Effects of a Breastfeeding Training Course on the 5th Year Medical Student; Knowledge, Attitudes and Skills for Breastfeeding Support

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Background: *Health professionals lack the knowledge, attitudes and skills for breastfeeding support.*
Objective: *To find the effects of breastfeeding training course on the 5th year medical students' knowledge, attitudes and skills for breastfeeding support.*
Material and Method: *The subjects were 5th year medical students at the Faculty of Medicine, Srinakharinwirot University. A breastfeeding training course and questionnaires regarding the knowledge, attitudes and skills for breastfeeding support were set up. Pretest and posttest questionnaires for breastfeeding support were assessed before and after the breastfeeding training course. Demographic data, knowledge, attitude and skill scores were collected and analyzed by Chi-square, paired t-test and the Pearson correlation.*
Results: *The knowledge, attitude and skill scores totals 40, 30 and 120 points. The averages of the knowledge, attitude and skill scores before the breastfeeding training course were at 23.1±3.4, 26.0±3.8 and 45.0±18.0 points, respectively. The averages after the breastfeeding training course were 30.7±2.9, 27.6±2.9 and 100.2±10.1 points, respectively. The score differences between the pretest and posttest results were statistically significant ($p<0.001$).*
Conclusion: *The breastfeeding training course improved the knowledge, attitudes and skills in the 5th year medical student.*

Keywords: *Attitudes and skills, Breastfeeding training course, Knowledge, Medical student*

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The World Health Organization (WHO) recommends exclusive breastfeeding during the first six months of the infants life[1].Health professionals, especially general practitioners, should have the confidence to give proper breastfeeding counseling. The Medical Council of Thailand sets the breastfeeding requirements and this includes the care management and counseling education for lactating mothers in a medical doctor's curriculum. Breastfeeding knowledge and skills are taught in the obstetric or pediatric department rotation. Breastfeeding knowledge lecture, conference, self-studyhours and skill practices vary among each medical school. There is no standard minimum requirement of breastfeeding teaching education. However, previous studies have shown that health professionals lack the knowledge, attitudes and skills for breastfeeding support[2-7]. We were interested in studying about a breastfeeding training course and its effect on the medical student's knowledge, attitudes and skills.

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Material and Method

Design

This present study is an intervention study. The subjects were 5th year medical students of the Faculty of Medicine, Srinakharinwirot University. A breastfeeding training course was given by medical instructor staff that had breastfeeding teaching experience that met the minimum requirements of The Medical Council of Thailand's, medical doctors' curriculum. The breastfeeding training course consists of a two-hour lecture, two-hours of self-study learning with an instruction sheet, lists of the standard Thai breastfeeding textbooks, a two-hour small group skill teaching class (3 to 5 students per staff member), bedside teaching, practicing with mannequins and practicing with postpartum mothers under experienced staff's supervision. The students must collect data on

two cases with breastfeeding practice that include counseling the postpartum mother. They also have to show proficiency in teaching latching skills, breastfeeding positioning and manual milk expression during a two-week period. Pretest and posttest questionnaires were assessed before and after the training course. The knowledge, attitude and skill questionnaires were made and the validity had been tested by the medical education staff. The validity of the questionnaires was 85%. The Cronbach's alpha coefficient of the questionnaires was 0.90 (test results from 20 of the 5th medical students). Demographic data, grade point average (GPA), students' history of being breastfed, family's breastfeeding experience and the scores of the questionnaires were collected and analyzed.

Setting

This study was done in the Nakhon Nayok province, a rural area in central Thailand. Data was collected from May, 2014 to April, 2015 at the HRH Princess Maha Chakri Sirindhorn Medical Center which is a 'baby friendly' hospital. HRH Maha Chakri Sirindhorn Medical Center is the main hospital of the medical school, Faculty of Medicine, Srinakharinwirot University.

Inclusion criteria

The 5th year medical students who are required to pass a pediatric rotation during their 4th year of study were recruited.

