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Life-long battle: Perceptions of Type 2 diabetes in Thailand

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Abstract

Background: The number of people in Thailand who have Type 2 diabetes has increased dramatically making it one of the country's major health problems. The rising prevalence of diabetes in Thailand is associated with dietary changes, reduced physical activity and health education. Although there is much research about health education programmes, the most effective methods for promoting sustainability and adherence to self-management among diabetics remains unclear.

Objectives: To examine the perceptions of participants in Thailand regarding Type 2 diabetes and to utilize the findings to formulate a model for patient education.

Methods: A grounded theory approach was selected and semi-structured face to face interviews and focus group were used to gather data from 33 adults with Type 2 diabetes.

Results: Five explanatory categories emerged from the data: causing lifelong stress and worry, finding their own ways, after a while, still cannot and wanting a normal life.

Conclusion: A new approach to patient education about Type 2 diabetes in Thailand is needed to give patients a better understanding, provide recommendations that they can apply to their daily lives, and include information about alternative medication. The Buddhist way of thinking and effective strategies enhancing self-efficacy should be applied to patient education to promote sustainability and adherence to self-management.

Keywords

Diabetes mellitus Type 2, Thailand, perception, patient education

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Introduction

Diabetes is a serious public health problem worldwide, 80% of diabetics aged between 20 and 79 years are Asians.[1] The prevalence of diabetes in Southeast Asia is predicted to increase from 46.9 million in 2000 to 119.5

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million in 2030, and will be the highest in all World Health Organization regions.[2] In Thailand, the number of diabetics who are hospitalized has increased from 18.86% of a total population (62,933,515) in 2007 to 24.67% of a total population (63,457,439) in 2009; the number attending out-patient departments has also risen from 0.65% in 2007 to 0.74% in 2009.[3] Consequently, the Thai government has to spend more of its health budget on public hospitals in order to provide health care services to diabetics.

The rising prevalence of diabetes in Thailand is associated with three factors. First, the development of urbanization caused a reduction in activity levels in urban areas as people adopted more sedentary lifestyles.[4] Second, cultural and social changes influenced people's food choices. Over 80% of the population do not eat enough fruit and vegetables and prefer fast food which commonly has a high fat and sugar content.[5] The consumption of high fat and sugar increases the prevalence of obesity which is one of many factors related to the development of diabetes. Obesity can cause insulin resistance which leads to elevated blood glucose levels.[6,7] Third, patient education is crucial to the management of diabetes. There are, however, many difficulties in delivering education for people with diabetes; current education programmes consist mainly of what professionals think participants need to know and seem to make little difference. A review of research articles published in nursing, medical and public health-related journals in Thailand (sources: Journal of the Medical Association of Thailand, Thai Health Science Journals, Thai Journal of Nursing Council, Thai Journal of Nursing Research, Medline and CINAHL databases) demonstrates that there are only a few research studies about participants' perceptions of diabetes and needs for health education in Thailand.[8]

The aims of this study were to examine people's perceptions of Type 2 diabetes and to utilize the findings to formulate a model for patient education about Type 2 diabetes in Thailand. In this article patients' perceptions of their Type 2 diabetes are presented.

Methods

A grounded theory (GT) approach was selected because there was little previous research. GT is used to construct theory where no theory exists or in situations where current theory does not sufficiently support/explain a set of circumstances. The explicit goal of GT is to develop theory from data that are systematically gathered and analysed through the research process.[9,10] The GT approach proposed by Strauss and Corbin[11] was selected to apply to this study because it is flexible and very rigidly prescriptive. This approach provides a well-defined framework for data analysis and emphasizes systematic coding techniques. Whilst there could be no absolute reality, grounding the work in the participants' views was strong because triangulation[12] was applied in this study by using multiple methods and sources of data collected at different times.

Data collection

Grounded theory method (GTM) requires high standards of data, both in depth and detail.[13] The data from 33 adult participants were collected over a period of six months using semi-structured face to face interviews and one focus group. Open-ended questions (see Table 1) were developed based on the Health Belief Model[14,15] and the information delivery method.[16] These questions allowed the researcher to amass an overall picture of participants' perceptions of Type 2 diabetes, their coping strategies, the impact of diabetes and barriers to self-management.

Twenty-seven participants were interviewed in a counselling room at the medical

Table 1. Interview guide.

- What it is like for you to have Type 2 diabetes?

