

Health Belief Model about Diabetes Mellitus in Thailand: The Culture Consensus Analysis

Tanaporn Ratanasuwan, MD*,
Saowanin Indharapakdi, MD*, Rumpung Promrerak, B Nursing*,
Tanes Komolviphat, B Econ**, Yaiwan Thanamai, MD*

*This study was funded by Department of Medical Services Research Fund for the year 2003,
the Ministry of Public Health, Thailand*

** Internal Medicine Unit, Lerdsin Hospital, Department of Medical Services, Ministry of Public Health*

*** Nursing Unit, Lerdsin Hospital, Department of Medical Services, Ministry of Public Health*

*** The National Statistical Office, Ministry of Information and Communication Technology Thailand*

Background: Diabetes is a chronic disease, which requires patient participation. The outcome of treatment depends on the patient health belief model (HBM) and illness perception.

Objective: To evaluate the HBM and illness perception in diabetic patients by culture consensus analysis model.

Material and Method: Fifty diabetic patients were randomly selected at the out patient diabetic clinic from 4 hospitals, Maharaj Lampang hospital, Maharaj Nakorn rachasrima hospital, Hadyai hospital, and Lerdsin hospital to represent 4 regions of Thailand. Data from each patient was collected by using questionnaire. Anthropac version 4.98 was used to do consensus analysis

Results: Two-hundred diabetic patients from four political regions were assessed. Only Songkla culture showed a diabetes health belief pattern at the eigenvalue ratio at 3.8 and competency score at 0.72 ± 11 (mean \pm SD). This pattern was created because Songkla had more diabetes knowledge sources compared to other regions ($p = 0.01$). The ability of Songkla member to fit in the group was not related to any medical and socioeconomic factor ($p > 0.05$). The authors postulated that past experience or culture might determine this. Songkla diabetes beliefs were described and compared to biomedically correct information. The treatment process based on HBM and illness perception concepts were also discussed. The result of the research led to a Lerdsin diabetes self help group in the hospital.

Conclusion: From this study, Thailand does not have HBM about diabetes mellitus. Only the Songkla community does. Past experience and culture might determine the pattern of HBM in this community.

Keywords: Health beliefs, Diabetes mellitus, Illness perception, Culture consensus

J Med Assoc Thai 2005; 88(5): 623-31

Full text. e-Journal: <http://www.medassocthai.org/journal>

Diabetes is not a pure medical problem⁽¹⁻⁵⁾. The outcome of disease depends on patient participation⁽²⁻⁴⁾. Disease knowledge is one factor predicting patient adherence and glycemic control. Despite that knowledge, their health belief model (HBM) and illness perception determine their behavior⁽²⁻⁸⁾. When patient HBM and illness perception do not match with doctor biomedical correct information, the chances of patient cooperation are small^(2,9).

Correspondence to : Ratanasuwan T, Internal Medicine Unit, Lerdsin Hospital, Department of Medical Services, Ministry of Public Health, Bangkok 10500, Thailand.

Given that the South East Asian diabetes prevalence is increasing, it is surprising that Thai diabetes HBM is under investigated. One problem is that psycho-social health research needs a large number of subjects. The other problem is the difficulty to draw conclusions and compare between groups.

The culture consensus model is a semi-quantitative semi-qualitative analysis, designed by Weller et al⁽¹⁰⁻¹³⁾. The model is based on the concept of the British jury justice system in the court of law. The investigator resembles a counselor. Diabetes, the topic of interest, is the defendant while the parti-

cipants are the jury. Each opinion from the jury is calculated to find out if there is a consensus pattern about diabetes or not. In this way different opinions from different sets of jury can be compared.

The author studied Thai health belief from four cultures to answer four questions. One, Does Thailand and each part have the pattern of HBM? Two, If they do, how homogenous is the belief? Three, What factors determine their beliefs? Four, How are the health beliefs described?

Material and Method

Lerdsin Health Belief Questionnaire

The questionnaire appropriate for all four communities was developed in 2 steps. First, the authors interviewed convenient samples of 5 diabetes patients from each region with free-listing, open-ended questions. The theme of the questions contained 4 topics of interest: Who is susceptible? What is the cause? What are the signs and symptoms? What is the treatment? Items mentioned by at least 10% of the respondents were included in the final questionnaire. Then the authors included the important items from Cornell Medical index and Thai league diabetes education manual to complete all aspects of diabetes and chronic disease. Then the items were rewritten into questions with 3 answer keys: yes, no, and do not know. To lower the chance that the participants may answer the question by guessing, 50% of the questions were positive and 50% were negative⁽¹⁴⁾. Participant's demographic data which were age, sex, type of diabetes, duration of diabetes, income per month, years of education and items of sources of diabetes knowledge (radio, television, magazines, newspapers, hospital classes, doctors, friends or neighbors) were collected.

