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คุณภาพบริการและความพึงพอใจการบริหารจัดการที่มีผลต่อความต้องการของสตรีที่ทราบผล

การตรวจเซลล์ปากมดลูกผิดปกติ: กรณีศึกษาโรงพยาบาลลำปาง

Service Quality and Satisfaction of Management toward Needs of Women's Experience after Hearing of Abnormal Pap Smear Result: Case study of Lampang Hospital

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บทคัดย่อ

การวิจัยในครั้งนี้มีวัตถุประสงค์เพื่อศึกษาคุณภาพบริการและการบริหารจัดการที่มีผลต่อความต้องการของสตรีที่ทราบผลการตรวจเซลล์ปากมดลูกผิดปกติ โดยศึกษาการเผชิญปัญหาและความต้องการการช่วยเหลือของสตรีที่มีผลการตรวจเซลล์ปากมดลูกผิดปกติ: กรณีศึกษาโรงพยาบาลลำปาง กลุ่มตัวอย่าง คือ สตรีภายหลังการทราบผลการตรวจหาเซลล์ปากมดลูกผิดปกติ ระหว่างเดือน มกราคม-มิถุนายน พ.ศ. 2555 เป็นการเลือกแบบเจาะจง เครื่องมือเป็นแบบสอบถาม วิเคราะห์ข้อมูลโดยใช้สถิติพรรณนาด้วยค่าความถี่ ร้อยละ ค่าเฉลี่ย ส่วนเบี่ยงเบนมาตรฐาน และการวิเคราะห์เนื้อหา

ผลการวิจัยพบว่าสตรีที่ทราบผลการตรวจเซลล์ปากมดลูกผิดปกติและเข้ารับการตรวจที่ห้องตรวจพิเศษรีเวช โรงพยาบาลลำปางส่วนใหญ่มีสถานภาพสมรส มีบุตรเฉลี่ยจำนวน 1-2 คน มีอายุระหว่าง 41-50 ปี การศึกษาส่วนใหญ่อยู่ระดับประถมศึกษา มีอาชีพรับจ้าง ค่ารักษาส่วนใหญ่ใช้สิทธิบัตรประกันสุขภาพ และมารับการรักษาที่โรงพยาบาลจำนวนมากกว่า 5 ครั้งต่อปี

ผู้รับบริการสามารถเผชิญปัญหาและมีความต้องการการช่วยเหลือของสตรีที่มีต่อผลการตรวจเซลล์ปากมดลูกผิดปกติระดับปานกลาง มีความต้องการข้อมูลเพิ่มเติมที่เกี่ยวข้องกับการตรวจมากที่สุดรองลงมาคือ ด้านการยอมรับผลตรวจของโรงพยาบาลระดับมากมีความวิตกกังวลระดับปานกลางและการเผชิญภาวะวิกฤติ โดยลำพังระดับปานกลางสำหรับความคิดเห็นด้านการบริการของทีมงานอยู่ในระดับมากที่สุดรองลงมาด้านเจ้าหน้าที่มีความพร้อมในการบริการและมีความเป็นกันเอง ด้านความพึงพอใจในการบริหารจัดการเจ้าหน้าที่เอาใจใส่ดูแลผู้รับบริการอย่างทั่วถึง เจ้าหน้าที่ทำงานอย่างเป็นระบบ และความสะดวกในการมาใช้บริการอยู่ในระดับมาก

คำสำคัญ: คุณภาพบริการ ความพึงพอใจการบริหารจัดการ ความต้องการของสตรี ผลการตรวจเซลล์มะเร็งปากมดลูกผิดปกติ

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กระบวนการจัดการครอบครัวที่ส่งผลต่อคุณภาพชีวิตของผู้ป่วยระยะสุดท้ายที่บ้าน:

