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Public Health Nurse Students' Competences on Breastfeeding Counselling

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Laurea University of Applied Sciences **Abstract**
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This study assessed the self-reported attitudes, knowledge and behaviours of public health nurse students regarding breastfeeding counselling after participating in the breastfeeding counselling course provided by Laurea University of Applied Sciences. The study was conducted to evaluate guideline of the World Health Organization (WHO) about protection and promotion of breastfeeding in health facilities providing maternity care. The WHO and the Finnish National Institute for Health and Welfare (THL) have both committed to scale up breastfeeding rates globally and nationally for the health and wellness of infants and their mothers.

Previous research shows that breastfeeding has many health benefits for infants and their mothers. The breastfeeding counselling in the maternity clinics should be evidence based, should be in accordance with the official recommendations and it should be based on need and respect the family wishes.

The aim of this study was to assess the competences of Public Health Nurse students who participated in a breastfeeding counselling course provided by Laurea UAS. The specific objectives were to compare the self-reported breastfeeding knowledge, behaviours and attitudes according to age, gender, campus, working experience and own breastfeeding experience.

The data was collected by sending an e-questionnaire to three groups of public health nurse students and 45 responses were received. Two responds were deleted, so the total of responses was 43 (31,62%). Descriptive Statistics calculated and differences in breastfeeding competencies measured by comparing summated variables by independent sample t-tests by SPSS 23.0.

The results show good competences in breastfeeding counselling and good compliance with the WHO recommendations. The respondents disagreed with the recommendations conflicting with the national recommendations. Significant differences were found in supporting to establish and initiate breastfeeding between two campuses.

Further research is needed to assess the skills of public health nurses in breastfeeding counselling and it would be beneficial to assess the self-reported competences of health care professionals before and after attending the breastfeeding counselling course.

Keywords: breastfeeding, counselling, competences, public health nurse students

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1 Introduction

The past few decades have accumulated a lot of research about the importance of breastfeeding to mothers and infants. The research shows a decrease in morbidity and mortality, higher intelligence and less dental malocclusions in infants breastfed for longer periods of time. These benefits persist not only while breastfeeding, but also later in life. The benefits for the mother include lower breast cancer rates and improved birth spacing. It is estimated that over 800 000 child deaths and 20 000 breast cancer cases could be avoided every year by increasing breastfeeding rates. (Victora, Bahl, Barros, Franca & Horton 2016.)

The World Health Organization (WHO) recommends exclusive breastfeeding until 6 months of age and complimentary breastfeeding until 2 years or beyond (WHO 2017). In Finland exclusive breastfeeding is recommended until 4-6 months and complimentary breastfeeding until 1 year or beyond if the family wants. In Finland it is challenging to get mothers to exclusively breastfeed until 4-6 months (Hakulinen, Otronen & Kuronen 2017). Only 9% of infants aged 5-6 months are exclusively breastfed and about 1/3 is getting breastmilk at the age of 1 year (Uusitalo, Nyberg, Pelkonen, Sarlio-Lähteenkorva, Hakulinen-Viitanen & Virtanen 2010).

The breastfeeding counselling in the maternity clinics should be evidence based, should be in accordance with the official recommendations and it should be based on need and respect the family wishes (Hakulinen et al. 2017). According to research the main problems in breastfeeding counselling are lack of knowledge of the counsellors, lack of resources, weak counselling skills and negative attitudes (Laanterä 2011).

In 1993 WHO and UNICEF published a breastfeeding counselling training course to provide health care workers with the basic knowledge, skills and attitudes needed for supporting mothers in optimal breastfeeding (Hall Moran et al. 2000). This course is mandatory for public health nurse and midwife students in most universities of applied sciences in Finland (Lång 2017). The research shows that attending the course improves knowledge, attitudes and self-reported practices of health professionals (Hall Moran, Bramwell, Dykes & Dinwoodie, 2000).

The purpose of this study is to assess the breastfeeding counselling competences of Public Health Nurse Students participated on the WHO breastfeeding counselling course in Laurea University of Applied Sciences. The aim is to assess their knowledge, attitudes and self-reported behaviours in breastfeeding counselling. This survey will concentrate on healthy, full term babies and the studies concerning preterm or unhealthy babies have been left out.

