

## Development Model for Diabetic Patients Using *Isarn* Local Wisdom Food Eating Habits

<sup>1</sup>Chomanart Plaengmarn, <sup>2</sup>Wirat Parnsila and <sup>3</sup>Paiboon Boonchai

<sup>1</sup>Research Institute of Northeastern Arts and Culture, Maha Sarakham University,

<sup>2</sup>Faculty of Medicine, Maha Sarakham University,

<sup>3</sup>Faculty of Study, Maha Sarakham University, Kantharawichai District,  
Maha Sarakham 44150, Thailand

**Abstract:** Food consumption is the most important factor in the prevention and treatment of diabetes. Eating healthy foods and receiving nutrients from all food groups is the key to diabetes prevention. The task of controlling ones diet to combat diabetes is difficult for many patients. The food restrictions, regulated activities, modern medical practices and expenses for treatment have burdened both patients and their spouses. *Isarn* local wisdom food eating habits and treatment is an option that is practical and suitable for diabetes treatment. Thai foods, especially indigenous Northeastern Thailand or *Isarn* dishes can help prevent and treat diabetes. *Isarn* foods are low in fat and full of nutrients. There are also herbal remedies which are gaining popularity and scientific research. But relying on food diets and local remedies alone is not enough to provide a complete solution to care and treatment. Modernization and hurried lifestyles have limited the amount and variety of natural resources and diversity of foods. But the unity of community members and the support of government agencies combined with *Isarn* local wisdom has resulted in the development of treatment models for diabetes. The developed models include guidelines for The Individual, Group and Public Models. Supporting activities have also been created to educate, expand and exchange the knowledge, facts and treatment options to diabetic patients and their communities.

**Key words:** Diabetes, treatment, local wisdom, indigenous knowledge, Northeastern Thailand, *Isarn*

### INTRODUCTION

The frequent change of economics and globalization has influenced the flow of many western cultures into the communities of North Eastern Thailand or *Isarn*. This has directly impacted the way of life and altered how many Thai citizens carry out their daily lives. The food diet and eating habits has especially been affected. Food diets of rural communities in Northeastern Thailand in the past consisted of sticky rice, coarse rice, half-polished rice, large amounts of vegetables and fruits. The rush of modern lifestyles has now changed eating habits to favor meat, excess fat products, small amounts vegetables, minimal fruits and fast foods that have chemical preservatives, artificial coloring, scents and tastes. The change of food habits is the cause of many health problems and has increased chronic diseases such as Heart disease, Cancer, Hypertension and Diabetes. These diseases cause premature deaths and burden societies (Himathongkum, 2004).

The number of diabetic patients has increased significantly in developing nations in Asia. Surveys between 2003 and 2005 reported diabetic patients in Asia increased from 81-156 million people. Thailand's National health survey in 2004 revealed 5.32 million citizens diagnosed with diabetes (Department of Non Contagious Diseases, 2004). Thai urban communities and senior citizens have a higher rate and risk than rural communities and the younger generation.

Good diabetes treatment is similar to taking good care of your health. Healthy food diets based on receiving sufficient nutrients from all food groups, lots of fibers, foods low in sugar, low fat diets and regular exercise will keep you healthy and prevent diabetes (Khongsomboonwech, 1999). Eating habits is the key factor in preventing diabetes but many patients have trouble with controlling themselves. The important concept is to lower sugar, fat and not to gain too much weight (Umpaporn, 2007). This will help keep blood pressure at a healthy state.

This research was carried out to identify the food diets and habits of diabetes treatment in *Isarn* communities and to develop a model for effective treatment.

## **MATERIALS AND METHODS**

**Research area and methods:** Field research was carried out in Northeastern Thailand in 6 communities within the Provinces of Kalasin, NongKhai and Sisaket. Purposive sampling was applied to the selection of the research areas by analyzing the diabetes reports in Northeastern Thailand from 2002-2007. Kalasin Province had the highest diabetes related deaths. NongKhai Province was average and Sisaket Province had the lowest death ratio.

The research was conducted during October 1st, 2005-November 30th 2007. Structured and non structured questionnaires were applied to the interview of 162 individuals. The results, related observations, research papers were documented and analyzed by using Typology Analysis, Descriptive Analysis and Agreement Method.

## **RESULTS AND DISCUSSION**

### ***Isarn* local wisdom food eating habits**

**Food production and preparation:** *Isarn* communities in the past relied on food sources from rivers, mountains and forests. But modern trends have changed traditional ways and most households now purchase food and meals at the local markets, grocery's, food kiosks and mobile vendors. Foods found in the wilderness have decrease in amount, quality and variety. Sources of protein such as wild animals have almost totally disappeared and fisheries have been limited to few sources and species. Communities have been pressured and have adopted purchased food where it is convenient and manufactured.