Study population

Fifty diabetic patients were randomly selected at the out patient diabetic clinic from 4 hospitals, Maharaj Lampang Hospital represented the North, Maharaj Nakorn Rachasrima Hospital represented the North-East, Hadyai Hospital represented the South and Lerdsin Hospital represented the Central region. The inclusion criteria for the participants were being diabetic, able to communicate, understand the questions well, and voluntary informed consent. Four interviewers were trained for 2 days to learn detail and how to complete questionnaire. These four interviewers were tested for consistency by interviewing 5 pilot patients. They got 100% consistency from

these 5 patients. Then each study patients from 4 hospitals were interviewed by one of these interviewers personally. The questions which the patients could not respond to were marked "do not know".

Statistical analysis

Consensus analysis was used to evaluate the aggregation of answer to each question. There was a single pattern of belief only when the eigenvalue ratio $> 3^{(10)}$. If any community achieved this pattern, the competency score was calculated. The competency score is the score that determines how each participant has the same belief as the group. If the consensus is large, the competency score will be close to 1. Average competency score and SD of each community were compared to estimate the homogeneity of belief. Individual competency scores were correlated with age, sex, type of diabetes, duration of diabetes, income per month, years of education and number of sources of diabetic knowledge to determine if any factors were associated with health belief. The characteristics of the participants of 4 communities were compared by ANOVA. Anthonpac version 4.98, Columbia, Analytic Technologies, USA, 2001 was used to do the consensus analysis. ANOVA and correlation were done by SPSS software.

First, the author found out if there were unique patterns of diabetes belief by using consensus analysis. Second, the author saw how homogenous the belief was by looking at the competency score in each group. Third, the patient characteristics were correlated to see which factors affected the creation of beliefs. Finally, each belief was analyzed one by one to see the different views between doctor and patient.

Each hospital ethical committee approved the research protocol. The research was supported by Department of Medical Service, Department research fund for the year 2003, the Ministry of Public Health, Thailand.

Results

The final questionnaire contains 117 questions. There are 9 in the susceptibility domain, 26 in the cause domain, 49 in the sign and symptom domain, and 33 in the treatment domain. The total of 200 patients were interviewed, 50 at each site.

Table 1 shows patient characteristics in the four regions in mean \pm SD. The average age of the patients is 59.1 ± 11.7 years. Most have diabetes type 2. Mean diabetes duration is 8.3 ± 7.8 years. Average

age at onset of the disease is 50 years old. Oral hypoglycemic drug is the main treatment. At the same time 20% of the patients have experienced herb and traditional medicine (data not shown in the Table 1). The education of the patients is low at 5.8 ± 6.8 years and also is the average income per month at $2,314 \pm 4,448$ baht. Most basic patient characteristics were not different among the four regions, except that Songkla patients have more diabetic knowledge source than other ($p = 0.04$).

Table 2 compares the patients' characteristics between Songkla and three other regions by t-test. The authors grouped Nakorn Rachasrima, Lumpang, and Bangkok together since participants in these areas have less diabetes knowledge. The results supports the authors' first analysis that age, duration of diabetes, income per month, years of education were not different between groups. Only the amount of diabetes knowledge source in the Songkla group is more significant ($p = 0.01$).

The eigenvalue ratios of Thailand, Lumpang, Nakorn rachasrima, Bangkok and Songkla are 1.7, 2.56, 1.2, 2.34, 3.8 respectively. This means that Thailand, Lumpang, Nakorn Rachasrima and Bangkok culture

did not meet the criteria for using the model (the eigenvalue ratio should more than 3:1 to fit the model)⁽¹⁰⁾. Only Songkla culture achieved the concensus about diabetes. In other words it can be said that, patients in Songkla culture tend to have the same pattern of belief about diabetes, while others have not.

So the first question, do Thailand and each part have the pattern about diabetes is answered. Thailand does not have a diabetes belief pattern. Neither Lampang, Nakorn Rachasrima nor Bangkok have a diabetes belief pattern. Only Songkla has.

How strong or homogenous the Songkla belief is can be judged by their score. The group average Songkla competency score is 0.72 ± 0.11 . Though the number is not that outstanding, the SD at 0.11 points that the aggregation is very good.

Considering Sonkla alone, the authors are interested to find out what quality of members makes this culture unique. Surprisingly, the correlation analysis between each Songkla patient competency score and patient characteristic revealed that, age, sex, diabetes type, diabetes duration, income, education and amount of diabetes knowledge source did not affect their competency score.