2 Background

For child survival, healthy development and maternal health, breastfeeding is a cornerstone. In order to support women and maximize the breastfeeding rates, WHO and UNICEF published already in 1989 a joint statement for protecting, promoting and supporting breastfeeding. The statement listed Ten Steps to Successful Breastfeeding. The Steps were re-emphasized in the "Innocenti Declaration on the Protection, promotion and support of breastfeeding" in 1990 and became part of the Baby-friendly Hospital Initiative (BFHI), published in 1991. (World Health Organization 2017.)

In 1993 WHO and UNICEF launched a breastfeeding counselling course to provide health care workers working with mothers and babies the knowledge and skills to support breastfeeding. The Ten Steps were then again emphasized in 2005 in the Innocenti Declaration 2005 on infant and young child feeding and their updated version came in 2009. (World Health Organization 2017.)

In 2012, the World Health Assembly Resolution 65.6 a Comprehensive implementation plan on maternal, infant and young child nutrition was endorsed. The resolution specified six global nutrition targets for 2025 and one of these targets is to increase the exclusive breastfeeding rates for the first six months up to at least 50%. (World Health Organization 2017.)

Immediate support to initiate and establish breastfeeding	Feeding practices and additional needs of infants	Creating and enabling environment
- Early skin-to-skin contact - Early initiation of breastfeeding - Showing mothers how to breastfeed - Rooming-in - Demand feeding	- Early additional foods or fluids - Avoidance of pacifiers and dummies - Avoidance of feeding bottles and teats	- Breastfeeding policy of facilities providing maternity and newborn services - Training of health workers - Antenatal breastfeeding education for mothers - Discharge planning and linkage to continuing support

Table 1: Guideline for protecting, promoting and supporting breastfeeding (WHO 2017)

The new updated WHO guideline, "Protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services", provides global, evidence-based recommendations for maternity care and newborn services. The guideline presents key

recommendations and a summary of supporting evidence as well as specific practices to protect, promote and support breastfeeding. (World Health Organization 2017).

The Guideline (Table 1) is divided into three sections: Immediate support to initiate and establish breastfeeding, feeding practices and additional needs of infants and creating an enabling environment (World Health Organization 2017).

2.1 Immediate support to establish and initiate breastfeeding

The immediate support to establish and initiate breastfeeding refers to practices in birth facilities and home with newborns in early days when the foundations for breastfeeding are laid. It includes early skin-to-skin contact, early initiation of breastfeeding, showing mothers how to breastfeed, rooming-in and demand feeding. (WHO 2017.)

It is also important to address these practices already in prenatal care so that mothers-to-be have the needed information and know what to expect.

2.1.1 Early skin-to-skin contact

Early skin-to-skin contact (SSC) is defined as placing a naked newborn infant on mother's bare skin after birth for at least one hour within 24 hours after birth. Previous studies have shown that early skin-to-skin contact after birth promotes the infant's temperature and blood glucose level regulation and metabolic adaptation. (Moore, Bergman, Anderson & Medley 2016; Safari, Awaz Aziz, Shukir Saleem & Moghaddam-Banaem 2018.)

Moore et al. 2016 found in their review that the women who had early skin-to-skin contact with their babies had a higher chance of breastfeeding their babies at one to four months. They also breastfed their infants longer. The babies held in skin-to-skin contact were more likely to succeed in their first breastfeeding. During early SSC the infants hands move over the mother's breasts which releases oxytocin and increases the secretion of breastmilk. This evidence supports using immediate or early skin-to-skin contact after giving birth for successful breastfeeding. (Moore et al. 2016; Safari et al. 2018.)

2.1.2 Early initiation of breastfeeding

In a study, Smith, Hurt, Chowdhury, Sihna, Fawzi and Edmond (2017) evaluated the relationship between initiating breastfeeding within one hour of birth compared to delayed initiation (2-24 and >24 hours after birth) on neonatal mortality. The results showed a clear relationship on neonatal mortality increasing with a delay in breastfeeding initiation. The infants who initiated breastfeeding within one hour of birth had a 33% smaller risk of neonatal mortality compared to infants who initiated breastfeeding 2-23 hours after birth. The mortality risk was even higher if breastfeeding was initiated after 24 hours of birth. The delay on breastfeeding initiation also increases the risk of neonatal morbidity including sepsis and

acute respiratory and gastrointestinal infections. (Khan, Vesel, Bahl & Martinez 2015; Smith et al. 2017.)

