

The Development of Instant Herbal Foot Soaking Products to Evaluate Satisfaction in Reducing Numbness Levels in Diabetic Patients

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Abstract

The purpose of this research is 1. to analyze the situation Problems and demand for herbal foot bath products to reduce foot numbness in diabetic patients 2. To develop ready-made herbal foot bath products to reduce foot numbness in diabetic patients. 3. To compare the level of foot numbness in diabetic patients. 4. To assess the satisfaction of diabetic patients. This research is a quasi-experimental research. (Quasi-Experimental Research) The study group consisted of type 2 diabetic patients with foot numbness who received services at Udon Thani Thai Traditional Medicine School. Udon Thani Province, 30 people, with specific criteria for selecting samples. By collecting data between November 2022 - February 2023, then analyzing the data and summarizing the results. By finding percentage, mean (\bar{x}) and standard deviation (S.D.) and Paired Samples T-test.

Comparison between before and after using the product showed that the level of foot numbness after foot bath (day 60), left and right foot numbness decreased compared to before foot bath (day 30), which From the statistical analysis, it was found that the level of numbness of both feet before and after the foot bath was found to be significantly different at the 0.05 level. Overall satisfaction was at the highest level ($\bar{x} = 4.82$). When considering each finding, it was found that the first level of satisfaction with using the product was that the finished herbal foot bath product was convenient to use. Have the highest level of satisfaction with using the product ($\bar{x} = 4.90$).

This research will bring the natural resources available in the community, such as turmeric, lemongrass, kaffir lime skin, galangal, Wan Nang Kham, vine, plai, salt, alum, to develop ready-made herbal foot bath products that are effective in reducing numbness in diabetic patients. and

a way to increase satisfaction level in the use of ready-made herbal foot bath products to help reduce numbness in diabetic patients.

Keywords: Diabetes, Foot soaking with herbal water, Instant herbal foot bath, Numbness, Level of satisfaction

Introduction

Area conditions of Ban Nong On community, Chiang Phin sub-district in general Most of them are flat plains. Some parts are plateaus. Most of the forests are sparse forests. Forest shrubs are everywhere. and has planted forests in honor of His Majesty the King in the public area "Don Bong", about 30 rai, and the villagers have jointly planted forests in the cemetery public area There are a variety of medicinal plants such as Plai, Chanpha tree, galangal, pandanus leaves, Centella asiatica, Enon vine, turmeric, pea, lemongrass, kaffir lime, Wan Nang Kham, etc., and there is enough water for consumption as well as for seasonal agriculture. The majority of the population is engaged in agricultural farming, namely rice farming and gardening, with an agricultural area of approximately 50 square kilometers or approximately 31,250 rai. In addition, some farmers also raise animals. and aquaculture for consumption and distribution for additional income as well (Chiang Phin Subdistrict Administrative Organization, 2022)

Thai traditional medicine treatment. Nowadays, Thai traditional medical knowledge is applied in foot care, which has a variety of forms. Soaking your feet in herbal water is another method that is accepted not only in Thailand. Soaking your feet in a warm bath is also practiced in both Western and Eastern cultures. In addition to being able to help reduce foot pain. Soaking your feet in hot water with a temperature of about 36-38 degrees Celsius will help bring more blood to the feet. and reduce congestion in other parts such as the head or pelvic cavity And can reduce headaches or menstrual cramps. Soaking feet in hot water about 36-38 degrees Celsius for 10-15 minutes, alternating with cold water, about 12 degrees Celsius, will help reduce foot swelling well according to alternative medicine theory in the branch of Reflexology. related to the functioning of various organs throughout the body and use foot massage to treat various symptoms Therefore, it is believed that immersing your feet in hot or cold water stimulates these

contact points with thermal energy, which in turn affects the functioning of the body's internal organs. Dr. William Winterwitz, an Austrian, in 1880 discovered that the sensory nerves in the skin had neural circuits connected to muscles, glands and organs in the body. And when hot or cold water contacts the skin, signals follow these circuits to different parts of the body. And can cause changes in the function of distant organs (Suriya Na Nakorn and Varanya Phuangpong, 2017).