กรณีศึกษาพื้นที่อำเภอเมือง จังหวัดลำปาง

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บทคัดย่อ

ความตาย เป็นกระบวนการที่มีความสำคัญต่อทั้งผู้ป่วยและครอบครัว การวิจัยเชิงปฏิบัติการแบบมีส่วนร่วมนี้มีวัตถุประสงค์เพื่อศึกษาประสบการณ์การดูแลผู้ป่วยระยะสุดท้ายที่บ้านในพื้นที่จังหวัดลำปางและกระบวนการจัดการครอบครัวที่ส่งผลต่อคุณภาพชีวิตของผู้ป่วยระยะสุดท้ายที่บ้านในพื้นที่จังหวัดลำปาง วิธีการศึกษาประกอบด้วย การสนทนากลุ่ม และการสัมภาษณ์เชิงลึก (In-depth interview) กลุ่มตัวอย่างจำนวน 20 ราย คือ ผู้ดูแลผู้ป่วยระยะสุดท้ายที่บ้าน คัดเลือกกลุ่มตัวอย่างแบบเจาะจง (purposive sampling) ในพื้นที่อำเภอเมือง จังหวัดลำปาง วิเคราะห์ข้อมูลด้วยวิธีการวิเคราะห์ประเด็นเนื้อหาพร้อม (Thematic Analysis) ผลการศึกษาพบว่า ผู้ดูแลผู้ป่วยระยะสุดท้ายมีประสบการณ์ในด้านการเปลี่ยนแปลงของอาการผู้ป่วย แบ่งออก 3 ระยะด้วยกัน คือ ระยะทรุด ระยะใกล้ตาย และระยะตาย โดยทั้ง 3 ระยะ มีระยะเวลาที่ไม่แน่นอน ขึ้นอยู่กับอาการของผู้ป่วย กระบวนการจัดการครอบครัวในการดูแลผู้ป่วยระยะสุดท้ายประกอบไปด้วย 1) การจัดการในระยะทรุด ได้แก่ การดูแลด้านกิจวัตรประจำวัน และการดูแลด้านจิตวิญญาณ 2) การจัดการในระยะใกล้ตาย ได้แก่ การยอมรับความตายที่จะมาถึง การสร้างบรรยากาศแห่งความสงบ การดูแลด้านจิตวิญญาณ การดูแลใกล้ชิดตลอดเวลาและการอยู่กันพร้อมหน้าของสมาชิกครอบครัว และ 3) การจัดการในระยะตาย ได้แก่ การจัดการด้านร่างกาย การจัดการด้านพิธีกรรม และการจัดการด้านทรัพย์สิน กระบวนการจัดการของครอบครัวผู้ป่วยระยะสุดท้ายที่บ้านมีความสอดคล้องกับแนวทางการดูแลผู้ป่วยระยะสุดท้ายแบบองค์รวมและเป็นการดูแลตามวิถีพุทธ เพื่อช่วยให้ผู้ป่วยได้พบกับการตายที่ดี

คำสำคัญ: กระบวนการจัดการครอบครัว, คุณภาพชีวิต, การดูแล, ผู้ป่วยระยะสุดท้าย, วิถีพุทธ

Abstract

Dying is a very important and meaningful process for the dying and family members. The objective of this participatory action research was to explore caregivers caring experience of dying patient and family management process of dying care on quality of life in the area of Lampang Province. The study methods were focus group discussion and in-depth interview. The study samples were 20 caregivers who provided caring for their dying relatives, selected by purposive sampling. Thematic analysis was used to analyze the data. The two main themes identified from the study were the caregivers experienced three stages of dying included stage of deterioration, stage of active dying and stage of death. Each stage of symptom was uncertain and had direct impact on caregiver experience. Family members were planned the management process for dying people consisted of 1) management of deterioration stage: daily living caring and spiritual

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การจัดการตนเองของผู้สูงอายุเพื่อเสริมสร้างคุณภาพชีวิตที่ดีด้วยกลไกการมีส่วนร่วมของกลุ่ม :

กรณีศูนย์ส่งเสริมสุขภาพผู้สูงอายุ วิทยาลัยพยาบาลบรมราชชนนีนครลำปาง

Self Management and Participatory to Enhance Their Quality of Life among Elderly Peoples of Aging Health

Centre: Aging Health Centre, Boromrajonani College of Nursing Nakornlampang

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บทคัดย่อ

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อศึกษาความคิดเห็นด้านการจัดการตนเองและการมีส่วนร่วมของผู้สูงอายุและแนวทางการจัดการตนเองของผู้สูงอายุเพื่อเสริมสร้างคุณภาพชีวิตที่ดีด้วยกลไกการมีส่วนร่วมของกลุ่มเป็นวิจัยแบบผสมวิธี กลุ่มตัวอย่างคือ กรรมการบริหาร และสมาชิก จำนวน 30 ราย เครื่องมือวิจัยคือแบบสอบถามและการเสวนากลุ่มสถิติพรรณนาวิเคราะห์ค่าร้อยละค่าเฉลี่ยและส่วนเบี่ยงเบนมาตรฐานวิเคราะห์เนื้อหาโดยเทคนิคการมีส่วนร่วม