The Finnish national breastfeeding recommendations guide to initiate breastfeeding within 1 hour of birth (Hakulinen et al. 2017).

2.1.3 Showing mothers how to breastfeed

Research shows that the duration of breastfeeding and exclusive breastfeeding rates can be increased by offering breastfeeding support to mothers. Effective support involves that it is offered by trained health personnel in maternity care, that mothers can predict when support is available and that the support is customised to the needs of the family. (McFadden et al. 2017.)

By offering effective support, mothers can be helped to solve any breastfeeding related issues and continue to breastfeed regardless of where they live (McFadden et al. 2017).

However not all babies are able to feed at the breast and mothers might want to express milk for their own comfort or to increase their milk supply, so guidance with milk expression methods are also needed. Effective methods include starting the expression of milk soon after birth, relaxation, breast massage, warming the breasts, hand expression and low-cost pumps. These methods might be as or more effective than high cost electric pumps. However the most suitable method for expressing milk may depend on many things and health care professionals should be able to reason the use of breast pumps for individual mothers rather than implying that using a breast pump is a routine in breastfeeding. (Becker et al. 2016.)

2.1.4 Rooming-in

WHO (2017) recommends rooming-in in birth facilities to promote breastfeeding. Rooming in refers to keeping the mother and the baby together after birth in the same room, instead of the baby being swaddled and in a nursery. The mother-infant proximity after giving birth might make breastfeeding more successful by influencing mother-infant behaviour that is needed in the regulation of breastmilk production. Research indicates that the separation and swaddling after birth interferes with the interaction between the mother and the baby on a breastfeeding session a few days after birth (Dumas, Lepage, Bystrova, Matthiesen, Welles-Nyström & Widström 2013).

In a review conducted by Jaafar, Ho and Lee (2016), evidence was found that keeping the mother and infant in the same room in the birth facility increases the rate of exclusive breastfeeding few days after birth. They were however able to find only one study fitting their criteria and more research on this topic is needed. The topic is important, because

keeping the mother and infant together after birth may increase the frequency of the breastfeeding and the amount of milk the mother produces. (Jaafar et al. 2016.)

2.1.5 Demand feeding

Demand feeding (baby-led breastfeeding) means that the baby will lead how often and how long she/he feeds. This way the amount of milk the mother produces is determined by the baby's demands and the baby can ensure that enough milk is produced to his or her needs. The other approach is to lead the breastfeeding by clock, which is known as scheduled or timed breastfeeding. (Fallon, Van der Putten, Dring, Moylett, Fealy & Devane 2016.)

Fallon et al. (2016) made a systematic review to assess the effects of demand feeding compared with timed breastfeeding on successful breastfeeding for healthy full-term babies. They didn't find any studies to fit their criteria and recommend that no changes are made in the current WHO guidelines which recommend baby-lead breastfeeding. More research is needed on this topic.

According to Brown and Arnott (2014) parent-led parenting approaches in early infancy is associated with lower likelihood of the infant being breastfed at birth and an increased likelihood of giving the infant formula milk within six weeks after birth.

2.2 Feeding practices

In this section of the Guideline, WHO (2017) gives recommendations and research on whether or not babies should be given additional foods alongside breastfeeding before six months of age and whether it is good or not to give them pacifiers and milk from a bottle, for upscaling exclusive breastfeeding levels.

2.2.1 Early additional foods

In their systematic review, Smith and Becker (2016) found no evidence that giving healthy newborn babies additional foods of fluids would have any benefits. They also didn't find any evidence that starting solid foods at 4-6 months would have any benefit for the infant, nor did they found any risk related to waiting until 6 months of age. (Smith & Becker 2016.)

This recommendation is conflicting the Finnish National recommendations that solid foods should be started at 4-6 months of age. It is important to give newborn infants additional milk only for medical reasons. In 2010 in Finnish birth hospitals 71% of newborns had been given additional milk. (Hakulinen et al. 2017.)

2.2.2 Avoidance of pacifiers and dummies

In a systematic review, there was no evidence that avoiding pacifiers and dummies after establishing breastfeeding would have any negative effects on breastfeeding (Jaafar et al. 2016). More research on the topic is needed, but it was decided not to make a question out of this due to the lack of evidence.