A study of herbal foot baths on foot numbness in diabetic patients. Composed of ginger, plai, gotu kola, turmeric, senna leaves, Rang Chuet, kaffir lime leaves, lemongrass, it was found that the foot numbness of diabetic patients after the herbal foot bath was lower than before the herbal foot bath. The statistical significance at the 0.05 level showed that the herbal foot bath had the effect of reducing foot numbness in diabetic patients (Suleiman). Yemureng, 2014) is consistent with the study of diabetic foot care with herbs. To reduce foot numbness in 16 diabetic patients by organizing foot care activities. foot cleaning Soak your feet with plain warm water mixed with 9 kinds of herbs boiled according to the principles of Thai traditional medicine. Is a little bare leaf, Hnad leaves, kaffir lime leaves and balls, pandan leaves, turmeric sliced into pieces, old galangal, sour tamarind leaves, citronella, phlai by providing a foot bath every Friday of every month and assess numbness after foot bath with herbs The results showed that Participants had less numbness in their feet. Foot examination found that low risk patients decreased by 37.25%, moderate risk patients decreased by 18.75%, high risk and very high-risk patients remained the same. It can be seen that the use of herbs in foot baths to reduce foot numbness in diabetic patients. It is effective for low-risk and moderate-risk diabetic patients. It is another way to increase the quality of life in diabetic patients (Pattaraporn Khunhang, 2022).

Research Objectives

- 1) To analyze the situation Problems and needs for herbal foot bath products to reduce foot numbness in type 2 diabetic patients
- 2) To develop ready-made herbal foot bath products to reduce foot numbness in type 2 diabetic patients.
- 3) To compare the level of foot numbness in patients with type 2 diabetes between before and after the use of ready-made herbal foot bath products.

4) To assess the satisfaction of type 2 diabetic patients towards ready-made herbal foot bath products to reduce foot numbness.

Literature Review

Suriya Na Nakorn et al. (2022) stated that foot baths in warm water are practiced in both Western and Eastern cultures in addition to helping to reduce foot pain. Soaking feet in hot water will help increase the blood supply to the feet and reduce the symptoms of congestion in other parts such as the head or pelvis. And can reduce headaches or menstrual cramps. Soaking your feet in hot water about 36-38 degrees Celsius will help reduce swelling as well. According to the theory of alternative medicine in the field of Reflexology, it is believed that the feet have contact points that are related to the functions of various organs. body and used in foot massage to treat various symptoms Therefore, it is believed that immersing your feet in hot or cold water will stimulate these contact points. This with heat energy, which affects the functioning of the internal organs of the body as well. Reflexology theory matches the study of Dr. William Winterwitz. An Austrian in 1880 discovered that the sensory nerves in the skin have neural circuits connected to the muscles. glands and other parts of the body and when hot or cold water contacts the skin, signals follow these circuits to different parts of the body and cause changes in the function of distant organs.

Banchop Chunhasawatdikul (2022) mentioned about warm foot bath (Warm Foot bath) that soaking feet with warm water will make us feel relaxed. Easy to sleep and also improves blood circulation after soaking your feet in water with a temperature of about 36-38 degrees Celsius for 10-15 times and then wiping your feet dry. rest for at least half an hour will make the full effect Benefits of soaking feet with warm water Helps the digestive system work better Makes the blood circulation system better, stimulates the body's resistance Reduce inflammation of the nose and throat make it easy to sleep Caution for soaking feet with warm water should be careful in using with people with a history of diabetes, varicose veins, and wounds or skin diseases on the feet.

Praepat Yodkaew (2022) studied the development of ethical behavior of social studies program students. Nakhon Pathom Rajabhat University With the project to increase the power of education with Dharma books of Phra Ajarn Mitsuo Kvesko, measuring the level of satisfaction in

the Dharma books. from the document review according to the concept of satisfaction which looks like a scale according to the valuation form using the Likert estimation that allows respondents to rate (1-5) by selecting only one answer. It consisted of 35 questions. Satisfaction levels were most, high, moderate, low, least were 4.50 – 5.00, 3.50 – 4.49, 2.50 – 3.49, 1.50 – 2.49, 1.00 – 1.49 respectively. The results of the study showed that the overall picture of Dharma books is at the highest level. The confidence value of the whole questionnaire was 0.919, covering the concept of satisfaction in Dhamma books.