ผลการวิจัยพบว่าระดับความคิดเห็นด้านการจัดการตนเองของผู้สูงอายุโดยรวมอยู่ในระดับดีโดยผู้สูงอายุให้ความสำคัญสู่กับประเด็นการเป็นคนมองโลกในแง่ดีการมีส่วนร่วมด้วยการเน้นความสนิทสนมช่วยเหลือหรือสนับสนุนในทุกกิจกรรม และแนวทางการจัดการตนเองพบว่ากรรมการบริหารและสมาชิกมีการวางแผนในการทำงานแบบมีส่วนร่วม การปฏิบัติตามวัตถุประสงค์ที่กำหนดไว้ ตามกิจกรรมเสริมสร้างสุขภาพชีวิตที่ดี ลำดับสุดท้ายมีการประเมินผลลัพธ์ที่เป็นรูปธรรม มีส่วนร่วมในการช่วยเหลือหรือสนับสนุนในการทำงาน

คำสำคัญ : การจัดการตนเองของผู้สูงอายุ , การมีส่วนร่วม , คุณภาพชีวิต

Abstract

The purposes of this study were to study the opinion level of self management of elderly people with group participatory mechanism and direction in self management of elderly people with group participatory mechanism in order to enhance good quality of life. This was mixed methodology research. The sampling group was managing director and 30 members. The research tools were questionnaire and group seminars with descriptive statistics to analyze mean, frequency and standard deviation and content analysis by participatory technique.

The outcomes of research revealed the opinion level on overall self management of elderly people was at good level by elderly people valued the importance of positive thinking, participating with acquaintance, assistance or supporting on every activities. The direction in self management revealed that managing director and members had work planning with participatory approach, performance as specified

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SPIRITUALITY AS DESCRIBED BY NURSING STUDENTS: A QUALITATIVE STUDY**Nongluck Promtingkarn, RN, MSN**

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Backgrounds: Spirituality is frequently described by nurses and nursing students as an important aspect of nursing practice; however, the meaning of spirituality is not often articulated in practice.

Purpose and Methods: This descriptive qualitative study explored how nursing students described the meaning and practices of spirituality. Ten third and fourth year nursing students were individually asked to articulate the meaning and practices of spirituality in their nursing practice and their own day-to-day living. Constant comparative analysis was used for data analysis.

Findings: Spirituality, according to the students, is something that can be felt but difficult to articulate as it is buried and engraved deep within the person's heart. It reflects "who you are", "who I am" or the individual person's self. The spirituality or the person's self is connected to certain beliefs, practices, people, beings and things. Despite inability to clearly distinguish psychological and spiritual states, students described spirituality as positive power. It is powerful in the sense that it gives positive energy and leads to positive actions such as motivation, inspiration, hope, happiness and strength.

Conclusion & Recommendation: Due to evidence of lacking spiritual care confidence among nursing students, nursing instructors should assist their students in establishing skills needed to explicate, recognize, express and respond to spirituality of their own and patients under their care.

Keywords: Spirituality, Nursing Students

Co-authors: Thaworn Lorga, RN, PhD

Conclusion. Health personnel working for children and the youth from multi-culture should concern with the need of community to build up peace as well as provide the equality and opportunity for every child especially vulnerable children

Key words: multi-culture, innovation for peace, unrest area, children's right

PROCESS OF SMOKING CESSATION AMONG THAI SMOKERS: A GROUNDED THEORY STUDY

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Backgrounds: Smoking is one of the leading causes of cerebrovascular diseases. Given the rising number of new smokers worldwide, the need for promoting smoking cessation is warranted. **Purpose and Methods:** This grounded theory study aimed to explain how successful and unsuccessful quitters of smoking underwent smoking cessation. Seventeen ex-and current smokers aged 52-79 years were interviewed through in-depth unstructured interviews and focus group discussions. Constant comparative analysis was used for data analysis. The process emerged as a theoretical code and was used to integrate the findings.