Probes: Do you live with DM or does it live with you?
How does Type 2 diabetes affect your life?

- What does Type 2 diabetes mean to you?

Probes: What do you think causes it?
How does Type 2 diabetes affect your health?
How do you look after yourself?
What is your goal of Type 2 diabetes management?

- What do you find most helpful/unhelpful in dealing with Type 2 diabetes?

Probes: People or organizations? Sources or media?

- Does the health education programme help you? If yes/no – in what way?

Probes: How much details of Type 2 diabetes which you can remember after finish each session of health education programme?
Can you apply information that you get from health education programme to your daily life?
What you want to know more and in which way that you prefer?

Table 2. Demographic characteristics of participants.

Characteristics	$N = 33$
Age (years)*	58.67 (40–81)
Gender (*n*)	
Male	13
Female	20
Length of time with diabetes (years)*	7.94 (1–24)
Marital status (*n*)	
Married	26
Single	1
Widow	3
Separated	3
Educational level (*n*)	
Illiterate	2
Primary school	15
Secondary school	9
Bachelor's degree	7
Working conditions (*n*)	
Gainfully employed	11
Unemployed	14
Farmer	3
Seller	5

*Mean (range)

out-patient department. It took 30–45 min for each interview. Participants were given information about the project, the topic for discussion, confidentiality, anonymity, their right not to respond to any question and to withdraw from the participation in the study at any point without penalty. They were given an opportunity to ask or discuss unclear points with the researcher. This information was available in writing for those who could read and in audiotape for those who could not. Informed consent was obtained from all participants before the interviews began. By Thai law, people over 20 years of age can consent for themselves to participate in a research project. Additionally, in obtaining informed consent for illiterate people, it is normal practice in Thailand to use their fingerprints instead of signatures, along with the signature of a literate witness.

The same approach was used to obtain informed consent and to conduct a focus group with six volunteers. They were people who had Type 2 diabetes and who devoted their time to helping other patients cope with the disease. These volunteers encouraged them to take part in health education

activities, told them about their own experiences and passed on useful advice about various aspects of day to day life with diabetes.

Participants and setting

Purposive sampling was used to recruit participants using services at a medical out-patient department, of a large public hospital in the northern part of Thailand. It was recognized as a centre of a public hospital network covering three nearby provinces. Approximately 50 diabetics per day used services at the medical out-patient department. There was a health education programme for diabetics, but no diabetic clinic in this hospital.

The participants were all Thai adults, diagnosed with Type 2 diabetes for at least one year. They were able to communicate in the Thai language and to consent for themselves. Thirty-three participants (see Table 2) with age ranging from 40 to 81 years participated in this study. Eighteen participants were over 60 years of age. The length of time with diabetes ranged from 1 to 24 years. Twenty-six participants were married. Fifteen participants completed primary schools. The literacy rate among Thai population aged 15 and over was 94.1% in 2007, ranking third among 10 ASEAN member countries, after Brunei and Singapore.[17] In 2011, National Statistical Office[18] reported that the majority of Thai population aged 15 years and over (31.99%) completed secondary schools.

This study was approved by the Hospital Research Ethics Committee of the hospital setting, and Birmingham City University (UK) provided indemnity insurance.

Data analysis

GTM emphasizes steps and procedures for connecting induction and deduction through the identification of a broad research area with progressive focusing, simultaneous data collection and data analysis, constant comparison, theoretical sampling and saturation of categories.[19,20] The data analysis process in this study began after the first interview and continued concurrently with the data collection until no additional categories were being found or until saturation was reached.[21]

All data were collected using the Thai language and transcribed in Thai. Ten transcripts were translated from Thai into English as this study was reported in English. The accuracy of transcripts and translation was assessed by a nurse educator who is a skilled qualitative researcher and is able to communicate very well both in Thai and English. Translation was sufficient to show the development of interviews.[22] All data were processed through a spiraling process of transcribing, coding, memoing, categorizing, comparing and contrasting in various cycles until it became more abstract as a theoretical framework began to emerge. The accuracy of concepts and categories derived from analysis were ensured by a discussion with participants.[23] It was not possible to contact all participants but findings were fed back to a small group who agreed that the findings actually demonstrated what they had told the researcher.

Findings

Five explanatory categories emerged from the data – causing lifelong stress and worry, finding their own ways, after a while, still cannot and wanting a normal life. Each is discussed below.