Hypothesis

1. The level of foot numbness in type 2 diabetic patients was reduced after using the herbal foot bath product.
2. Patients with diabetes were satisfied at a high level after using the finished herbal foot soak.

Research Methodology

Study population

Population used in this study. staff at diabetes clinic Udon Thani Thai Traditional Medicine School Ban Nong On Community, Muang District, Udon Thani Province, 6 people and type 2 diabetic patients with foot numbness who came to receive services at Udon Thani Thai Traditional Medicine School. Udon Thani Province, 44 people, total 50 people

Sample group and random sampling method

This study group consisted of 42 subjects used in the study, which were:

1. Staff in the diabetes clinic School of Thai Traditional Medicine, Udon Thani, 6 people used in the group discussion process. To analyze the situation of foot numbness in type 2 diabetic patients and the demand for ready-made foot bath products Udon Thani Thai Traditional Medicine School
2. Type 2 diabetic patients with foot numbness who received services at Udon Thani Thai Traditional Medicine School. 36 people in Udon Thani province, 6 people will participate in focus groups while 30 people will be a sample used in the finished product trial. The criteria for selecting a specific group of samples (specific purpose sampling) to randomly sample type 2 diabetic

patients with foot numbness. in Udon Thani Thai Traditional Medicine School Ban Nong On Community, Mueang District, Udon Thani Province as a sample group in the study by considering selecting a group of type 2 diabetes patients to meet the research objectives with the selection criteria as follows

Criteria used to select patients to participate in the research (Inclusive)

- 1) No limit on sex, age, education, occupation.
- 2) Patients are willing to participate in this research.
- 3) have a good sense of consciousness
- 4) Type 2 diabetes mellitus and foot numbness as seen by monofilament examination at 1 or more points but not more than 4 points.
- 5) No history of allergy to herbal medicines

Exclusion Criteria (Exclusive)

- 1) Type 2 diabetic patients who lack ongoing treatment
- 2) Type 2 diabetic patients with foot ulcers and bruises
- 3) type 2 diabetic patients with foot numbness On monofilament examination, there were more than 4 foot numbness.

research tools

The instruments used in the study were records and products, consisting of 5 types as follows:

Type 1 Group Discussion Questions It's an open-ended question. To study the situation and problems of finished foot bath products to reduce numbness in diabetic patients.

Type 2: Foot bath products Made from natural resources, medicinal plants that exist in the community of Ban Nong On a lot. In the form of a finished product used to soak feet to reduce numbness in diabetic patients, consisting of 8 herbs, including lemongrass, kaffir lime skin, galangal, Wan Nang Kham, vine, plai, salt, alum for foot soaking to develop into finished foot bath products to reduce numbness in diabetic patients Numbness in diabetic patients in a manner that is easy to carry, is a dry powder, fine texture, without moisture. have a long service life can be mixed with warm water

Category 3: Product Quality Assessment Form This is an assessment of the quality of finished products used in foot baths to reduce numbness in diabetic patients. by experts in product research and development

Type 4 diabetic foot numbness recording form It consists of anesthesia recording form. which have characteristics according to the records of the Udon Thani Thai Traditional Medical School, Muang District, Udon Thani Province There will be details in the recording about type of diabetes General characteristics of the feet history of foot ulcers History of foot amputation Assessment of foot ulcers and assessment of the nervous system in the feet. which is the nature of the comparison between before and after

Type 5: Satisfaction Assessment Form (Praepat Yodkaew, 2022) towards the finished herbal foot bath products to reduce numbness in diabetic patients.

data collection

Data were collected manually by using questionnaires and assessments as data collection tools.

data analysis

Mean, standard deviation, and Paired-Samples t-test were used for statistics.