The production of foods and dishes are in simple forms. Meals for diabetic patients don't require complex procedures and will involve boiling, soups and curries, steamed, roasted, baked and grilled. Most meals will require soups or stews with lots of broth. Fried dishes are not favored for treating diabetes. Meals are prepared with popular seasonings such as fish sauce, fermented fish, salt, pepper and lemon grass. Food seasoning powder (monosodium glutamate) is highly popular but not recommended for diabetic diets.

Most diabetic patients in Thailand are senior citizens and have been plagued by the illness for a very long time. Age and other disabilities have caused elderly patients to rely on family members for support and treatment. Female members of the family will usually prepare or purchase the

foods for their relatives. In several cases there is little help due to the fact that many family members have left rural communities to seek employment in urban communities in large cities. This abandonment of homes has left elderly family members to care for their selves.

**Restrictions:** Diabetic patients in the past didn't limit the amount and types of food that they consumed. They simply continued to eat popular local dishes and what was available. But awareness of diabetes has been widely communicated and it is common knowledge now that the proper diet is to lower foods and fruits that are sweet, foods that have a high quantity of starch, fat and coconut milk. Soft drinks and stimulating drinks are forbidden. If patients felt exhausted and fatigued they will eat sweets and high sugar foods immediately.

**Carbohydrate source:** Diabetic patients in *Isarn* eat sticky rice as the main source for carbohydrates. Current trends include the consumption of regular rice with sticky rice still being the preferred choice. The majority of patients acknowledge that sticky rice contains too much starch for diabetes, but rural communities are accustomed to it and will continue to consume it with caution.

**Protein source:** The main sources for protein in the past came from wild animals and fish. Other sources included shrimp, shellfish, crabs and insects. Beef and pork would be eaten during special occasions such as religious festivals and cultural events. In modern times the consumption of beef and pork has increased because it is convenient to purchase from local markets. Fish and other meats are still eaten but are mainly bought at the local markets instead of hunting and gathering from wild sources in the rivers and mountains. Seafood is currently becoming popular and consumed when available.

**Vegetables and vitamins source:** In the past, vegetables of every kind were consumed, could widely be gathered, harvested in the wilderness and forestry. Vegetables would be grown in gardens, fields and the varieties rotated according to the seasonal changes. Current trends have decreased the availability and consumption of local vegetables and fruits. Communities mainly shop for vegetables at local markets instead of growing and harvesting their own.

**Herbal medicine and plants:** Herbal treatment for diabetes was not known of in the past. Many patients prefer modern medical treatment but some have experimented with herbs and local remedies. The use of herbal treatment for diabetes is a new option for many communities. Most

had only considered herbal treatment as an alternative last option. But increasing advertisements and personal recommendations have made herbs and local remedies popular, indicating that patients are more open to other options of treatment (Thanapoom, 2000).

Herbal remedies and plants that are used in the treatment of diabetes that do not have published scientific research include *Borapehd* or *Tinospora crispa*, *Bai Kee Lehk* or *Cassod tree leaf*, *Bai Sadao* or *Siamese neem tree leaf*, *Fah Talai Jon* or *Andrographis paniculata*, *Yah Peking* or *Murdania loriformis*, *Yah Nahm Kahng* or *Drosera*, *Pae Tum Pueng* or *Gynura procumbens*, *Yah Nahng Daeng* or *Bauhinia strychnifolia*, *Pla Lai Puak* or *Eurycoma longifolia*.

Herbal remedies and plants that have been researched but do not have published scientific research include *Bai Nguak Pla Moh* or *Acanthus ebracteatus leaf* (Weerasing, 2006), *Kai Tai Bai* or *Phyllanthus amarus* have been used to treat diabetes.

Herbal remedies and plants that have published scientific research include *Bai Taeu* or *Pandanus odoratissimus* in which their roots were extracted to treat diabetes (Vichuda and Saengawut, 2004), *Tumlung* or *Coccinia grandis* (Venkateswaran and Pari, 2003). *Mara* or *Momordica charantia fruit*, *Pluak Tohn Noi Nah* or *Anone squamosa tree bark* can be extracted to treat diabetes (Shirwaikar *et al.*, 2003).