Table 1. Patients' characteristics

	Bangkok	Nakornrachasrima	Lumpang	Songkla	Total	p-value
No. of subjects	50	50	50	50	200	
Male: Female	11:39	19:31	20:30	18:32	68:132	
Age (years)	60.3 ± 9.7	60.8 ± 11.7	57.3 ± 13.3	58.1 ± 11.9	59.1 ± 11.7	NS
No. of insulin usage	10	8	8	11	37	
Diabetes duration (years)	10.8 ± 10.7	8.3 ± 6.7	6.6 ± 6.4	7.4 ± 6.0	8.3 ± 7.8	
No. of education (years)	5.6 ± 4.5	7.5 ± 1.0	5.5 ± 7.3	4.5 ± 3.1	5.8 ± 6.8	
Income per month (baht)	1592 ± 4389	3710 ± 6090	1908 ± 3268	2012 ± 315	2314 ± 4448	
No. of DM education sources	1.0 ± 0.9	1.3 ± 1.0	1.0 ± 0.5	1.5 ± 1.4	1.2 ± 1.0	

p-value (By ANOVA, there was no statistical significant difference in age, education, income, diabetes duration among patient from 4 regions. $p > 0.05$, except number of diabetic knowledge source in Songkla more than other regions, $p = 0.04$)

Table 2. Comparison of patients' characteristics between Songkla and other regions

Variables	Residence	N	Mean	SE	p-value
Age	Songkla	50	58.06	0.95	0.47
	Others	150	59.48	1.70	
No. of education year	Songkla	50	4.50	0.44	0.12
	Others	150	6.20	0.62	
Income per month	Songkla	50	2012.24	450.90	0.59
	Others	150	2411.89	839.48	
DM duration (years)	Songkla	50	7.42	0.85	0.37
	Others	150	8.59	0.68	
No. of DM education source	Songkla	50	1.53	0.21	0.01
	Others	150	1.09	0.07	

Table 3. Diabetes beliefs in susceptibility domain and causes domain of patients in Songkla

Domain	Eigenvalue ratios
Susceptibility	
Everybody can have diabetes	11.5
Women can have diabetes more than men	3.3
Cause	
Obesity	24.0
Not taking care of health	24.0
Starch and sweet diet	15.6
Fatty diet	11.5
Exercise can prevent diabetes	7.1
Swinging mood and stress	6.0
Weakness of the body	6.0
'Pid Pee' does not cause diabetes	5.0
Hypertension	4.4
God does not give diabetes	3.9
Others illnesses	3.8
Dysfunction of pancreas	3.7
Does not take all food groups	3.4
Working hard does not cause diabetes	3.1

Table 3 showed the health belief in susceptibility domain and cause domain. And Table 4 revealed health belief in signs and symptoms domain and treatment domain. One can consider how homogenous each belief item were by eigenvalue ratio. The belief which eigenvalue ratio > 10:1 provided strong consensus support. The main findings were summarized below.

In susceptibility and cause domain, the Songkla belief pattern is; everyone can have diabetes but women are at more risk than men. People get diabetes because they are obese and negligent about their health. Carbohydrates and fatty meals can induce the disease.

In the sign and symptom domain, Songkla belief pattern is; diabetes damages the eyes. The signs of disease are delayed wound healing, palpitation when hungry and noticing ants attracted by patient urine. Diabetes induces stress, dizziness, weight loss and kidney damage.

In the treatment domain, Songkla belief pattern is; diabetic patients should take care of their diet. Fish, non-sweet fruit and vegetables are preferable. Avoid starch and sweets. Durian is totally forbidden. Patients should exercise and control their weight. Normal blood pressure is also as important as normal blood sugar. Prevention of wounds is essential, especially feet, if it occurs you should see a doctor immediately.

Songkla responses to questions mentioning *insulin* in the susceptibility domain, cause domain and

treatment domain results in do not know for 20%. If including responses from 4 regions the number is increased to 54.7%. One must accept that "do not believe" is not the same as "do not know".

Discussion

Treating diabetes is difficult because the doctor - patient points of view are always different⁽¹⁻⁵⁾. The patient views diabetes as an illness while the doctor views diabetes as a disease⁽¹⁴⁾. Illness, is the net effect of personal past experience, family participation, social class interaction, education, occupation, and religion affiliation and etc⁽¹⁵⁾. The concept of patient illness commences immediately when one feels something is wrong. These, in the end, shape with the patient's culture to form the whole set of personal dysfunction. So saying that patients focus more on body and social well being than biomedical condition. Usually, this concept finalized itself before the patient first saw the doctor⁽¹⁵⁾.