Research Findings

1. The result of the discussion was found that

A group of 6 diabetes clinic staff and 6 type 2 diabetic patients with foot numbness at the diabetes clinic. Udon Thani Thai Traditional Medicine School Ban Nong On Community, Muang District, Udon Thani Province found that the problem of foot numbness care in diabetic patients at present Nowadays, there is a foot bath in the form of herbal boiled water. Will use fresh or dried herbs to boil together and mix with normal temperature water to use in foot bath to relieve foot numbness. together with applying a balm or massage oil to the numb area Having stepped on a coconut shell to stimulate the soles of the feet together and will encounter problems in finding difficult herbs Although the natural cost of medicinal plants in Ban Nong On community is large. But because the patient does not have time to soak his feet, he cannot soak his feet continuously. The knowledge of diabetic foot care and infusion methods was only obtained from the advice of the staff in charge of the diabetes clinic. However, there is no demonstration of

herbal juice preparation before infusion for patients. Because the number of patients with diabetes is large. The number of personnel is insufficient. In addition, it was difficult and time consuming to prepare herbal foot baths, leading to problems in diabetic foot baths. Patients therefore need a new type of foot bath product. that comes from a large number of medicinal plants in the community It comes in a fine powder and is easy to use. Can be easily carried have a long service life is safe for users does not cause irritation There is no residue in the product. It has properties to treat numbness of the feet of diabetic patients. It has a herbal fragrance and patients can use the product on their own at home.

2. The results of the product development of finished herbal foot baths found that

Get ready-made herbal foot bath products that take natural resources from the community of Ban Nong On, Chiang Phin Subdistrict, Mueang District, Udon Thani Province, consisting of turmeric, lemongrass, kaffir lime skin, galangal, Wan Nang Kham, vine, phlai, salt, alum to develop into products. Ready-made foot soak to reduce numbness in patients with type 2 diabetes, which has a characteristic that is easy to carry as a dry powder, fine texture, without moisture. have a long service life can be mixed with warm water

3. The results of foot numbness examination found that

When comparing the mean foot numbness in diabetic patients 1 month before the foot bath and the first day of the foot bath with ready-made herbal foot bath products to reduce diabetic foot symptoms, it was found that before the foot bath 1 month (Day 0) The level of numbness of both left and right feet was less than before the first day of foot bath (day 30). There was no statistically significant difference at the 0.05 level.

When comparing the mean foot numbness before foot bath with ready-made herbal foot bath products to reduce foot numbness in diabetic patients (day 30), it was found that the mean level of foot numbness was 1.37 points on the left side, 1.37 points on the right side and 1.37 points on the back. Foot soaking with ready-made herbal foot bath products to reduce diabetic foot numbness (day 60) found that the mean level of left foot numbness was 0.60 points and the right side was 0.63 points. Foot bath (Day 60) Numbness of the left and right feet decreased. Compared with before the foot bath (day 30), from the statistical analysis, it was found that the level of numbness on both sides before and after the foot bath with the finished herbal foot

bath products to reduce the numbness of the feet in diabetic patients. It was found that there was a statistically significant difference at the 0.05 level.

4. Satisfaction level of using finished herbal foot bath products For reducing numbness in diabetic patients who come to Udon Thani Thai Traditional Medicine School. Udon Thani Province found that

Overall, it was at the highest level ($\bar{x} = 4.82$). When considering each aspect, it was found that the innovation model had the highest average satisfaction. was at the highest level ($\bar{x} = 4.84$), followed by benefits had the highest mean ($\bar{x} = 4.83$) and the satisfaction of the finished herbal foot bath was the lowest. is the quality with the highest average level ($\bar{x} = 4.79$)

Satisfaction level for the successful use of herbal foot bath products to reduce foot numbness in diabetic patients. Overall, there was the highest level of satisfaction for using the product ($\bar{x} = 4.82$).

When considering the innovation model, it was found that the total average The highest satisfaction was at the highest level ($\bar{x} = 4.84$). The average satisfaction of the finished herbal foot bath products was the highest. The ready-made herbal foot bath products had the form of size suitable for the users. The satisfaction level of the product was the highest ($\bar{x} = 4.86$), the lowest mean satisfaction of the ready-made herbal foot bath products. is that the product is durable to use There is product information, how to use, precautions, has a beautiful appearance. There are suitable colors to use. And can be applied in everyday life with the highest level of satisfaction with using the product ($\bar{x} = 4.83$).