Exclusion criteria

The 5th year medical students who had not completed a breastfeeding training course were excluded from this study.

Breastfeeding training course

The breastfeeding training course was set by medical education staff that had breastfeeding teaching experience under the breastfeeding knowledge and skill minimum requirements of medical doctors' curriculum of The Medical Council of Thailand. The issues were taught about importance and benefits of exclusive breastfeeding, how to latch, set proper infant breastfeeding position, mother's counseling and initial care of breastfeeding problem. The aim of this breastfeeding training course is that: students had knowledge according to the minimum requirements, students' attitudes for "agree and strongly agree with the importance and benefits of exclusive breastfeeding" are present in at least 80% of the cases, and the students' skills for "can do with confidence and can do with strong confidence" are present in at least 80% of cases. The breastfeeding training course consisted of a two-hour lecture, two-hours of self-study learning with instruction sheets and lists of the standard Thai breastfeeding textbooks, a two-hour small group skill teaching session (3 to 5 students per staff member), bedside teaching, practicing with mannequins and practicing with postpartum mothers under supervision. Students must report two cases with breastfeeding practice including counseling of the postpartum mother, teaching latching skills, breastfeeding positioning and manual milk expression during a two-week period.

Questionnaire

A total of 40 questions regarding the knowledge pertaining to the practice of breastfeeding were included in the questionnaire. The questions were in a multiple choice format. The right answer was scored 1 point and a wrong answer was scored zero. The knowledge score totaled 40 points. The minimal passing level of the knowledge score was 28 (70%). There were 6 questions regarding attitude. The format of the attitude questions was a five-level Likert scale: 1) Strongly disagree, 2) Disagree, 3) Neither agrees nor disagree, 4) Agree, 5) Strongly agree and the points of answers were 1 to 5 points, respectively. The attitude score totaled 30 points. There were 24 questions regarding details of skills. The format of skill questions was a five-level Likert scale scored as: 1) Can't do, 2) Can do without confidence, 3) Can do, 4) Can do with confidence, 5) Can do with strong confidence and the scores of answers were 1 to 5 points, respectively. The skill score totaled 120 points.

Definitions

Exclusive breastfeedingis defined as no other food or drink (including water) other than breast milk. This includes expressed milk. The infant is able to receive drops and syrups of vitamins, minerals, medicine and other oral rehydration salts (ORS)[8].

History of family breastfeeding experience means that the student had an opportunity to help a person who had a baby and resided in the same house as the person they were helping.

Sample size

We set a difference between knowledge, attitude and skill pretest and posttest score of 30% as

clinically significant. We used 0.05 of α error, 0.95 power and an effect size that equaled 0.3. The calculated the sample size as 147 cases. We collected information from the entire class of 5th year medical students (150 cases).

Ethical considerations

This study was approved by The Ethics Committee of the Faculty of Medicine, Srinakharinwirot University (SWUEC/E-070/2557).

Statistical analysis

Demographic data has been reported in means and percentages. We used the paired t-test to compare the mean of the knowledge, attitude and skill scores between the pre-test and post-test. The data of gender, history of exclusive breastfeeding and history of family breastfeeding experience was analyzed by Chi-square. Pearson correlation was used for the correlation analysis. A *p*-value less than 0.05 is considered to be statistically significant. Statistical analysis was performed using SPSS, version 19.0, IBM Singapore Pte., Ltd (Registration No. 1975-01566-C).

Results

The number of medical students that had enrolled in our research project totaled 150. The details of the demographic data are shown in Table 1.

There were statistically significant differences in the knowledge, attitude and skill scores between the pre-test and post-test. The attitude scores had a positive correlation with the skill scores. The details of knowledge, attitude and skill mean that the scores between the pretest and posttest and the correlations are shown in Table 2 and 3.

Following the breastfeeding training course, there were 84.7% of the students who had scores greater than the minimum passing level. There were 96.7% of the students who had attitudes for 'agree and strongly agree with importance and benefit of exclusive breastfeeding' and there were 81.3% of students who had skills for "can do with confidence and can do with strong confidence".