Findings: The process of smoking cessation consisted of three stages, namely, (a) Finding meaningful reasons to quit, (b) Declaring the intention to quit, (c) Facing the cessation, and (d) Successful cessation. The reasons to quit smoking included: health risks imposed by smoking such as cancers, hypertension; futility as expressed in the form of no benefits and financial loss and decreased work efficiency; stigmas from self, family and community; and loss of appetite. Declaring the intention to quit was presented in the form of informing the family and impulsive symbolical sign of breaking from smoking. During the cessation smokers faced physical and psychological signs such as fatigue, sleeplessness, irritations, and hunger for foods. They used replacements such as candy, seeds, pickled teas, and milk to relieve the craving. Some used tapering off techniques by reducing dose and number of cigarette as well as frequency of smoking. Smokers avoided places or groups of people where they could be tempted into smoking. Smokers with weaker impulses tended to fail for craving and returned to smoking; those with strong and meaningful impulses tended to succeed in quitting.

Conclusion & Recommendation: Better understanding of the process itself, barriers and facilitators in the process of quitting smoking can help smokers quit smoking successfully.

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Keywords: Smoking Cessation, Grounded Theory

FAMILY INFLUENCE THROUGH NEGATIVITY INFLICTIONS, SUASION, AND HELP (FINISH) FOR SMOKING CESSATION: A DESCRIPTIVE QUALITATIVE STUDY

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Backgrounds: Family support is a key to successful smoking cessation; however, there is limited evidence on how families from different cultures support their family members during the process of smoking cessation.

Purpose and Methods: For the purpose of instrument development, this descriptive qualitative study aimed to describe how family supports the smoking cessation of their relatives. Fifteen relatives of smokers and ex-smokers were interviewed using unstructured in-depth interviews and focus group discussions. Constant comparative analysis was used for data analysis.

Findings: Family influence emerged as a concept describing family involvement in the process of smoking cessation. It is comprised of three strategies, namely, negativity inflictions, suasion, and help. Negativity inflictions strategy includes stigmatizing and threatening to disown care responsibility. It is often the case that young children and grandchildren are asked by other family members to persuade smokers to consider stopping smoking. Help or support requires understanding of the process of smoking cessation, effective distance between smokers and family members and immediate attention to smokers' needs.

Conclusion & Recommendation: We found that family influence is a more complete concept to describe family's involvement in the process of smoking cessation. The FINISH questionnaire is being developed to measure such concept.

Keywords: Family Influence, Smoking Cessation

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Public knowledge of diabetes in Karen Ethnic rural residents: a community-based questionnaires study in the far north-west of Thailand

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Background and purpose: The public knowledge of diabetes is important for prevention of disease. This study aimed to evaluate knowledge of diabetes, risk factors, and the common warning signs of diabetes and complications among community participants in a rural Karen ethnic community.

Methods: Participants were asked to answer a questionnaire regarding their knowledge of diabetes, fasting blood glucose testing, blood pressure measurement, and body mass index (BMI) assessment were provided to the participants. The study was conducted at Thasongyang district, Tak province, Thailand.

Results: A total of 299 Karen rural residents were included in the study. The median age was 45 years and median fasting blood glucose was 88 mg/dL. The response rate to the questionnaires was 91.97%. Half of the participants knew diabetes is a noncommunicable disease needing lifelong treatment. Overall, one-third of the community participants could correctly answer the knowledge assessment questions regarding risk factors and common features of diabetes. Whereas the other two-thirds either gave a wrong answer or were "not sure". Female participants had poorer diabetes knowledge than the males.

Conclusion: The public knowledge of diabetes, as represented by this sample of the Karen ethnic community, is alarmingly low. There is significant gender difference in knowledge level. Culturally tailored and gender-sensitive diabetes health education interventions are urgently needed in this minority ethnic community.

Keywords: health education, gender differences, ethnic minority, diabetes, Karen

Background

Diabetes is a globally burdensome noncommunicable disease. Diabetes can cause acute and long-term complications, and is as well, a global risk factor for cardiovascular disease.¹ Lifestyle and behavior, as well as individual genetic predisposition, influence the risk of diabetes and prevalence in a community.² Public knowledge is the basis for lifestyle and behavior in a given community.³ Therefore, the knowledge particular to diabetes is a key determinant of the lifestyle of a community, and can discriminate those who are at risk from those who are free of risk.

Diabetes is increasingly prevalent in ethnic minority groups globally.⁴⁻⁶ Recently, Lorga et al⁷ reported that 16.7% of the Karen rural community had an abnormally high blood glucose level (≥ 100 mg/dL), and that there was a considerable proportion of prediabetic persons (13.04%) in a cross-sectional survey among the Karen minority. The Karen ethnic rural community along the Thai-Myanmar border is a hard-to-reach population for health promotion services. Karen people use their native language and

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most of the senior adult population in the community cannot read Thai script. This forms a barrier to health education provided by the national health program. Moreover, in a district like Thasongyang, the population pattern is very dynamic and unstable because of a large migration across the border. Karen people are indigenous to, and tend to stay along the Thai-Myanmar border such as area around Tak province. There is limited literature to guide the assessment of health literacy and knowledge of diabetes in such a community.