In terms of benefits, it was found that the total mean The highest satisfaction was at the highest level ($\bar{x} = 4.83$). The average satisfaction of the finished herbal foot bath products was the highest. The finished herbal foot bath products were convenient to use and had the highest level of satisfaction with product use ($\bar{x} = 4.90$). The lowest mean satisfaction for the finished herbal foot bath products was the finished herbal foot bath products. It is the use of herbs that are easy to find in the local area to benefit and Finished herbal foot bath products are another alternative used to reduce foot numbness in diabetic patients with the highest level of satisfaction with using the product ($\bar{x} = 4.80$).

In terms of quality, it was found that the total average The highest level of satisfaction was at the highest level ($\bar{x} = 4.79$). The average satisfaction of the finished herbal foot bath products was the highest. The finished herbal foot bath products were of suitable color for use. The highest level of product satisfaction was ($\bar{x}=4.83$). The lowest mean satisfaction of the finished herbal foot bath products was the finished herbal foot bath products. The smell is suitable for use. The level of satisfaction with using the product is the highest ($\bar{x}=4.77$).

When considering each of the findings, it was found that the first level of satisfaction with using the product was that the finished herbal foot bath product was convenient to use, with the highest level of satisfaction with using the product ($\bar{x}=4.90$), the second level. is that the finished herbal foot bath product has the form, size that is suitable for users, has the highest level of satisfaction with using the product ($\bar{x}=4.86$), and the third is that the product is durable to use. There is product information, how to use, precautions, has a beautiful appearance. There are suitable colors to use. And can be used in everyday life with the highest level of satisfaction with using the product ($\bar{x}=4.83$).

Discussion and Conclusion

1) The results of a group discussion where patients wanted a new type of foot bath product. that comes from a large number of medicinal plants in the community It comes in a fine powder and is easy to use. Can be easily carried have a long service life is safe for users does not cause irritation There is no residue in the product. It has properties to treat numbness of the feet of diabetic patients. There is a fragrant aroma from herbs and patients can use the product by themselves at home in line with the research of Suthipat Tassaneethanongjit (2022) who studied The effect of herbal foot bath in diabetic patients with toe numbness at Sam Ngao Hospital, Tak Province, was a quasi-experimental research. The purpose of this study was to study the effects of herbal foot baths in diabetic patients with numbness of the toes. Between before and after foot bath with herbal water the results showed that the mean foot numbness before herbal foot bath was equal to (3.30 ± 1.39) points. Statistical $(0.50 \pm 0.73, p < 0.001)$

2) The results of the development of ready-made herbal foot bath products to reduce foot numbness in diabetic patients consisting of various herbs such as lemongrass, kaffir lime skin, galangal, Wan Nang Kham, vine tendon, plai, salt, alum, the products were as follows: fine powder

no joy have a pleasant smell have the right size durable to use There is an appropriate time to dissolve the product. can be mixed with warm water have a beautiful appearance And convenient to use, which herbs, lemongrass, plai, kaffir lime leaves, salt, which are herbs with hot power used to reduce foot numbness, are consistent with the research of Jaipetch Klajon (2020) to study self-reliant health techniques in the sufficiency economy concept. Just according to the Buddhist alternative medicine (Boonniyom) method, soak your feet with herbal water if your hands and feet feel numb, cold, and chills in your body. Often have white fungus on the skin or on the nails, feet, swollen feet, cold, use hot herbs, turmeric, 1 knuckle, ginger, lemongrass, 1 head, 1-3 kaffir lime leaves, 1 tablespoon of salt, bring to a boil with about 1 liter of water, about 1 liter of boiling water. 5 – 10 minutes, then mix with normal water to warm enough Soak your hands and feet for as long as you feel comfortable. Found that when immersed in warm water, the toxic energy compressed in the body will move out within 3 minutes, after which the poison of warm water will move into harming the body. Knowledgeable people will soak in warm water for only 3 minutes and then rise from warm water for 1 minute when the body is cool. The hot toxic energy in the body will move against the cold. when we soaked in warm water again the muscles will relax. The heated poisonous energy would be able to move out of the body. The author found that the venom can be removed as much as 3 cycles after that if we continue to soak in warm water. Warm water poisoning will move into attacking the body.