When subgroup analysis of the students' gender, GPA, histories of being exclusive breastfed and family breastfeeding experience was done, there were no statistically significant differences in the knowledge, attitude and skill scores between variables in subgroups.

Table 1. Demographic data of the 5th year medical students

Student's data	
Age (Mean ± SD; years)	22.5±0.8
Sex n (%)	
Male	67 (44.7)
Female	83 (55.3)
GPA	3.0±0.3
History of being exclusive breastfed n (%)	
<3 months	66 (44.0)
3 to 6 months	84 (56.0)
History of family breastfeeding experience n (%)	
Yes	8 (5.3)
No	142 (94.7)

Table 2. Knowledge, attitude and skill mean score between pre-test and post-test

Means of scores	Pre-test	Post-test	*p*-value
Knowledge	23.1±3.4	30.7±2.9	<0.001
Attitude	26.0±3.8	27.6±2.9	<0.001
Skill	45.0±18.0	100.2±10.1	<0.001

Table 3. Correlation within knowledge, attitudes and skills

Correlation of variables	Correlation coefficient	*p*-value
Knowledge and attitudes	0.119	0.152
Knowledge and skills	0.096	0.243
Attitudes and skills	0.768	<0.001

Discussion

After the breastfeeding training course, the 5th year medical students had increased knowledge, attitude and skills for breastfeeding support. This was consistent with the previous study[9-11]. However, the breastfeeding training courses were different. We used a "6-hour breastfeeding training course and two-case collections for skills" although an 18-hour, WHO "Breastfeeding Promotion and Support in a Baby-Friendly Hospital" course was used in the study of Kronborg et al[9] and a 40-hour WHO/UNICEF breastfeeding counseling course was used in the study of Rea et al[10]. We postulated that the breastfeeding training course for medical students had a lower requirement than those for health professionals. It resulted in the medical student's breastfeeding course period as being shorter than a health professional's course. However, WHO Breastfeeding Promotion and

Support Courses are required in "Baby-Friendly Hospitals" and it should be added as a requirement in the 1st year of internship training.

The students who completed the breastfeeding training course had shown that 84.7% of the students had accepted the knowledge (scores greater than the minimum passing level), 96.7% of the students showed positive attitudes and 81.3% of students exhibited adequate skills. This might be an example of how the medical student's breastfeeding training course with a clarified setting and effects on the knowledge, attitudes and skills for breastfeeding support. However, the medical student's breastfeeding course should be developed and standardized for adaptation for each medical school in the future. The standard breastfeeding training course might help to train the students to be adept in the practice of breastfeeding support.

The student's history of being exclusively breastfed, as noted in the demographic data, proved interesting. There was a substantial 3 to 6 month exclusive breastfeeding rate (56.0%) for the medical students (The 4-month exclusive breastfeeding rate in Thailand was 1 to 16.3% during 1993 to 2001)[12]. This was consistent with the study of Victora et al[13], where breastfeeding is associated with improved performance in intelligence tests done 30 years later in life and could have important effects by increasing educational attainment and income as an adult. The explanation regarding intelligence might be that there is more subcortical gray volume development associated with breastfeeding[14]. However, further research is needed in this aspect.

In the present study, there was a correlation between attitudes and skills but knowledge had shown no association with skills. This result was consistent with the study of Lertkhachonsuk et al[15] that stated that knowledge has no correlations with teaching skills in Obstetrics and Gynecology residents. This suggested that positive attitudes of breastfeeding might take a greater role with the skills. However, basic breastfeeding knowledge was necessary for a positive attitude and skills development. Therefore, we suggest that breastfeeding training courses should develop teaching or learning technique for both attitude and skill improvement with breastfeeding knowledge.

The strength of the present study is that the definition of a breastfeeding training course for knowledge, attitudes and skills assessment are clear and well set. However, there was no comparative group to clarify outcomes, the sample size might be too small to detect significant differences in the subgroup analysis and student's histories of being exclusive breastfed might have recall bias. This is a limitation of this study.