2.2.3 Avoidance of feeding bottles and teats

There is not much available, good quality research on weather cup feeding is better versus bottle feeding and most of the available research is done on pre-term infants. However there is some evidence that those infants receiving their supplemental feedings by cup were more likely to be exclusively breastfed after the hospital stay and to receive any breastmilk up to six months of age. The evidence was not strong enough to make any recommendations about cup of bottle feeding for healthy, term infants. (Flint, New & Davies 2016.)

2.3 Creating an enabling environment

The creating and enabling environment part of the WHO Guideline includes breastfeeding policy of facilities providing maternity and newborn services, training of health workers, antenatal breastfeeding education for mothers and discharge planning and linkage to continuing support (World Health Organization 2017).

The evidence supporting these recommendations vary from moderate- to very low-quality evidence, so it was chosen in this questionnaire to concentrate on questions regarding the WHO and UNICEF International code for marketing breastmilk substitutes, training in breastfeeding counselling and breastfeeding counselling in general.

2.3.1 The international code of marketing of breast-milk substitutes

In 1981 the World Health Assembly ratified the International code of marketing of breast-milk substitutes. The aim of the code is to protect breastfeeding by providing appropriate information about infant feeding and to regulate the marketing of breastmilk substitutes. (UNICEF 2005.)

The Code requires that: *"there should be absolutely no promotion of breastmilk substitutes, bottles and teats to the general public; that neither health facilities nor health professionals should have a role in promoting breastmilk substitutes; and that free samples should not be provided to pregnant women, new mothers or families."* (UNICEF 2005).

The contents of the code regarding protecting and promoting breastfeeding has enacted legislation in EU and in Finland. Health care professionals working with mothers and newborns

are required to protect breastfeeding and know the responsibilities required by the code. (Hakulinen et al. 2017.)

2.3.2 Breastfeeding counselling training of health professionals

Hall Moran et al. (2000) showed in their study that taking the WHO 20-hour breastfeeding counselling course significantly improves the competences of health professionals.

In Finland the challenge is to support to initiate and establish breastfeeding as well as getting the exclusive breastfeeding to continue up to at least four months of age. The breastfeeding counselling is supposed to be started in the beginning of the pregnancy and continue until weaning the infant. The main goals are to give information and foster positive attitudes and support for breastfeeding. (Hakulinen et al. 2017.)

Research shows that if breastfeeding counselling is given in a hurry, mothers feel that the counselling can be contradictory and given as a routine advice. Many mothers feel that the advice given in the counselling doesn't fit their situation and causes stress. (Hakulinen et al. 2017.)

According to Finnish recommendations the breastfeeding counselling course based on the WHO breastfeeding counselling course should be mandatory to all midwife and public health nurse students. The students should also have a chance to practice their skills with a certified lactation consultant. (Hakulinen et al. 2017.)

3 Aims

The purpose of this study was to assess the breastfeeding counselling competences of public health nurse students' who participated on the WHO breastfeeding counselling course in Laurea UAS. The aim was to assess the knowledge, behaviours and attitudes on protecting, promoting and supporting breastfeeding. The specific objectives are to:

1. Study the self-evaluated breastfeeding knowledge, behaviours and attitudes of public health nurse students about supporting to initiate and establish breastfeeding according to age, gender, campus, working experience and own breastfeeding experience.

2. Study the self-evaluated breastfeeding knowledge, behaviours and attitudes of public health nurse students about breast feeding practices and additional needs of infants.

3. Study the self-evaluated breastfeeding knowledge, behaviours and attitudes of public health nurse students about creating an enabling environment.

The results can be used in further developing the breastfeeding counselling education in Laurea University of Applied Sciences (UAS).

4 Methods

The study is a cross-sectional competence evaluation of the breastfeeding counselling skills of public health nurse students participated in the breastfeeding counselling course in Laurea UAS 2018 and 2019.

The survey was completed by an online questionnaire using E-questionnaire provided by Laurea UAS. The questionnaire (Appendix 1) was constructed in accordance with the WHO recommendations.

4.1 Constructing the survey questionnaire

A self-administered survey questionnaire was constructed to evaluate the WHO guidelines for Protecting, promoting and supporting facilities providing maternity and newborn services. The Guidelines include 15 recommendations from which the ones focused on term-infants were chosen for this survey. Questions were formed according to the evidence reported in the references supporting the importance of the issues (Appendix 2).