On the other hand, doctor's diabetes aspects mainly focus on biophysical abnormality. Most doctors are interested in diagnosis and treatment. This discrepancy leads to treatment failure such as denial, non-adherence, and self-treatment^(3,4,6,8,15). Eliminating this gap could increase patient acceptance to medical treatment. The authors postulated that searching the patient's illness concept could give the answer.

HBM and illness perceptions are models developed to predict patient acceptance to treatment^(6,8). HBM was developed by a group of social psychologists at the US Public Health Service in the early 1950s. In summary, HBM explains whether patients will seek treatment or not, depends on the following issues; susceptibility, severity, benefits, and barrier.

Later on, the illness perception model was developed in 1997 to explain how patients cope with the disease^(6,8). These two models enhance each other by emphasizing how psychological factors are related to the outcome of disease^(4,8). It was the authors' intention to use both models to probe patients view of diabetes. The authors covered four regions of Thailand because Lerdsin Hospital has patients from all parts of the country.

Table 1 and 2 showed an overview. Four-region-diabetic clinics have the same patient pattern. Elderly women are the larger group of patients. This picture is inconsistent with the Inter-Asia study where male and female Thai diabetes prevalence of diabetes

Table 4. Beliefs in sign & symptom domain and treatment domain of patients in Songkla

Domain	Eigenvalue ratios
Sign & Symptom	
Diabetes can cause eye damage	50.0
Delayed wound healing	49.0
Palpitation when hungry	48.0
Urine attracted ant	46.0
Stress	24.0
Dizziness	11.5
Thinness	11.5
Kidney damage	10.5
Hypertension	9.0
Frequency urination	8.8
Excessive thirst	7.3
Sudden death	7.3
Mood swinging	5.3
No sign & symptom	5.0
Spotting skin	5.0
Loss of weigh represents advance diabetes	4.5
Excessive hunger	4.0
Sleepiness	3.9
Quivering	3.9
Acute heart disease	3.8
Cannot have children	3.8
Fatigue, easily tire	3.5
Cough	3.0
Treatment domain	
Prevention of wound is the most important	50.0
Healthy choice diet improves diabetes	50.0
Diabetic patient should take non sweet vegetable and fruit	50.0
Fish is suitable for protein source	50.0
Control hypertension is important	50.0
Gangrene and foot ulcer is early sign to see doctor	50.0
Exercise improves diabetes	49.0
Diabetic patient can not take durian	49.0
Diabetic patient should not take starch and sweet	49.0
Loosen weight helps diabetes	49.0
Diabetic patient can eat everything if he can control the amount	24.0
Diabetic patient must follow doctor advice strictly	23.0
Diabetic patient should not eat fatty diet	15.6
Diabetic patient should not delay meal	15.6
Bitter substances ie. borraped ¹ , mavang ² are good for diabetes	15.3
Herbs help diabetes	15.3
Diabetic patient who needs insulin injection has advance disease	9.0
Cutting salt in diet helps diabetes	9.0
Fa ta lai jone ³ improves blood sugar	8.8
Animal protein is bad for diabetes	4.0
Though regular visit to the doctor, the doctor can not cure our diabetes	4.0
Diabetic patients need more rest than others	3.9
Lin jure mushroom ⁴ cures diabetes	3.9
Outcome of diabetes depends on patient, not the doctor	3.5

¹ Solanum trilobatum, ² Tinospora crispa, ³ Andographis paniculata, ⁴ Ganoderma lucidum

is equal⁽¹⁶⁾. There are two possibilities here. One, it is customary behavior of health care seeking behavior for women to use this type of facility. Two, there are

chances that men are not interested in the modern health care system.

In the Zosla study about chronic disease it was found that an estimate of 70-90% of self-recognized illness are managed exclusively outside the formal health care system^(15,17). These sectors include self-treatment, religious practice, and heterodox healer providers. This pattern of behavior is consistent with the authors' finding that 20% of participants are using or have experience in traditional or herb medicine. This tells us that, men are a particular group of new case diabetic patient whom the authors should identify. Men could be the group that received delay treatment from modern health care.

While gender affects health care behavior, the financial condition could be another issue⁽¹⁷⁾. The present study group had an average low income of at two thousand baht per month. The large standard deviation shows that there is a wide range of socioeconomic status. Most have no source of social security. They depend largely on offspring income, which is not on a regular basis. Health care givers at this level should be aware that besides a different culture, socioeconomic status is another issue, that complicate human behavior⁽¹⁸⁾.

The patient characteristics in each region in Thailand in governmental hospitals are not different. In the present study, the profile showed a wide variety of education level and income. This group of patient is considered the most difficult to educate and treat. The only aspect that showed a difference is, Songkla can significantly more access to diabetes knowledge sources than others. Note that only two professional diabetes knowledge sources are hospital diabetes classes and from the doctors during treatment sessions.