Conclusion

A breastfeeding training course has improved the 5th year medical students' knowledge, attitude and skills for breastfeeding support.

What is already known on this topic?

Health professionals lack knowledge, attitudes and skills of breastfeeding support. Knowledge hour and skill practice of medical student's breastfeeding learning varies within each medical school. There is no standard minimal requirement of breastfeeding teaching.

What this study adds?

Breastfeeding training course; '6-hour breastfeeding training course and two-case collection for skill', improved knowledge, attitudes and skills in the 5th year medical student. Positive attitudes of breastfeeding associated with skills among medical students. There was high history of 3 to 6 month exclusive breastfeeding rate (56.0%) in medical students.

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Potential conflicts of interest

None.

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ผลของการจัดการสอนการเลี้ยงลูกด้วยนมแม่ในนิสิตแพทย์ชั้นปีที่ 5 ต่อความรู้ ทัศนคติและทักษะการให้การสนับสนุนการเลี้ยงลูกด้วยนมแม่

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ภูมิหลัง: บุคลากรทางการแพทย์ยังขาดความรู้ ทัศนคติ และทักษะในการให้การสนับสนุนการเลี้ยงลูกด้วยนมแม่

วัตถุประสงค์: ศึกษาผลของการจัดการสอนการเลี้ยงลูกด้วยนมแม่ต่อความรู้ ทัศนคติ และทักษะของนิสิตแพทย์ชั้นปีที่ 5 ในการให้การสนับสนุนการเลี้ยงลูกด้วยนมแม่

วัสดุและวิธีการ: ศึกษาในนิสิตแพทย์ชั้นปีที่ 5 ของคณะแพทยศาสตร์ มหาวิทยาลัยศรีนครินทรวิโรฒ กำหนดรายละเอียดของการจัดการเรียนการสอนการเลี้ยงลูกด้วยนมแม่และสร้างแบบสอบถามสำหรับการประเมินความรู้ ทัศนคติ และทักษะในการให้การสนับสนุนการเลี้ยงลูกด้วยนมแม่ จากนั้นให้นิสิตทำแบบสอบถามก่อนและหลังการสอนการเลี้ยงลูกด้วยนมแม่ เก็บข้อมูลพื้นฐาน ข้อมูลคะแนนความรู้ ทัศนคติ และทักษะมาวิเคราะห์โดยใช้สถิติ Chi-square, t-test และ Pearson correlation

ผลการศึกษา: ค่าเฉลี่ยของคะแนนความรู้ ทัศนคติ และทักษะของนิสิตแพทย์ชั้นปีที่ 5 ก่อนการสอนการเลี้ยงลูกด้วยนมแม่เท่ากับ 23.1±3.4, 26.0±3.8 และ 45.0±18.0 คะแนนตามลำดับ ค่าเฉลี่ยของความรู้ ทัศนคติ และทักษะหลังการสอน การเลี้ยงลูกด้วยนมแม่เท่ากับ 30.7±2.9, 27.6±2.9 และ 100.2±10.1 คะแนนตามลำดับ คะแนนความรู้ ทัศนคติ และทักษะก่อนและหลังการสอนการเลี้ยงลูกด้วยนมแม่แตกต่างกันอย่างมีนัยสำคัญทางสถิติ

สรุป: การจัดการสอนการเลี้ยงลูกด้วยนมแม่ช่วยเพิ่มความรู้ ทัศนคติ และทักษะของนิสิตแพทย์ชั้นปีที่ 5 ดังนั้นการจัดการสอนการเลี้ยงลูกด้วยนมแม่ในรูปแบบนี้ควรได้รับการกำหนดเป็นหนึ่งในตัวอย่างของมาตรฐานการจัดการสอน การเลี้ยงลูกด้วยนมแม่ที่จะช่วยเพิ่มความมั่นใจในการให้การสนับสนุนการเลี้ยงลูกด้วยนมแม่ของนิสิตแพทย์