The objective of the study was to assess the knowledge of diabetes of the rural Karen residents, and compare the diabetes knowledge between male and female respondents.

Participants, setting, materials, and method

This analysis and article is the third publication generated from our study. The study design was cross-sectional survey. It was conducted from June 2011 to September 2011. The analysis was carried out in April 2012.

This study was approved by the ethical board of the Boromrajonani College of Nursing, Nakhon Lampang, Lampang, Thailand, and conducted with the verbal informed consent of participants. It was conducted in Thasongyang, which is a district in the far northwest of Thailand, by the narrow Moei river on the border of Myanmar. The participants were rural residents living in clusters of houses on the hill-tops. A total of 299 Karen adults participated in the survey conducted by convenience sampling. All participants were Thai citizens but most of the participants could not read Thai script. None had any prior known diagnosis of diabetes.

Questionnaires

Diabetes knowledge was assessed by a questionnaire that was developed by consensus between native researchers and researchers from the Boromrajonani College of Nursing Nakhon Lampang. The questionnaires were delivered in the Karen language by researchers speaking both Thai and the Karen language, and were completed by the interviewers.

Fasting plasma glucose

Fasting plasma glucose (FPG) measurement was preceded by overnight fasting for 8 hours before the test. FPG level was checked using venous blood samples of the participants. Those who forgot overnight fasting were excluded for examination of FPG. FPG examination was carried out at Thasongyang hospital laboratory.

Body mass index

Body weight and height were measured by the public health officers using a standard measuring scale. Body mass index was calculated by the ratio of body weight in kilograms divided by the square of the height in meters.

Blood pressure

Systolic and diastolic blood pressures were noted after two measurements taken 15 minutes apart. Blood pressure was measured by the community nurses with a sphygmomanometer.

Statistical analysis

Continuous variables were summarized as median, maximum, and minimum values, as the distribution was not normal. The nonparametric test for trend analysis was run by "nptrend" in Stata version 11 (Stata Corp, College Station, TX). "Yes," "no" and "not sure" answers in the questionnaires were recoded as categories in order to compare by rank-sum test. A correct answer was coded to be 1, and an incorrect answer, or the answer of "not sure," was coded as zero. Stata version 11 was used for data management and data analysis. Statistical significance was defined as *P* value less than 0.05, with a 95% confidence interval.

Results

The study had a 99.67%–100% response rate for measurement of the base-line parameters. Forty-one percent of respondents were male patients. The average age of the sample was 48 years. Average values of the measured parameters are shown in Table 1.

Response to questionnaires

The overall response rate was 91.92% for all the questions. We assessed the diabetes knowledge briefly in three parts: (1) general knowledge, (2) knowledge about the risk factors, and (3) knowledge about the symptoms, diagnostic signs, and complications of diabetes mellitus.

Table 1 Characteristics and response rate of the participants in the survey

Parameter	N (%) surveyed	Median (min-max)
Age (years)	299 (100%)	45 (23–82)
Fasting blood glucose (mg/dL)	299 (100%)	88 (54–171)
Systolic blood pressure (mmHg)	298 (99.67%)	119 (70–220)
Diastolic blood pressure (mmHg)	298 (99.67%)	70 (50–111)
Body mass index	299 (100%)	20.44 (18.71–22.96)

General knowledge of diabetes was assessed by two questions. Half of the participants did not know diabetes was a noncommunicable disease. Half of respondents answered that diabetes was a curable disease (Table 2).

The knowledge of risk factors for diabetes was assessed by seven questions. One-third of the population answered correctly (range 27.09%–41.81%), and another one third gave no answer to these questions (range 33.44%–49.50%), whereas another one third gave a wrong answer. Among the Karen community, 36.45% knew that old age is a risk factor for diabetes, 37.12% knew that they had diabetic relatives, 39.80% knew that obesity can lead to diabetes, 37.12% answered that exercise can prevent diabetes, 25.09% reported that pregnant women can have diabetes, and 41.81% said they should not eat excess fatty food for fear of diabetes.