Consensus analysis is the suitable method to analyze disease with different severity^(19,20). The analysis draw a conclusion when those opinions have no gold standard answer such as yes or no, right or wrong⁽¹⁰⁻¹³⁾. The analysis model has been used in many researches such as malaria⁽²¹⁾, Cancer^(22,23), AIDS⁽²⁴⁾, coronary heart disease⁽²⁵⁾ and diabetes⁽¹⁴⁾. The present study is the first study using this analysis in Thailand.

Consensus analysis calculates the vector of answer, represented by eigenvalue ratio, to conclude the net solution of answer. The key answer in the research could be two or multiple choices. The consensus shows when eigenvalue ratio is more than 3⁽¹⁰⁾. When fitting the model, it means the research group has created the consensus pattern of health belief. Group average competency score presented here is the strength of health belief. At the same time, indi-

vidual competency score presents how well each member in the group performs to fit in the group belief. The score can be used to compare between groups.

Consensus analysis is both a theory and a method^(10,13). As a theory, it specifies that any member of the culture, who express as an opinion the same way as the majority, has more knowledge than the one, who is not. As a method, it provides a way to uncover the culturally correct answers to a set of questions, in the face of certain kind of intra-cultural variability. Note that a culturally correct answer might not be the same as biomedical correct answers. This is the way the doctor can assess the extent of cultural knowledge of the patient in different disease aspects^(10,13).

The first step of consensus analysis revealed that Songkla is the only culture that has a pattern of belief. This is because people have more access to know about diabetes. Their knowledge sources are radio, television, magazines, newspapers, hospital classes, doctors, friends and neighbors. Non professional data are the main source. Though reliability is in doubt, the accessibility is easier, quicker and friendlier^(15,16).

The second step analysis revealed that sex, age, diabetes type, diabetes duration, treatment, income, education level and diabetes knowledge source, were not the factors that predict how well they fit in the group belief. Though they have more diabetes knowledge sources, the number of sources does not affect what to believe. The authors would like to postulate here that, what dictates Songkla to believe is abstract things that can not be evaluated by statistics. Those might be religions, culture, taboo, peer pressure and group experience. The health care provider should be aware that, these uncovered factors need to be respected. Any treatment method, which does not go along with these, can prevent patients following doctor advice. This is the gap between doctor and patient, which needs to be eliminated.

Below are health belief in four domains of diabetes. Belief, which is inconsistent with biomedical correct information, will be discussed along with other interesting points.

In the susceptible domain, the Songkla group believes that women are more susceptible than men. The picture in the clinic creates a pattern of belief. To prevent men being neglected, the authority should encourage diabetic screening to identify new cases, focussing on men. Data from Inter-Asia study points that newly diagnosed age is 54 ± 1.3 years old⁽¹⁶⁾.

In the cause domain, Songkla patients explain cause of diabetes by obesity and health negligence. Carbohydrate and fatty meals also achieved consensus at > 10. Patients does not explain disease pathogenesis with insulin at all. Twenty percent of the Songkla group do not know insulin. This issue is quite a problem. If participants from all sites were, more than half (54.7%) do not know insulin. Besides a unique health belief, the present study showed that the doctors of these facilities were facing the most difficult group of patients. Poor, dependant, low education and ignorant patients were the most challenging. The authority should develop an easy insulin education campaign, suitable for patient with grade 4 education to understand. Understanding insulin does not only helps to understand disease pathogenesis, but also help deliver the treatment.

In the cause domain, the authors need to clarify belief about mood swing and stress. Acute physical stress can precipitate hyperglycemia. How and to what extent chronic daily life stress can increase blood sugar is a question. Theoretically, the matter could explain through glucocorticoid and stress pathway⁽²⁶⁾. But there is no well-randomized controlled trial available.

“Pid Pe” spiritual culture is widely held in Northern Thai culture. It was picked up during in-depth interview. The authors do not anticipate this belief in Songkla culture. On the other hand, Buddhism karma does not have any effect in cause domain. Though missing to collect religious data, this could be a drawback of qualitative study.

Three non-preventable responses can occur when interviewing the subject⁽²⁷⁾. One, some subjects tend to answer what they think the interviewer expects to hear. Two, the subjects guess the answer. Three, the most ignorant subjects tended to answer “yes.”

At the eigenvalue ratio of four, Songkla patients link hypertension with diabetes. Considering biomedical fact, hypertension is more than a cluster of symptoms in metabolic syndrome than a cause⁽²⁸⁾. The majority of elderly diabetes has both conditions. Linking both together causes no harm to treatment.