3) The study found that when comparing the mean foot numbness in diabetic patients 1 month before the foot bath and before the first day of foot bath with herbal foot bath products to reduce diabetic foot symptoms, it was found that 1 month before the foot bath (Day 0), the level of numbness of both left and right feet was less than before the foot bath on the first day (Day 30). Statistics at the 0.05 level, so it is necessary to soak your feet with ready-made herbal foot bath products to reduce diabetic foot numbness in order to reduce the numbness of the feet. When comparing the mean foot numbness before foot bath with ready-made herbal foot bath products to reduce foot numbness in diabetic patients (day 30), it was found that the mean level of foot numbness was 1.37 points on the left side, 1.37 points on the right side and 1.37 points on the back. Soaking feet with ready-made herbal foot bath products to reduce diabetic foot numbness (day 60) found that the mean level of left foot numbness was 0.60 points and the right side was 0.63 points. Foot bath (Day 60) Numbness of the left and right feet decreased.

Compared with before the foot bath (day 30), from the statistical analysis, it was found that the level of numbness on both sides before and after the foot bath with the finished herbal foot bath products to reduce the numbness of the feet in diabetic patients. It was found that there was a statistically significant difference at the 0.05 level as a result of foot soaking with ready-made herbal foot bath products to reduce foot numbness in diabetic patients. The product developed contains a mixture of all 8 herbs, namely lemongrass, which contains essential oils that act against fungi, relieve joint pain, aches and pains, bruises from falls, sweating, and pain relief. Anti-inflammatory and reduce infection Stimulate the circulatory system. Bergamot skin contains essential oils. Stimulate blood circulation to help the peripheral veins. enlarged organs Blood flows to the palms and soles of the feet well. Relieves aches and pains in the joints, relieves cramps, roots, drives blood, makes walking easier, cures beriberi, Wan Nang Kham, which is used to treat rashes, allergies and helps reduce itching. Infected wounds, purulent wounds, mixed with water, applied to the skin, helping to firm the skin. En-enaon vine has properties to relieve aches and pains. By the leaves have a boring taste. Used to make a compress by bringing the leaves to pound thoroughly and then wrapped in cloth to make a compress to relieve grief relieve tendon pain Help loosen the tendons. Causing the ligaments to stretch and relax. Plai rhizome affects the musculoskeletal system, reducing and relieving spasms. Treat beriberi, reduce inflammation, pain, swelling, stiff lines, sprains, salt, nourish skin and clear oily mucus. and alum, which has healing properties both externally and internally, leucorrhea, gonorrhea, diuretic, gallstones, pneumonia, wound healing, hemostasis in minor wounds, consistent with the research of Pattaraporn Khun Hang (2022) has studied diabetic foot care with herbs The results of the study aimed to reduce foot numbness in diabetic patients. The target group is 16 diabetic patients by organizing foot care activities. foot cleaning Soak your feet in warm water mixed with boiled water from 9 types of herbs according to the principles of Thai traditional medicine: Bai Pao, Bai Nad, kaffir lime leaves and seeds, pandan leaves, turmeric slices, galangal, sour tamarind leaves, citronella, plai. by providing a foot bath every Friday of the week and assess numbness after foot bath with herbs The results showed that Participants had less numbness in their feet. Foot examination found that low risk patients increased to 37.25%, moderate risk patients decreased to 18.75%, high risk and very high-risk patients remained the same. It can be seen that the use of herbs in foot baths to reduce foot numbness in diabetic patients. It is effective for low-risk and

moderate-risk diabetic patients. Reduce and prevent foot ulcers in patients As a result, the risk of amputation of the patient's foot is reduced. It is another way to increase the quality of life in diabetic patients and is consistent with the research of Sulaiman Yemureng (2014). Composed of ginger, plai, gotu kola, turmeric, senna leaves, Rang Chuet, kaffir lime leaves, lemongrass, it was found that the foot numbness of diabetic patients after the herbal foot bath was lower than before the herbal foot bath. The statistical significance at the 0.05 level showed that the herbal foot bath had the effect of reducing foot numbness in diabetic patients.