Regarding the symptoms, diagnosis and complications of diabetes, less than 30% knew that fasting blood glucose level should be less than 100 mg/dl. A few of the rural Karen ethnic residents could correctly answer questions in the third part of the questionnaire. Among the respondents, 33.78% answered that diabetic patients could have thirst and polyuria, 34.78% knew that numbness of the limbs might link to diabetes, 35.1% recognized the importance of foot care in people living with diabetes, 32.78% answered that untreated diabetes could lead to blindness, and 34.78% knew that slow wound healing might be due to diabetes. Overall, one-third

of the sample population gave the correct answers (range 32.78%–34.78%) while the other two-thirds were either unsure or gave wrong answers. Overall, public knowledge of diabetes among Karen ethnic rural community is at the lower extreme (Figure 1).

Knowledge level in males and females

Diabetes knowledge was compared between male and female by median sum of the knowledge scores. Female participants had poorer knowledge than male participants. Overall knowledge level in female participants was also lower than in male participants (Figure 2). The median sum of the knowledge scores was 6 (interquartile range: 2–11) among males, and 3 (interquartile range: 1–8) among the females (P for trend = 0.009). There was a significant difference in level of knowledge among females and males.

Discussion

The number of diabetes cases is rising worldwide, and the burden of this is more severe in low- and middle-income countries.¹⁰ "Belonging to an ethnic minority" has been reported as a risk factor for the development of type 2 diabetes.¹¹ Disadvantaged people in these groups are more prone to the consequences of a silent epidemic.¹² It is important to assess the public knowledge of diabetes, especially in minority ethnic populations. Today, raising public health education and reduced disparity between groups

Table 2 Diabetes health literacy survey questionnaire results

Diabetes-related survey questions	Correct %	Wrong %	"Not sure" %
General knowledge			
Diabetes is a noncommunicable disease	51.84	25.42	14.72
Diabetes is curable	29.77	49.50	12.71
Knowledge of risk factors			
Older age is a risk for diabetes	16.45	22.07	33.44
Having a diabetic relative is a risk for diabetes	37.12	18.39	36.12
Overweight people tend to have diabetes	39.80	7.06	35.12
Overweight children are at risk of diabetes	34.45	21.74	35.45
Exercises regularly have less risk of diabetes	37.12	21.07	33.78
Pregnant women are at risk of diabetes	27.09	25.08	39.80
People who eat fatty food are at risk of diabetes	41.81	16.05	34.11
Knowledge of the disease and its complications			
Normal FBS after fasting should not exceed 100 mg/dl	29.43	30.10	32.44
Diabetes people usually have thirst and polyuria	33.78	25.75	32.11
Numbness of hands and feet is a symptom of diabetes	34.78	21.74	35.12
Diabetic people have to take care of feet well	35.12	20.74	36.12
Untreated diabetes can lead to blindness	32.78	23.41	35.79
Wounds in diabetic patients are slow to heal	34.78	20.40	36.12

Notes: FBS = Fasting blood sugar; 29.77 = 29.77%. Responses are in digits with one decimal digit, except the correct response of 29.5.

Abbreviation: FBS, fasting blood sugar.

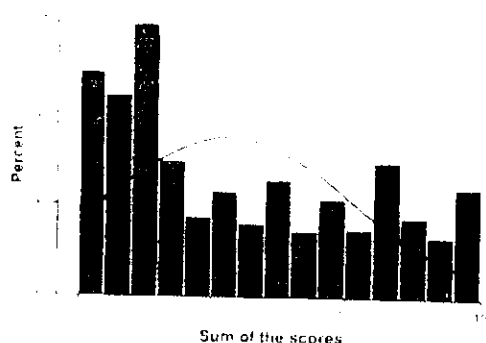


Figure 1 Distribution of diabetes knowledge among the Karen ethnic rural community. **Notes:** Overall knowledge level was scored by the sum of scoring in the histogram, to show the distribution of knowledge. The knowledge was significant ($P < 0.001$) and the distribution was totally skewed to the left ($P < 0.001$). The histogram shows the sum of scoring had a personal zero to three. The peak score around zero indicated that there were 11 people out of 100 people who could hardly answer the questions.

are compulsory for the prevention and care of diabetes in all settings.