Causing lifelong stress and worry

This category reflected participants' attitudes to Type 2 diabetes. Nine participants appreciated that Type 2 diabetes was a disease which could not be cured and they needed to take medication all their lives.

Five participants expressed the view that Type 2 diabetes was only the name of disease that they had. They did not have any idea what Type 2 diabetes was. Eighteen participants explained that Type 2 diabetes was a chronic disease related to high amounts of sugar in their blood/bodies. There was a common belief that diabetes would occur in somebody consuming a large amount of sweet food, fruits and desserts, and who did not exercise; consequently, a large amount of sugar accumulated in their bodies and caused Type 2 diabetes. Participants also claimed that they had Type 2 diabetes because their parents or relatives had had it or because body organs such as their liver or pancreas malfunctioned. Three participants believed that karma or kam, a supernatural power which no one can fight or change, might cause their Type 2 diabetes, because they could not identify causes and did not have any risk factors. One participant (P1, male, 51 years old) revealed his own view about the cause of his diabetes: 'Sometimes, I cannot sleep and ask myself why my body is different from other people's. Maybe I committed 'kam' (bad deeds) in a past life. As a result of these kam, I have diabetes'.

The participants reported various changes occurring in their bodies as a result of Type 2 diabetes. Symptoms such as blurred vision and palpitations were common problems. Nine participants experienced a feeling of weakness and tiredness which directly affected their ability to work and gain income. Those who had jobs explained that they could not work as hard as usual and had to take time off when they had medical appointments. This caused them to lose their income on that day. Five participants reported that they could not get good jobs, or needed to leave their previous jobs because of Type 2 diabetes, as many organizations still discriminated against people with medical conditions and were not willing to grant requests for a day off to see a doctor. The impact of diabetes on participants' work was disclosed in the following quotation:

> In the past, I worked as a driver delivering goods to customers. I had to quit my job after contracting diabetes because my employer did not want me to take a day off for my medical appointment. As you know, diabetics need to spend all day long at the hospital on the date that they have to see their doctors. My employer was not satisfied with my request and always got angry if I asked him for a day off. He wanted me to go to work because there were many goods that we needed to deliver to the customers every day. This situation made me feel uncomfortable, and finally I took a decision to leave. (P19, male, 54 years old)

Younger participants expressed worries about their own children. They worried that they might not be able to work and earn enough money to support their families in future. If they died prematurely from diabetes, no one would look after their children. They also worried that in the future their children might have diabetes as it was inherited by one generation from the previous one.

Thirty-one participants mentioned that Type 2 diabetes directly affected their lifestyle because they needed to change their eating and exercise habits. Four participants felt uncomfortable participating in social events because they wanted to control their diet and avoid drinking alcohol, and because of their feelings of weakness and tiredness. They felt sorry for themselves and their misfortune. They worried about themselves because Type 2 diabetes cannot be cured. They also felt stressful because they needed to control their diet and take medication all their lives. They heard from the public media that Type 2 diabetes was a severe disease, but they did not know how much it could harm their health. In the future, if they

became very ill they might not be able to work, or to work as hard as usual.

Finding their own ways

This category showed how participants' coped with Type 2 diabetes. Participants' self-management of Type 2 diabetes included taking medication, controlling diet, exercising, attending medical appointments, relieving stress and seeking for more information. After being diagnosed with Type 2 diabetes, 21 participants tried to take their medication regularly because they understood that this would lower the large amounts of sugar in their blood/bodies. Two participants thought that their Type 2 diabetes might be cured, if they took medication regularly. Twenty-nine participants ate less, avoided all kinds of alcoholic drinks, sweet food, fruits and desserts. Two participants also applied the Buddhist way of thinking – the middle path (a balanced approach to life or a mean between two extremes) to their diet control. They believed that they could be alive without consuming a lot of food. In other words, every day they ate to live, but they did not live to eat. Six participants released their stress and worries about Type 2 diabetes by applying the principles of Buddhism to their daily lives. They prayed and practised meditation as they believed that this helped them to be calm and conscious of their chronic disease. They also prayed to Buddha for their good health.

Twenty-one participants tried to exercise for as long as, and as often as they could by walking, running, using any exercise devices they could find such as treadmills, stationary bikes and moving their arms and legs in the way demonstrated to them by the healthcare professionals. Ten participants stated that they needed to see the doctors regularly because they needed to take medication for Type 2 diabetes all their lives, and they could get it free from the hospital. Four participants mentioned that they always attended their medical appointments, since they wanted to know what their blood sugar tests showed. They would be happy if their blood sugar levels were in the normal range. They would try harder to look after themselves, if they learnt that their blood sugar levels were higher than the normal range. Two participants reported that they came for their medical appointments regularly because the healthcare professionals might provide them with new information on how to manage Type 2 diabetes. This might help them to control their blood sugar levels better or help them to cure their diabetes.