**Development plan for diabetic patients in Isarn:** *Isarn* local wisdom food eating habits is the option that is practical and suitable for diabetes treatment. Indigenous *Isarn* dishes are nutritious and low in fat. They require minimal processing procedures, conveniently available and are low in cost. But the indigenous local wisdom of food diets alone is not enough to complete the treatment. Group discussions, interviews and questionnaires from diabetic patients, spouses, nurses, doctors and community workers, related to the care and treatment of diabetes have together developed a diabetes treatment model for their communities. The model combined with indigenous *Isarn* local wisdom food eating habits has created a holistic approach to diabetes treatment. Three models have been developed and applied to the 6 rural communities under the research. The guidelines and activities for these models are summarized in the study.

**Individual diabetes treatment model:** This Model is applied to diabetic patients of two groups. The first are patients that have someone to nurse them. The second are individuals that have to look after themselves. Guidelines and activities that should be applied are summarized below.

- Diabetes knowledge awareness classes and training. These courses should be performed by the community's local clinic centers. Content of knowledge should include local foods and dishes that are approved and recommended for diabetic patient and the restrictions and limit of unhealthy foods and substances.
- Creation of a healthy environment by procurement of indigenous healthy foods for diabetic patients.
- Continued follow up of patients, house calls and close inspection of local food practices by community leaders and those who minister to diabetic patients.
- Diabetic individuals that have to rely on themselves must be supported by regular allowances funded by the local community services or sub district management offices.

**Group diabetes treatment model:** This Model is for diabetic patients that are able to participate with their local diabetes association or group within their communities. Weekly group activities should be organized for at least 1 day duration without overnight stay. The group gatherings should include the following activities.

- Local community clinic's office should organize and broaden diabetes knowledge by providing information, knowledge and health information regarding diabetes. It will provide patients and their spouses with information and up to date awareness of the proper foods and treatment being developed.
- Organized speeches, lectures and debates should be organized by community leaders and management offices to exchange knowledge and ideas regarding better treatment and care for local diabetic patients.
- Diabetes group patients should engage in regular listening to sermons and Buddhist preaching at the local community temples and monastery.
- Study trips should be organized to visit and exchange ideas with other groups in other community's.

**Public diabetes treatment model:** This model should be structured and applied as a broad approach to inspire and create public awareness within the groups of diabetic patients and community members:

- Public broadcast and advertisement of helpful diabetes information.
- Nutritious food market day should be organized by the cooperation of the community offices and health clinic.

**Promotional and supporting activities:** Are necessary for continued development of current and future diabetes treatment guidelines.

- Local demonstrations of healthy food preparations and food choices should be organized by the community's local hospital.
- Local community management offices and sub district branches should participate in donations for food procurement for destitute diabetic patients and their spouses.
- Local community leaders and organizers should promote the harvesting of indigenous vegetables and fruits for family consumption.
- Community health organizers should organize patients into groups, associations and networks of cooperation.
- The community and health organizers must create a local committee to handle diabetes treatment and health care issues.
- Organized daily exercises by diabetic patients should be organized.
- Random searches for diabetic patients by focusing on high risk groups and senior citizens should be initiated and maintained on a regular basis.
- Hospitals and clinics should create treatment services that can reach out to all areas of the community in both rural and urban communities.
- The community and sub-district management offices should provide ambulances and transportation within the community to hospitals.
- The community should be provided with exercising equipment and an area to carry out recreational activities.
- Weight and height scales should be made available to the public.

## CONCLUSION AND RECOMMENDATIONS

The study of development models for diabetic patients using *Isarn* local wisdom food eating habits directly benefits patients. *Isarn* foods and herbal remedies can be used to provide good mental and physically treatment. It can also reduce the high cost of modern medicine. Research analysis has shown that the most effective and successful way for diabetes treatment is to combine the local wisdom of good food habits and the unity and involvement of the community. The practical treatment of diabetes by using *Isarn* local wisdom food eating habits can be applied to the daily lifestyles of

all people. The treatment model can be applied to individuals, groups, rural and urban communities.

The results of this study will greatly benefit other rural and urban communities. But the treatment model and guidelines must be re-evaluated and adjusted to serve each community more effectively. Continued research should be undertaken with the acknowledgement that all parties and organizations within that area must be included in the research process. All stages starting from problem searching, planning, implementation and evaluation should include the entire group of people's input and ideas.

This research was accomplished under the restraints of cultural diversification. Therefore researchers should emphasize and understand the local culture. This can be achieved by studying the local customs such as language, communication, clothing and eating customs.

Continuing studies should be pursued to research and determine the appropriate diet for diabetic patients, by studying local dishes, calorie measurements, nutrition measurements and the daily routines of diabetic patients. Scientific research into indigenous herbal plants and remedies of *Isarn* should be supported and backed by scientific and medical data, analysis and openness.

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