Risk perception of a community is the basis for healthy behavioral changes within a community. Perception of risk among people at risk can prevent the disease. This may lead to early lifestyle modification and the prevention of many diabetes cases. Thus, we assessed the perception of diabetes risk factors among the Karen ethnic rural community. We found only one-third of the study sample had knowledge about diabetes risk factors (Table 2). Most in the Karen community did not know that elderly age, being overweight, and physical inactivity are risk factors for diabetes. This may be the consequence of poor risk communication to the Karen ethnic community. Initiation of measures to educate this minority population, including use of mass media, and

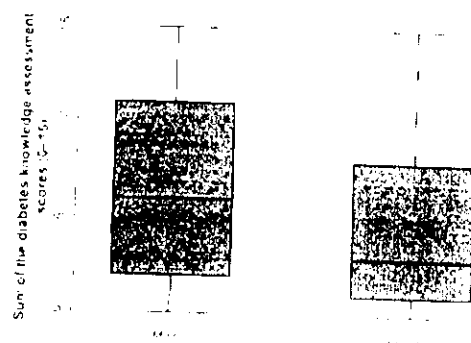


Figure 2 Distribution of diabetes knowledge in male and female participants across survey.

printed materials in the local language, might be a useful strategy for risk communication.

We assessed the public knowledge about symptoms of diabetes and blood glucose test results. Knowledge of diabetes symptoms is important for early diagnosis and accessing care. Recognizing the symptoms of diabetes and its complications may bring the diabetic individuals to seek health care service. Abnormal blood glucose level is also an easily not visible marker for persons at risk. Symptoms of diabetes complications are common presentations, even though these might be indicators of late diagnosis, or poor glycaemic control. Individuals lacking knowledge of these may not seek medical care in time, and consequently will have complications of diabetes.¹⁷ We assessed such knowledge in Karen ethnic community (Table 2). We found that overall, less than 40% of people had this knowledge.

The histogram of knowledge scoring was skewed to the left and peaked at lower end of the scoring (Figure 1). In contrast, the similar histogram for public knowledge of diabetes in Singapore was reported as totally skewed to the right side.¹⁸ The knowledge distribution among the Karen ethnic sample was at the lower end, and pointed out a need for intervention.

We identified an inequality of diabetes knowledge between men and women. In fact, diabetes and its consequent cardiovascular disease risk are higher in women.¹⁹ There is also increasing concern about gestational diabetes,²⁰ however, our observations pointed out that diabetes knowledge among female Karen participants was lower than among males. This type of health inequality has also been reported in many other diseases.²¹ Type 2 diabetes is more common in disadvantaged groups of women, such as those with least income and who are least educated.²² Risk behaviors for type 2 diabetes have been highly prevalent even in the developed setting,²³ moreover, poor women in the developing world tend to delay seeking care and symptoms are too severe.²⁴ In the particular setting of this study, it is likely that women usually work at the home at housekeeping, and become housebound and sedentary. A television education program in the local language might reach these women.²⁵ Lack of diabetes knowledge can cause missed diagnosis, late diagnosis, and higher incidence of diabetes complications. Creation of a peer-group gathering place for women, such as a health education club for mothers, and exercise club for housewives, may promote women's knowledge of diabetes and sharing of information.

In contrast to the excellent study findings in a previous study, the public knowledge among Thai people was reported to be fairly high and there was no gender gap between Thai men and women.¹¹ It is obvious that diabetes health education is poor among the Karen ethnic community. This might be due to a language barrier, which is a major obstacle to educating minority groups, as in other parts of Asia.¹² Existing evidence suggests that such a situation calls for a culturally tailored and well-designed health education strategy.¹³

Limitations of the study

As this was a pilot study swiftly conducted to provide important information, there were weaknesses in the current study. We did not get a 100% response rate. The questionnaire used in this study was made easily comprehensible for rural Karen residents, and study findings may not be generalizable to other settings. Albeit, the findings are the first of their kind to our knowledge, and are meant to assist in guiding further studies.

Conclusion

Despite these limitations, this investigation contributed to our understanding of the health disparity in an ethnic minority population. It provided insights into the need for health education interventions for the prevention of diabetes in a rural ethnic community. The result of this study showed that Karen ethnic men and women were less knowledgeable about all aspects of diabetes. Public education about diabetes in this setting should be started urgently and carefully, to overcome language and cultural barriers and prevent diabetes epidemic among these rural people. Our study finding is expected to be a step forward, in minimizing the disparity in diabetes health education.

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Author contributions

HL and MNA were lead authors. The manuscript was drafted and finalized by MNA, read and confirmed by all the authors.

Disclosure

The authors have no conflicts of interest to declare.