Twenty-one participants tried hard to find more information on how to manage their Type 2 diabetes from various sources including books, television and radio programmes, internet, leaflets, newspapers and magazines. They also sought more information about diabetes from their spouses, children, relatives, family members, friends, neighbours and other diabetics whom they met at the hospital. Seventeen participants reported that the health education programme at the hospital was the main source of information and a place to meet other diabetics. The programme made them feel that they were located in their own society where they could talk, ask questions and share their own experience with others. A 57-year-old male participant (P6) recounted why he liked to join the health education programme at the hospital.

> I always join the group when I go to the hospital for my medical appointment. I think it is good to join the group and listen to the healthcare professionals' recommendations. I sometimes get new information that I have never known about before. The other point that makes me like joining the group is that it is a place where I can meet other patients who have the same disease and have more friends here. It is a good opportunity for an elderly person like

> me to meet many people who are of the same age. I feel good to go to the hospital because I know that I will have a chance to meet many of friends there. We always ask each other about health, life, and blood sugar levels.

After taking medication and reducing their intake of sugar for a while, participants realized that their blood sugar levels were still the same or decreased very slowly. It was very difficult for them to maintain the decrease in the amounts of sugar in their daily diet, and keep taking their medication regularly. They also heard from other people that there were alternative methods of decreasing the amounts of sugar in their blood/bodies. The most popular way cited by the participants was taking herbs (such as wild pepper, moringa) or traditional medication (a combination of many herbs) alongside modern medication. Sixteen participants had tried many kinds of herbs and traditional medication. Five participants disclosed that they did not tell the doctors or other healthcare professionals about taking this kind of medication in case they did not approve or even blamed them for doing so.

After a while

This category reflected how well participants could cope with diabetes. After practising self-management for a while, 10 participants still could not decrease their blood sugar levels as they had hoped. They continued to take medication and follow healthcare professionals' recommendations. They also kept seeking more information on how to manage the disease and new alternative ways to decrease high amounts of sugar in their blood/bodies from many sources. In contrast, four participants were successful in decreasing their blood sugar levels. They believed that their Type 2 diabetes was cured and that they did not need further treatment. They stopped pursuing self-management and lost contact with the hospital but returned if any abnormal symptoms such as dizziness, feelings of weakness and tiredness occurred. Nine participants appreciated that they still needed to obtain care but did not need to strictly pursue self-management and worry about diabetes if their blood sugar levels returned to normal. They would return to strictly pursue self-management again, if they found high amounts of sugar in their blood/bodies or realized many abnormal symptoms occurring in their bodies.

Ten participants realized that by looking after themselves not only did their blood sugar levels return to normal, but other symptoms such as blurred vision, palpitations were also relieved. These positive outcomes motivated them to continue taking care of themselves well; they got used to managing their diabetes and this became a routine. One participant taking part in a focus group (FGc, female, 71 years old) shared her own experience about the benefits of practising good self-management.

> I think I can control diabetes because I can now control my eating habit. I will not have sweet food if it is not necessary. In the past, I did not control my diet and had to use insulin injections. The doctor told me to inject myself with 50 units of insulin in the morning and 40 units of insulin in the evening. Additionally, I had to take more than 10 tablets every day. After I started to control my weight, my sugar decreased. I do not now have to inject myself with insulin. The doctor has also decreased the amount of medication that I have to take. Similarly, I do not have '*bao-wan-keun-taa*' [diabetic retinopathy - in Thai].

Still cannot

This category reflected participants' difficulties in coping with Type 2 diabetes. Two major barriers to success in living with diabetes were lack of motivation in

continuing self-management and difficulty in applying healthcare professionals' recommendations to their daily lives. Participants knew about the importance of looking after themselves well, but it was very difficult for them to keep practising good self-management. They revealed that after first being diagnosed with Type 2 diabetes, they were keen on practising self-management. Later on they became less interested ('*son-jai-noi-long*' in Thai), or some felt bored ('*buer*' in Thai) with controlling their diet, exercising, taking medication and attending medical appointments regularly. Their attention to follow the recommendations decreased as they felt that they were still fine, had no complications, and their blood sugar levels remained within the normal range, even though they did not strictly pursue good self-management. As time passed, they had difficulty in remembering all the details about how to manage Type 2 diabetes and such recommendations were not practical as they greatly differed from their ordinary daily lifestyles. One participant (P3, female, 61 years old) explained why she could not follow healthcare professionals' recommendations.