4) The evaluation of the use of ready-made herbal foot bath products to reduce foot numbness in patients was conducted in an experimental group of 30 people to try ready-made herbal foot bath products to reduce foot numbness in diabetic patients and evaluated according to the form. record It was found that the volunteers did not have allergies. not irritated No one withdrew from the experiment found that the sample consisted of female than male The age range is over 61 years old. The education level is mostly completed in elementary school. When evaluating the level of satisfaction with the use of ready-made herbal foot soaking products to reduce foot numbness in diabetic patients, each joint and side It was found that the overall level of satisfaction with the use of the product was the highest. When considering each aspect, it was found that the aspect of innovation had the highest average. at the highest level When considering the items in the form of innovation, it was found that the average satisfaction of the finished herbal foot bath products was the highest. The ready-made herbal foot bath products have the form and size suitable for the users with the highest level of satisfaction with using the product. and the lowest average satisfaction with herbal foot bath products. is that the product is durable to use There is product information, how to use, precautions, has a beautiful appearance. There are suitable colors to use. And can be used in everyday life with the highest level of satisfaction with using the product. followed by benefit aspect with the highest average level. The average satisfaction of the finished herbal foot bath products was the highest. The finished herbal foot bath products are convenient to use and have the highest level of satisfaction with using the product. The lowest mean satisfaction of the finished herbal foot bath product was the finished herbal foot bath product. It is the use of herbs that are easy to find in the local area to benefit and finished herbal foot bath products are another alternative used to reduce foot numbness in diabetic patients with the highest level of satisfaction with using the product and Satisfaction with

finished herbal foot bath products the least is the quality with the average at the highest level. When considering the items in terms of quality, it was found that The average satisfaction of the finished herbal foot bath products was the highest. The finished herbal foot bath products had the color suitable for use with the highest level of satisfaction in using the product. The satisfaction of the finished herbal foot bath product was the lowest mean that the finished herbal foot bath product smelled suitable for use and had the highest satisfaction level for the product use. When considering the findings, it was found that The first level of satisfaction with the use of the product was that the finished herbal foot bath product was convenient to use; the second level was the satisfaction level for the product use; It is suitable for users. The level of satisfaction with using the product is the highest and the third is that the product is durable to use. There is product information, how to use, precautions, has a beautiful appearance. There are suitable colors to use. And can be used in everyday life with the highest level of satisfaction with using the product. This is in line with the research of Hassaya Sriwilai (2017) to study the development of herbal foot bath products to reduce diabetic foot numbness in Ngao District, Lampang Province, to compare diabetic foot numbness. before and after using the product and assessing satisfaction with the trial of herbal foot bath products to reduce toe numbness in diabetic patients found that the overall level of satisfaction with the use of the product was the highest ($\bar{x}=4.77$). The 1st level of satisfaction with product use was that the product was able to utilize local herbs, had the highest level of satisfaction with product use ($\bar{x}=4.97$). The highest level of satisfaction with using the product ($\bar{x}=4.93$) and the third was that the product had a clear description of properties and methods of use. The highest level of satisfaction with using the product was ($\bar{x}=4.90$). Considered individually, it was found that the first order of satisfaction with the product was the benefit ($\bar{x}=4.92$), the second was the quality ($\bar{x}=4.80$), and the third was the appearance ($\bar{x}=4.62$).

Suggestions

From this research and development study

1. An effective ready-made herbal foot bath product to reduce numbness in patients with type 2 diabetes mellitus was obtained at Udonthani Thai Traditional Medicine School. Udon Thani Province

2.Type 2 diabetic patients at Udonthani Thai Traditional Medicine School Udon Thani province showed a decrease in the level of numbness after using ready-made herbal foot bath products to reduce numbness in diabetic patients.

3. It is a guideline for developing social capital of the community and creating ready-made herbal foot bath products. To help reduce numbness in patients with diabetes and chronic hospital patients in other groups.

Suggestions for the next study

1. There should be comparative research between finished herbal foot bath products and boiled herbal foot baths. in the same period in diabetic patients with foot numbness

2. The social costs in that community should be taken. Come to develop a form of a product that is convenient for a variety of applications

3. There should be research on soaking hands and feet with herbal products for patients with numbness with various diseases. that is not just diabetes

4. There should be comparative research between finished herbal foot bath products to reduce foot numbness in diabetic patients with warm water. using the same sample group same duration to test the effectiveness of the product

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