The survey is measuring three self-reported competence areas: knowledge, behavior and attitudes. The operationalization of the questions will be conducted using 1-5 Likert scale:
1= Strongly disagree (Täysin eri mieltä)
2= Disagree (Eri mieltä)
3= Neither agree or disagree (Ei samaa eikä eri mieltä)
4= Agree (Samaa mieltä)
5= Strongly agree (Täysin samaa mieltä)

The three competence areas in this survey are measuring attitudes, behavior and knowledge. Attitude was measured with questions 8, 11, 14, 17, 20, 23, 26, 29, 32, 35, 38 and 41. Behavior was measured with questions 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39 and 42. Knowledge was measured with questions 10, 13, 16, 19, 22, 25, 28, 31, 34, 37, 40 and 43.

The quantitative material was analysed by SPSS Statistics version 23.

4.2 Data collection

The research permit was applied and granted from Laurea UAS director 10th April 2019 (Appendix 3 & 4).

The data collection was made by sending a link to the e-questionnaire to Public Health Nurse Students by Public Health Nurse Lecturers. The link was sent to total of 136 students who had participated on the breastfeeding counselling course in Laurea UAS in the years 2018 and 2019. The breastfeeding counselling courses had been arranged on campuses in Tikkurila and

Otaniemi. The original time to answer the questionnaire was 15.4-30.4.2019 but it was extended until the 12th of May 2019 due to original lack of participants.

In the data collection period a total of 45 responds were received, 2 responds were deleted. The respond rate was 31,62%. The IP-addressess of the respondents were not detected or saved.

4.3 Data analysis

The data was saved from e-questionnaire to SPSS. Of the 45 responses 2 were deleted after checking the data. There were three answers with the exact saving time and the same answers, so it was likely that they were submitted by the same respondent. The number of total responses was 43. Overall the respondents had completed the questionnaire well, only a few responds missing in the whole data. The missing responses were not replaced. After the data check the descriptive statistics were used to calculate the mean values and standard deviations of the individual statements. The mean is used to measure the average of all the values in the study variable and standard deviation is an important statistic for understanding deviation within distribution (Grove, Burns & Gray 2013, 553-555). Summated variables by mean were constructed according to the competence areas "Support to establish and initiate breastfeeding", "Feeding practices and additional needs of infants" and "Creating an enabling environment".

By using the three summated variables independents sample t-test completed to measure differences in competencies according to respondents age, campus and own breastfeeding experience. A t-test was used to measure significant differences between group mean values. In independent samples, the t-test the study participants in the groups need to be unrelated or different from the participants in other groups. (Grove et al. 2013, 580-581.) In the t-test completed for this study the comparisons were made to measure differences between respondents ages 20-29 and 30-39, Campuses Tikkurila and Otaniemi and whether or not the respondent had her own breastfeeding experience.

4.4 Ethical and legal considerations

A research permit including informed consent was applied from Laurea UAS in April 2019. Answering the questionnaire was voluntary and anonymous. Informed consent was asked from the respondents at the beginning of the survey document. According to the principles of the Nuremberg Code and the Declaration of Helsinki (Grove et al. 2013, 160-161) the participants were provided with information about his or her rights, the purpose of the study, procedures to be undertaken, potential risk and benefits of participation, expected duration of the study, extent of confidentiality of personal information and demographic data. The participants gave their consent on the online survey questionnaire by answering it (Appendix 1).

GDPR was included in the first research permit application on 11th of March 2019 (Appendix 3). The research permit was granted after an extra application on 10th of April 2019 (Appendix 4).

4.5 Validity and reliability of the study

According to Grove et al. 2013 (197, 389), the study validity and reliability has to be an important concern throughout the whole research process. Validity means the accuracy of the claim and it is central when gathering evidence for practise. The reliability of an instrument is centred around consistency, meaning that if the same measurement scale is used on the same sample again, the results will be the same (unless something else has happened to change their answers).

4.5.1 Validity of the study

Project validity was kept in mind through the whole project. The questionnaire was self-constructed but it was made sure the questions were formed from reliable research. The background questions were from a study by Hall Moran et al. (2000) with a few added ones to make more comparisons. The main questions were constructed from the evidence behind the WHO recommendations which includes systematic reviews that follow the procedures of the Cochrane handbook for systematic reviews of interventions and syntheses of qualitative evidence, which were appraised using the GRADE-CERQual approach (World Health Organization 2017).