In the sign and symptom domain, Songkla patients as well as all from four sites, unanimously agree that diabetes harms the eyes. The authors think that this phenomenon is the after math of World Diabetes Day last year. World Diabetes Day is the Ministry of Public Health project. The present study supports that regular and large scale concepts with

concise information could work to deal with patients in this type of facility.

Delayed wound healing and urine attracting ants are the popular Songkla beliefs. Compared to frequent urination and thirst, the two important abnormalities are not known by most. The authors noticed the process of learning that, any sign detected by sight is easier to perceive than others. This is another interesting point of patient learning experience.

The Songkla patients misinterpreted tremor symptoms. They believe that tremor when hungry is a natural diabetic symptom. The responses reflect that they have frequent drug induced hypoglycemia. Doctor and health care providers have to clarify this point to prevent serious complications. One should suggest self-treatment when hypoglycemia is encountered.

In the treatment domain, all patients agree that wound prevention and early professional help are very important. All believe that good food choice such as fish, vegetables and fruit are essential. Hypertension control is another topic they highly agree is equally as important as blood sugar control. No hyperlipidemia condition is mentioned in this research group.

Though diabetes is not a curable disease, regular visits to the doctor is essential for Songkla patients. Physician medical prescription is their first choice though some believe that herbs can help diabetes. Interestingly, Fah Ta Lai Jon (*Andrographis paniculata*) and Lin Jeo mushroom (*Ganoderma lucidum*) are the most popular. In this domain, there is no belief that is inconsistent with biomedically correct information. But not knowing about insulin is still a problem.

Belief is different from knowledge. Knowledge improves with intellectual study but beliefs do not⁽⁶⁾. The present result suggests that the Songkla belief might be an effect of experience or culture. The authors anticipate that in order to tune patient misconception, a diabetes self help group would be more suitable than a diabetes lecture class.

The benefit of cross-cultural study is to help practitioners to step out of a professional framework and recognize clinical reality and plurality⁽¹⁵⁾. The authors hope the present research would give the new perspective to diabetes management in Thailand. Although sophisticated medicine and devices are available, few patients meet optimal standard of treatment. Keep in mind that some health belief patterns might be an invincible barrier.

The fact is Thailand might not need more technology than the authors have right now. What the authors need is, to deliver what the authors have to people who need help. Managing diabetes needs a team effort. The most important member is the patient. The doctor-patient gap is needs to be eliminated.

In the future Lerdsin diabetes self help group, based on a health belief model and illness perception concept, will be improved in an out patient clinic. The impact of the group will be evaluated.

In conclusion, from this study, Thailand does not have HBM about diabetes mellitus. Only Songkla community has. Past experience and culture might determine the pattern of HBM in this community.