> After I took the feet test, the examiner recommended me to apply lotion onto my feet and massage them every day in order to stimulate blood flow. Furthermore, he told me that I should protect my feet by wearing socks. I think it is good to protect and look after my feet like that. It is very difficult for me to wear socks when I work in the garden. I sometimes slip on the ground because of wearing socks.

Wanting a normal life

This category was about disease management goals. The main objectives of self-management were to live a normal life, work as usual and not become a burden on other people. They also wanted to be as healthy as they had been earlier in their lives. Five participants tried hard to keep their Type 2 diabetes under control because they did not want to inject themselves with insulin. They appreciated that insulin injections were a sign of worsening diabetes and would be a great burden in their daily lives. They did not want the doctors or other healthcare professionals to blame them for high blood sugar levels as they had seen other people being blamed. The effect of putting blame on patients was expressed by one participant taking part in the focus group (FGb, male, 67 years old) as the following quotation.

> I frequently hear the doctors and nurses severely blame the patients who are not compliant. This situation makes me feel afraid and I am obliged to change my behaviour since I do not want the doctors and nurses to treat me like that.

Discussion

The majority of participants understood that Type 2 diabetes is a chronic disease related to high amounts of sugar in their blood/bodies. It could not be cured and they needed to take medication for it all their lives. Genetic defects, karma, malfunction of human body systems and bad eating habits were widely mentioned as causes of Type 2 diabetes. These findings were consistent with previous research in which participants attributed the cause to heredity, eating too much sugar, and being overweight in combination with supernatural factors such as karma, fate and witchcraft.[24–26]

Many participants in this study experienced feelings of weakness and tiredness. This finding supported the idea that fatigue is a pervasive and distressing complaint among people with diabetes. It is likely to be multidimensional, incorporating any combination of physiological phenomena such as altered blood glucose levels and physical complications of diabetes;

psychological phenomena, such as depression or diabetes-related emotional distress; or lifestyle factors, such as being overweight or physically inactive.[27] Type 2 diabetes caused participants in this study to change their eating and exercise habits. A few participants felt uncomfortable participating in social events because they wanted to control their diet and avoid drinking alcohol. The effects of Type 2 diabetes on participants' lifestyle were consistent with previous findings revealing that dietary habits were often modified.[28] In order to manage diabetes most effectively, participants seemed to isolate themselves from their friends or family members.[29] Many participants in this study felt sad and stressed on learning that they had Type 2 diabetes. Similar findings were found in another study indicating that the participants perceived diabetes as an illness that interrupted their ability to carry out everyday living tasks. This contributed to their social isolation and unsettled self-identity. The strict dietary regime, regular glucose monitoring and disabling complications, had a significant impact on health-related quality of life, and could be a major cause of depression.[30]

The participants' main concern about diabetes was to decrease the amounts of sugar in their blood/bodies. Their aims of self-management were to live a normal life, work as usual and not become a burden on other people. They also wanted to be healthy as they had been earlier in their lives. These findings were similar to other studies of diabetics' healthcare goals. The results of those studies demonstrated that remaining alive and healthy, maintaining independence in their daily activities and avoiding becoming a burden on their families were described as participants' life and health goals.[31,32] Avoiding insulin injections was also one of participants' self-management goals mentioned in this study. Similar findings were found in other studies demonstrating that fear of insulin injections motivated participants to follow their prescribed diet and exercise regime and to take good care of themselves.[33,34] In this study, participants also wanted to avoid blame from healthcare professionals. These findings were consistent with the other study indicating that most participants worried about going to see the doctor and finding out about their fasting blood sugar levels. Those participants worried that the doctor would scold them if their fasting blood sugar results were high.[35]