References

1. WHO Diabetes Programme [web page on the Internet]. Updated 2012. Available from: <http://www.who.int/diabetes/en/>. Accessed August 14, 2012.
2. Lundy EJ, Dugger J, Jones S. Epidemiology of type 2 diabetes in ethnic minorities. *Med Clin North Am*. 2008;82(5):947-978.
3. Matthews S, Mann N, Zaccaria R, for Global Partnership for Diabetes and Diabetes Management Research. Diabetes awareness in the public domain. *Int J Clin Pract Suppl*. 2007;61(Suppl 18):S31-S37.
4. Jeyaraj E, Harrison RW, et al. Advances in diabetes for the millennium: a management review. *Med Clin North Am*. 2004;78(Suppl 1):2.
5. Odeh YD, Bonaccio M, Deard A, Coughlan R. Diabetes and ethnic minorities. *Diabet Med*. 2005;22(11):1486-1490.
6. Chai J, Yang MN, Nuanboontraang P, et al. Predicting prediabetes in a rural community: a survey among the Karen ethnic community, Thasongyang, Thailand. *Int J Clin Med*. 2012;5:219-225.
7. United Nations. *World Development Indicators*. 2012. NTD.R and the world's indicators on food. Thailand. [Web page on the Internet]. Updated 2012. Available from: <http://www.indicators.un.org/>. Accessed August 14, 2012.
8. Nuanboontraang P, Dugger J, Jones S, et al. Young people's perceptions of type 2 diabetes in indigenous peoples: A comprehensive review. *Diabetes Research and Clinical Practice*. 2008;82(1):1-11.
9. Devereux G, Francis MM, Fyfe EA. National, regional, and global trends in fasting plasma glucose and diabetes prevalence since 1980: systematic analysis of national surveys and epidemiological studies with 196,476 subjects aged 25 and 27 and 1,000,000 participants. *Lancet*. 2011;378(9881):47-50.
10. World Diabetes Foundation. Diabetes facts [web page on the Internet]. Updated 2012. Available from: <http://www.worlddiabetesfoundation.org/en/press/infocentre>. Accessed August 14, 2012.
11. WHO. Global atlas on cardiovascular disease prevention and control. *World Health Organization*. Updated 2012. Available from: http://www.who.int/enhanced_briefings/publications/atlas_cvd/en/. Accessed August 14, 2012.
12. WHO. Diabetes action plan: a global strategy for diabetes health care planning [Web page on the Internet]. Updated 2012. Available from: <http://www.who.int/diabetes/action-plan/online-diabetes-brochure.pdf>. Accessed August 14, 2012.
13. Gargarek L, Boffetta P, Pizzuti F, Verrini E, Rossi F, Ricci F. Risk perception and management from diabetes to cardiovascular diseases. *Rev Med Virol*. 2010;61(2):118-119; 1196-1197. Epub 2010.
14. Jackson DM, Webb R, Davies J, Meadow J, Smith BM, Wise PH. Public awareness of the symptoms of diabetes mellitus. *Diabet Med*. 1998;15(10):711-717.
15. Wee LL, Ho HK, et al. Public awareness of diabetes mellitus in Singapore. *Singapore Med J*. 2002;13(5):18-19.
16. Gortmaker SL. Increasing prevalence of gestational diabetes mellitus. *Public Health Rep*. 2007;122(1):14-15.
17. Sirtori CR. Gender differences in determinants and consequences of metabolic disease. *J Intern Med*. 2002;251(1):37-61.
18. Dasgupta K, Khan S, Ross SA. Type 2 diabetes in a rural population: concentration of risk among most disadvantaged men but inverse social gradient across groups in women. *Diabet Med*. 2010;27(5):522-531.
19. Liu TH, Li TY, Colitz GA, Willett WC, Manson JE. Television watching and other sedentary behaviors in relation to risk of obesity and type 2 diabetes mellitus in women. *JAMA*. 2003;289(4):1758-1762.

26. Ruyumasa L, L. SC. Wards. A review of knowledge on diabetes in the central region of Thailand. *Diabetologia*. 2009;12(Suppl 3):S140-S148.
27. Wilson L, Wardle EA, Clancy P, Willford S. Diabetes education: an Asian perspective. *Diabetologia*. 1993;16(2):177-180.
28. Houtman JK, Reuber N, Ganselaar J, van R, Edwards A. A culturally appropriate health education for type 2 diabetes in ethnic minority groups: a systematic and narrative review of randomized controlled trials. *Diabetologia*. 2012;55(1):1-17.

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