References

1. Kehoe KA, Melkus GD, Newlin K. Culture within the context of care: an integrative review. *Ethn Dis* 2003; 13: 344-53.
2. Brink SJ, Miller M, Moltz KC. Education and multidisciplinary team care concepts for pediatric and adolescent diabetes mellitus. *J Pediatr Endocrinol Metab* 2002; 15: 1113-30.
3. Rose M, Fliege H, Hildebrandt M, Schirop T, Klapp BF. The network of psychological variables in patients with diabetes and their importance for quality of life and metabolism control. *Diabetes Care* 2002; 25: 35-42.
4. Hoey H, Aanstoot HJ, Chiarelli F, Daneman D, Dorchy H, Fitzgerald M, et al. Good metabolic control is associated with better quality of life in 2,101 adolescents with type 1 diabetes. *Diabetes Care* 2001; 24: 1923-8.
5. Alijaseem LI, Peyrot M, wissow, Rubin RR. The impact of barriers and self-efficacy on self-care behaviors in type 2 diabetes. *Diabetes Educ* 2001; 27: 393-404.
6. Janz NK, Becker MH. The Health Belief Model: A Decade Later. *Health Educ Q* 1984; 11: 1-47.
7. Weinman J, Petrie KJ. Health Psychology. In: Gelder MG, Lopez-Ibor JJ, Andreasen NC, eds. *New Oxford Textbook of Psychiatry*. London: Oxford University Press, 2000; 1225-36.
8. Weinman J, Petrie KJ. Illness Perceptions: A New Paradigm for Psychosomatics? *J Psychosom Res* 1997; 42:113-6.
9. Heisler M, Vijan S, Anderson RM, Ubel PA, Bernstein SJ, Hofer TP. When do patients and their physicians agree on diabetes treatment goals and strategies, and what difference does it make? *J Gen Intern Med* 2003; 18: 893-902.
10. Weller SC, Mann C. Assessing Rater Performance without a "Gold Standard" Using Consensus Theory. *Med Decis Making* 1997; 17: 71-9.
11. Batchelder WH, Romney Ak. Test theory without answer key. *Psychometrika* 1988; 53: 71-92.
12. Weller SC. Shared knowledge, intercultural variation, and knowledge aggregation. *Am Behav Sci* 1987; 31: 178-93.
13. Romney AK, Weller SC, Batchelder WH. Culture as consensus: a theory of culture and informant accuracy. *Am Anthropol* 1986; 88: 313-38.
14. Weller SC, Baer RD, Pachter LM, Trotter RT, Glazer M, Garcia de Alba Garcia JE, et al. Latino beliefs about diabetes. *Diabetes Care* 1999; 22: 722-8.
15. Kleinman A, Eisenberg L, Good B. Culture, Illness, and Care. *Ann Intern Med* 1978; 88: 251-8.
16. Aekplakorn W, Stolk RP, Neal B, Suriyawongpaisal P, Chongsuvivatwong V, Cheepudomwit S, et al. The prevalence and management of diabetes in Thai adults. *Diabetes Care* 2003; 26: 2758-63.
17. Zola IK. Culture and Symptoms: An analysis at patient's presenting complaints. *Am Social Rev* 1966; 31: 615-30.
18. Maldonado MR, Chong ER, Oehl MA, Balasubramanyam A. Economic impact of diabetic ketoacidosis in a multiethnic indigent population: analysis of costs based on the precipitating cause. *Diabetes Care* 2003; 26: 1265-9.
19. Walsh ME, Katz MA, Sechrest L. Unpacking cultural factors in adaptation to type 2 diabetes mellitus. *Med Care* 2002; 40: 1129-39.
20. Weinman J, Patrie KJ, Moss-Morris R, Horne R. The illness perception questionnaire: a new method for assessing the cognitive representation of illness. *Psychol Health* 1996; 11: 431-46.
21. Ruebush TK, Weller SC, Klien RE. Knowledge and beliefs about malaria on the pacific coastal plain of Guatemala. *Am J Trop Med Hyg* 1992; 46: 451-59.
22. Chavez LR, Hubbell FA, McMullin JM, Martinez RG, Mishra SI. Understanding knowledge and attitudes about breast cancer. A cultural analysis. *Arch Fam Med* 1995; 4: 145-52.
23. Chavez LR, Hubbell FA, McMullin JM, Martinez RG, Mishra SI. Structure and meaning in models of breast and cervical cancer risk factors: a comparison of perceptions among Latinos, Anglo women, and physicians. *Med Anthropol* 1995; 9: 40-74.
24. Trotter RT 2nd, Weller SC, Baer RD, Pachter LM, Glazer M, Garcia de Alba Garcia JE, et al. Consensus theory model of AIDS/SIDA beliefs in four Latino populations. *AIDS Educ Prev* 1999; 11: 414-26.
25. Dressler WW, Bindon JR, Neggerw TH. Culture, socioeconomic status, and coronary heart disease risk factors in an African American community. *J Behav Med* 1998; 21: 527-44.
26. Cryer PE, Polonsky KS. Glucose homeostasis and hypoglycemia. In: Wilson JD, Foster DW, Kronenberg HM, Larsen PR, eds. *Williams Textbook of Endocrinology*. 9th ed. Philadelphia, Pa: WB Saunders, 1998: 939-71.
27. Weller SC, Romney AK. Systemic Data Collection. In: *Qualitative Methods*. Newbury Park: Sage Publications, 1988: 6-91.
28. Reaven GM, Role of insulin Resistance in Human Disease. *Diabetes* 1988; 37: 1595-603.

รูปแบบของความเชื่อเกี่ยวกับโรคเบาหวานในประเทศไทย: การวิเคราะห์โดยวิธี culture consensus analysis

ธนพร รัตนสุวรรณ, เสาวนินทร์ อินทรภักดี, จำพืง พร้อมฤกษ์, ธเนศ โกมลวิภาต, ไยวรรณ ธนมาย

ความเป็นมา: เบาหวานเป็นโรคเรื้อรังซึ่งผลของการรักษาขึ้นอยู่กับความร่วมมือของผู้ป่วย ผลของการรักษาของผู้ป่วยจะเป็นอย่างไรนั้น ขึ้นกับระบบความเชื่อเกี่ยวกับโรคและความตระหนักในความเจ็บป่วยของผู้ป่วย

วัตถุประสงค์: เพื่อประเมินระบบความเชื่อเกี่ยวกับโรค และความตระหนักในความเจ็บป่วยของผู้ป่วยเบาหวานโดยวิธี culture consensus analysis