The questions were asked in Finnish and effort was made to keep the questions simple and understandable. The questionnaire was sent to two Public Health Nurse Lecturer's in Laurea UAS for comments in March, but unfortunately no comments were received.

The sample which the questionnaire was sent to included 3 groups of Public Health Nurse students who had all participated on the breastfeeding counselling course provided by Laurea UAS. These three courses had been taught by two different lecturers. External validity is measuring how much the project findings can be used outside the sample used in the project (Grove et al. 2013, 202). In this project the findings are possible to generalize to the Public Health Nurse students studying in Laurea UAS and participating in the breastfeeding counselling courses (n=136). The respondents represent 31,62% of the course participants.

The questionnaire was kept simple and short concentrating on the main recommendations about breastfeeding counselling by WHO (2017). This increases the external validity, because it limited the investment demands on the replicants. However, we must keep in mind that it might be that the students who replied to the questionnaire are the ones who are more interested in breastfeeding and its importance to infants and mothers.

4.5.2 Reliability of the study

Instruments reliability refers to the consistency of the measures obtained. Reliable instruments increase the power of a study to find significant differences occurring in the studied sample. (Grove at al. 2013, 389.) The instrument used in this questionnaire was a Likert scale questionnaire, which was used to determine the opinions and attitudes of the respondents. It contains declarative statements and a numeric scale after each statement. In this project a 5-point Likert scale was used, where a value 1 is given to the most negative response and a value 5 to the most positive response. (Grove et al. 2013, 430.)

The internal consistency of the results was tested by Cronbach's alpha coefficient. The Cronbach alpha value describes the internal consistency of the data. It can range between 0.00 to 1.00 indicating no consistency or reliability to perfect consistency with no measurement error. The values less than 0.60 are considered low and indicates the limited reliability of the instrument. (Grove et al. 2013, 391-392.) The values for all constructed summated variables in this study were good ranging from 0.687 to 0.777.

5 Results

The questionnaire in this study was sent to total of 136 Public Health Nurse students in Laurea UAS who have participated in the breastfeeding counselling course in the years 2018 and 2019. Most (n=27) of the 43 respondents were between 20 and 29 years old and all were from two campuses in Laurea UAS, Tikkurila (n=26) and Otaniemi (n=17). Ten were between 30 and 39 years old, all but 1 of them were female. Most of them (n=40) have worked with mothers and babies for less than two years.

Almost half of the respondents (46,5%) had breastfed a baby themselves and 44,2% had not. Three respondents thought that the question didn't concern them. Most of the respondents assessed their knowledge about breastfeeding as "Good", only one respondent assessed his/her knowledge excellent.

Not any of the responses to the competence related statements were normally distributed. So, altogether three summated variables (Table 2) were constructed according to the breastfeeding competence areas by mean values. The first summated variable constructed by using 18 variables about supporting to establish and initiate breastfeeding. For content reasons not any variable deleted, all 18 variables were considered important in breastfeeding guidance. The internal consistency reliability of the "Establish and initiate breastfeeding" scale was good (α=0.777). The lowest mean value gained for the statement "Initiating breastfeeding within one hour after birth reduces infant mortality" (3.93, SD 0.905). The other mean values were between 4.0-4.93.

The summated variable for scale “Feeding practices and additional needs of infants” was constructed of nine variables. The internal consistency reliability of the scale calculated by Cronbach’s alpha was good (α= 0.713). The lowest mean value gained for the statement “There’s no benefits for starting solid foods before 6 months of age” (mean 2.57, SD 1.151).

The summated variable for scale “Creating an enabling environment” was constructed of eight variables. One variable was deleted due to zero variance (“It is important that Public Health nurses get education on breastfeeding counselling”). All respondents strongly agreed with the statement. The internal consistency reliability of this scale was good (α=0.687).