After being diagnosed with Type 2 diabetes, participants in this study looked after themselves by taking medication, controlling diet, exercising, attending medical appointments and releasing their stress and worries about Type 2 diabetes by applying the principles of Buddhism to their daily lives. These findings were consistent with the result of other studies indicating that people with diabetes used Buddhist teachings to deal with their stress. Buddhist practices appeared to increase participants' awareness of their illness, feelings and behaviour patterns.[36,37] Participants also tried hard to find more information on how to manage their Type 2 diabetes from various sources. These findings supported the idea that after the initial diagnosis with diabetes, participants needed early treatment and education.[38] Later on, they started to seek information about alternative ways of decreasing blood sugar levels. The most popular way suggested in this study was taking herbs or traditional medication alongside modern medication. Nearly half of participants had tried this, but some did not tell their doctors or other healthcare professionals. Similar findings were seen in other studies showing that most participants used herbal medicines to decrease blood glucose. Those participants had not informed healthcare professionals about their use of alternative medicine because they did not want to experience healthcare professionals' negative reactions.[39,40]

Despite information and self-management, many participants still could not decrease their blood sugar levels as they had hoped. They continued to try, follow healthcare professionals' recommendations, and seek more information and new alternative ways to manage the disease. Others who were successful in decreasing their blood sugar levels thought that their Type 2 diabetes was cured. These findings were consistent with previous studies on participants' knowledge and beliefs about diabetes. The participants in their studies believed that they had diabetes only when their glucose levels were high.[41,42] Many participants in this study perceived positive outcomes as benefits of looking after themselves well. This positive perception motivated them to continue practising good self-management. Similar findings were found in other studies of participants' views on Type 2 diabetes management and their glycaemic control. Those studies disclosed that the participants who felt they were in control of their Type 2 diabetes were more knowledgeable about their disease process. They felt that their disease could be controlled by effective self-care behaviour.[43,44] Participants in this study appreciated that they did not need to worry about Type 2 diabetes if they did not have any abnormal symptoms and their blood sugar levels were in a normal range. These findings were congruent with a previous study indicating that the participants were less likely to be concerned about their diabetes if they were feeling well.[45]

Two major barriers to participants' success in living with diabetes mentioned in this study were lack of motivation in continuing their self-management, and difficulty in applying healthcare professionals' recommendations to their daily lives. These findings were similar to the other study revealing that diabetics became increasingly disinclined or averse to self-management over the time since the progression of diabetes was often subtle and complications might not occur for years.[46] Moreover, previous studies also disclosed that diabetics faced difficulty in incorporation of healthcare professionals' advice about managing diabetes with their daily lifestyles.[47,48] The major barrier to diabetes education was the complexity of the content which healthcare professionals wanted to provide for participants.[49,50]

The findings in this study lead to recommendations for a new approach to patient education about Type 2 diabetes in Thailand. This should give participants a better understanding, provide recommendations that they can apply to their daily lives, and include information on alternative medication. The Buddhist way of thinking should be incorporated into patient education to promote sustainability and adherence to self-management. The effective strategies enhancing self-efficacy should be considered applying to patient education as it provides participants with the confidence to overcome barriers and the motivation for self-care behaviour.

Strengths and the limitations of this study

This qualitative study recruited a large number of participants during the six-month period of data collection. All participants came from different backgrounds and a wide range of experiences with Type 2 diabetes. It was very interesting to hear about the different ways in which participants coped with their disease. Additionally, GT facilitated exploration and understanding of people's views and experiences of Type 2 diabetes. Whilst there could be no absolute reality, grounding the work in the participants' views was strong because triangulation and the accuracy of content were applied in this study in order to decrease the probability of drawing erroneous conclusions and to validate the findings.

However, the majority of participants were over 60 years of age. This caused a

lack of diversity of perception about Type 2 diabetes. A new approach to patient education developed from these findings might lack an element of transferability to other age groups. Moreover, all participants in this study were Buddhists. The Buddhist way of thinking affected their thoughts and self-management. It would be very useful to hear more about how other religious beliefs (such as Islam, Christianity, and Hinduism) affected participants' coping with their diabetes.

Conclusion

This study examined the perceptions of participants in Thailand regarding Type 2 diabetes. Five explanatory categories emerging from the data developed the theory explaining the perceptions of participants regarding Type 2 diabetes in the context of Thai culture. Two main issues that emerged were that the Buddhist way of thinking played a major role in participants' coping with their disease, and also that herbs and traditional medication were widely used to decrease high levels of blood sugar and to cure Type 2 diabetes. The major barriers to participants' self-management were lack of motivation in continuing self-management, and difficulty in applying healthcare professionals' recommendations to daily life.

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Conflict of interest

None declared.

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