วัสดุและวิธีการ: ผู้ป่วยเบาหวานจำนวน 50 ราย ถูกเลือกโดยการสุ่มจากคลินิกเบาหวานของโรงพยาบาลแต่ละแห่งจำนวน 4 แห่ง คือ โรงพยาบาลมหาสารคาม โรงพยาบาลมหาสารคามราชสีมา โรงพยาบาลหาดใหญ่ และโรงพยาบาลเลิดสิน เป็นตัวแทน 4 ภาคของประเทศไทย ข้อมูลผู้ป่วยถูกรวบรวมด้วยแบบสอบถาม จากนั้นประเมินระบบความเชื่อของผู้ป่วยด้วยโปรแกรม Anthropac version 4.98

ผลการศึกษา: ผู้ป่วยเบาหวานจำนวน 200 รายจาก 4 ภาคของประเทศไทยได้รับการประเมิน จากการศึกษาพบว่ากลุ่มผู้ป่วยจากจังหวัดสงขลาเท่านั้นที่มีรูปแบบความเชื่อเรื่องโรคเบาหวานโดยมี eigenvalue ratio เท่ากับ 3.8 และ competency score ที่ 0.72 ± 11 (ตัวกลางคณิตศาสตร์ \pm ค่าเบี่ยงเบนมาตรฐาน) รูปแบบนี้เกิดขึ้นคาดว่าเนื่องจากสงขลามีความสามารถในการเข้าถึงแหล่งความรู้เรื่องโรคเบาหวานมากกว่าภาคอื่น ๆ ($p = 0.01$) เมื่อพิจารณาความสามารถในการเกาะกลุ่มที่ทำให้มีรูปแบบความเชื่อ พบว่าปัจจัยทางด้านการแพทย์สังคม หรือ เศรษฐฐานะ ไม่มีผลต่อการเกาะกลุ่ม ($p > 0.05$) ผู้วิจัยตั้งสมมุติฐานว่าประสบการณ์ในอดีต หรือวัฒนธรรมของกลุ่มอาจจะทำให้เกิดรูปแบบความเชื่อนี้ ความเชื่อเรื่องโรคเบาหวานของผู้ป่วยสงขลา ได้นำมาเปรียบเทียบกับข้อมูลทางการแพทย์ที่ถูกต้อง และได้อภิปรายการดูแลผู้ป่วยโดยอิงกับระบบความเชื่อเกี่ยวกับโรค, ความตระหนักในการเจ็บป่วยของผู้ป่วย ผลของการศึกษานี้ได้นำมาสู่การจัดตั้งกลุ่มแลกเปลี่ยนประสบการณ์ผู้ป่วยโรคเบาหวานของโรงพยาบาลเลิดสิน

สรุป: จากการศึกษาครั้งนี้ ยังไม่พบระบบความเชื่อเรื่องโรคเบาหวานของประเทศไทย มีเพียงจังหวัดสงขลาที่พบระบบความเชื่อที่เป็นรูปแบบ ประสบการณ์ในอดีต และวัฒนธรรมของกลุ่ม อาจเป็นปัจจัยที่ทำให้เกิดระบบของความเชื่อของผู้ป่วยในจังหวัดสงขลา

Health belief model about diabetes mellitus in Thailand: the culture consensus analysis. Authors: Tanaporn Ratanasuwan Saowanin Indharapakdi Rumpeung Promrerk Tanes Komolviphat Yaiwan Thanamai. *J Med Assoc Thai* 2005 May;88(5):623-31. Internal Medicine Unit, Lerdsin Hospital, Department of Medical Services, Ministry of Public Health, Thailand. View Article. Download full-text PDF. Source. May 2005. Pancreas transplantation improves vascular disease in patients with type 1 diabetes. Authors: Jennifer L Larsen Christopher W Colling Tanaporn Ratanasuwan Tab W Burkman Thomas G Lynch Judi M Erickson Type 2 Diabetes Cultural Beliefs Model. The cultural consensus analysis found that respondents shared a single cultural belief model about all ve areas of inquiry: prevention, causes, symptoms, complications, and treatment of the disease. The eigenvalue of the rst. Table 5 Spearman correlation analysis results of cultural knowledge scores and socio-demographic variables. Diabetes mellitus (â€œdiabetesâ€) and hypertension, which commonly coexist, are global public health issues contributing to an enormous burden of cardiovascular disease, chronic kidney disease, and premature mortality and disability. The presence of both conditions has an amplifying effect on risk for microvascular and macrovascular complications.¹ The prevalence of diabetes is rising worldwide (Fig. 37.1). Both diabetes and hypertension disproportionately affect people in middle and low-income countries, and an estimated 70% of all cases of diabetes are found in these countries.^{2,3} In the United