participants stated that in order to get herbal medicine, they can seek, plant by themselves, ask for neighbors, and do not need to buy. The statement is expressed through the following statement:

"We can seek for herbs, have trees planted, so I don't need to buy expensively" (P1)

"There are neighbors who have lots of herbal medicine, so just ask the neighbors, don't need to buy" (P4)

"I plant the leaves, if I need just stay picked it." (P3)

DISCUSSION

All elderly in this study performed herbal treatment. This study explains that the elderly use various types of herbal treatment to treat diabetes mellitus. One elderly person can consume several herbal medicines at once. Elderly people also often change kind of herbal medicine. The kind of herbal medicines consumed by elderly include kaprika leaves, binahong leaves, kumis kucing leaves, mangosteen rind, noni fruit, noni leaves, betel leaves, bay leaves, lime leaves, guava leaves, brotowali leaves, walnuts, honey, and habbatusauda.

Elderly people do herbal remedies because they got a lot of information about herbal medicines, to reduce medical treatment, have benefit from herbal medicine, are easy to get herbal medicines, and think that herbal remedies do not have side effects like medical drugs. Elderly people can get various kind of herbal medicines easily because these herbal medicines can be planted by themselves, asking neighbors, or buying in the form of packaging at low prices. Elderly got a lot of information sources about kind of herbal medicines from neighbors and television. Elderly people have various rules for processing and taking herbal medicine without any clear instructions. Elderly people take herbal medicine to reduce medical drugs and reduce blood glucose. Elderly in this study stated that they felt the benefits of herbal medicine in the form of a decrease of blood glucose and body feels good. But this perceived effect differs for each elderly person.

Indian prehistoric literature reported more than 800 plants with antidiabetics, while ethno pharmacological surveys showed that more than 1200 plants can be used for hypoglycemic activity [8]. Herbs are also known to help relieve symptoms and help prevent secondary complications of diseases including lowering cholesterol. Some herbs have also been shown to help in regenerating cells and overcome insulin resistance. In addition, many herbs have antioxidant activity to maintain normal blood glucose levels.

The results of Hussin's study (2001) showed that herbal medicines are widely used because of their effectiveness, lack of side effects, various actions and low costs relatively. However, herbal remedies without trials are usually not evaluated for the purity and consistency of active compounds and often contain contaminants. The true mechanism for lowering blood

glucose is often unknown. In addition, herbs may not work well for everyone and their overall effects can vary with each individual due to lack of standardization [9].

Elderly stated that some of them consume single herbal medicines, but there are some elderly who consume herbs simultaneously by boiling some plants into one. Elderly people often drink herbs according to their own rules. This is supported by research by Chawla which explains that side effects can also occur in certain patients and a combination of these ingredients may be needed to get the desired effect which leads to the development of pre-clinical trials for poly-herbal formulations. Various shortcomings of herbal medicines include: a) prescribing to yourself, no quality assurance, and can also interact with other drugs, b) contraindications to herbal medicines and related beliefs that are unusual, c) contain of pharmacologically active compounds that need evaluated for drug interactions, d) usually causes liver and kidney problems if taken in excess; due to lack of pharmacodynamic and pharmacokinetic data and body clearance rates, e) difficulties in identifying causative agents associated with side effects because they often contain some ingredients, f) lack of standardization of drug system formulation g) action of herbal elements is not clear enough to support therapeutic use . The possibility of the interaction of herbal medicines and the lack of standardization of herbal medicines need to be a concern of the elderly in consuming herbal medicines because it could be that these drug interactions cause unwanted effects [9].

Although the elderly in this study did not feel any complications from herbal medicine, the elderly needed to pay attention to the following related complications from herbal treatment. Complication refers to changes or problems that occur when treatment goes beyond the desired effect and causes undesired symptoms. Complications can be mild or severe, varying from person to person. Herbs usually do not show an adverse reaction, if tested for a longer period. Whereas due to lack of standardization, pharmacological and toxicological evaluation, certain undesirable effects might develop as a result of intake of non-standardized herbal formulations. These effects are generally due to contaminants rather than the active substance itself. This contraindication develops as a physical condition that puts several people at risk of danger using certain herbal formulations [9]

The explanation above illustrates that the use of herbal medicines in the elderly is in accordance with the results of previous studies. Elderly freely use a variety of herbal medicines without clear instructions and rules. Cultural heritage of traditional medicine is still attached to the elderly. The Indonesian environment in the tropics which has a lot of natural resources in the form of plants also supports the many herbal remedies carried out by the elderly. The herbal remedies that are widely carried out do not yet have clear rules. Although the side effects of herbal medicine are very minimal, it is important to note the interaction of some herbal medicines.

CONCLUSION

The using of herbal medicines is freely carried out by the elderly, so the government need to standardize herbal medicine and the health workers need to monitor diabetes medication regularly

Declarations

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Authors' contributions

Each author contributed equally to this study and to the writing of the article. All authors read and approved the final manuscript.

Ethics approval and consent to participate

Ethical clearance was approved by the Ethic Committee in the Faculty of Nursing, Universitas Indonesia. Verbal and written consent was obtained by participants in the study.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

REFERENCES

1. Kemenkes RI. (2013). *Jendela Data dan Informasi Lansia*. Buletin Semester I 2013 ISSN 2088-270X. Jakarta: Kemenkes RI.
2. WHO. (2014). Life expectancy Data by region. <http://apps.who.int/gho/data/view.main.690g?lang=en>. Diakses tanggal 26 Januari 2015.
3. Allender, J.A., Rector, C., & Warner, K.D. (2014). *Community Health Nursing: Promoting and Protecting the Public's Health* (8th ed.). Philadelphia: Wolter Kluwer Health Lippincott William & Wilkins.
4. Greene, B., Merendino, J.J., & Jibrin, J. (2009). *The Best Life Guide to Managing Diabetes and Pre-Diabetes*. New York: Simon & Schuster.
5. International Diabetes Federation. (2013). *Managing Older People With Type 2 Diabetes Global Guideline*. Belgia: IDF
6. Patel, K., Srinivasan, K., (1997). Plant foods in the management of diabetes mellitus: vegetables as potential hypoglycemic agents. *Nahrung* 41. 68–74
7. Paramanick D, Sharma N (2017) A Review on Herbs which are Used in Diabetes Mellitus. *Int J Drug Dev & Res* 9:12-17
8. Mishra, Rao, Ojha, Vijayakumar, & Verma, 2010. An analytical review of plants for anti diabetic activity with their phytoconstituent & mechanism of action. An analytical

review of plants for anti diabetic activity with their phytoconstituent & mechanism of action. International Journal Of Pharmaceutical Sciences And Research

9. Chawla, et.al. (2013). Evidence based herbal drug standardization approach in coping with challenges of holistic management of diabetes: a dreadful lifestyle disorder of 21st century. Journal of Diabetic and Metabolic Disorder. 2013, **12**:35 doi:10.1186/2251-6581-12-35