Summary Variable	Mean	Standard deviation	Scale reliability (α=)	Independent sample (t=)
Establish and initiate breastfeeding (18 items)	4.55	0.31	0.777	2.884
Feeding practices and additional needs of infants (9 items)	4.21	0.40	0.713	Not Significant
Creating an enabling environment (8 items)	4.39	0.44	0.687	Not Significant

Table 2: Summated variables

By using the three summated variables independents sample t-test was completed to measure differences between respondents age, campus and own breastfeeding experience. There was no significant difference in any variable between the respondents age or own breastfeeding experience. Between Otaniemi and Tikkurila campuses there was a significant difference in the variable “Support to establish and initiate breastfeeding” (t=2.884).

The t-tests were not completed for differences in competencies by gender and working experience due to little variance.

6 Discussion

The results show an overall good compliance with the WHO recommendations by the Public Health Nurse students after completing the breastfeeding counselling course in Laurea UAS. It is encouraging that the students seem to understand the importance of breastfeeding and their role in supporting it and creating an environment that enables it.

In the first variable "Supporting to establish and initiate breastfeeding" the lowest mean value was given to the statement "Initiating breastfeeding within 1 hour of birth reduces infant mortality". This is probably because in Finland the infant mortality rate is one of the lowest in the world (The World Bank 2017). Skin-to-skin contact with the newborn infant and supporting mother's in breastfeeding in post-natal care was regarded very important by the respondents. Similar results were also reported in the studies of Moore et al. (2016) and McFadden et al. (2017).

The main differences in the results for variable "Feeding practices and additional needs of infants" came up with the statements that are conflicting with the Finnish National recommendations (Hielm & Virtanen 2019); for example if exclusive breastfeeding should be endorsed until six months of age or if infants should be given complimentary solid foods between 4-6 months. This result doesn't necessarily give information about the quality of the education, but the recommendations being different. Because the evidence is backing up the WHO recommendation (Smith and Becker 2016; Victora et al. 2016), the Finnish National recommendations should be considered to be updated to comply with those, especially Finland trying to scale up the breastfeeding levels.

In the scale "Creating an enabling environment" were statements about the international code of marketing of breastmilk substitutes. The respondents seemed to agree that it is important to comply with the code, but the lowest value of the whole scale was for the statement "I don't guide expecting mothers to use breastmilk substitutes", which raises the question that if they think exclusive breastfeeding is important, why would they still advice expectant mothers to use formula milk? There shouldn't be any reason to start guiding expectant mothers with formula milk in prenatal care. As the research suggests, the additional feedings of newborns should always be medically indicated (Hakulinen et al 2017), so the guidance should happen in the birth hospital or post-natal care if needed. This topic should be addressed more in the breastfeeding counselling course. Also more research is important to gain.

The interesting result was the significant difference between "Support to establish and initiate breastfeeding" between Otaniemi and Tikkurila campuses. The courses are taught by two different teachers, so there could be a difference in teaching methods. It would be beneficial to coordinate the breastfeeding counselling courses together in the future to get

the same level of education since the different campuses belong to the same school. Also one observation about the breastfeeding counselling course (after attending myself one taught in Otaniemi Autumn 2018) is that the amount of practical training on the course is minimal, even though it is regarded very important in the WHO course plan. It would be beneficial to integrate more practical training into the course itself, even though most of the public health nurse students can practise the counselling skills in practical training periods in maternity care.

The importance of continuous breastfeeding education of Public Health Nurses came up in the questionnaire responds since all the respondents thought that "It is important that Public Health Nurses get education in breastfeeding counselling". This very important matter is also included in the Finnish legislation about health care professionals, as they are obligated to sustain the knowledge and skills needed in their field. The legislation also states that the employer is obligated to provide continuous education. (Laki terveydenhuollon ammattihenkilöistä 2015.)

The results show that the public health nurse students gain a good knowledge about breastfeeding in the breastfeeding counselling course provided by Laurea UAS. Their self-reported knowledge, behaviour and attitudes seem to be mostly in good level with the WHO recommendations. Still the research shows that breastfeeding counselling given in the maternity clinics by public health nurses need improvement (Laanterä 2011) so an evaluation of the counselling skills of public health nurses would be urgently needed in the light of the need to scale up breastfeeding levels nationally and globally.

In the future it would be interesting to make a study comparing the Public Health Nurse student´s competences before and after the breastfeeding counselling course to see how much course changes attitudes, behaviours and self-assessed knowledge.

7 Conclusions

In conclusion the self-evaluated breastfeeding knowledge, behaviors and attitudes of public health nurse students were mostly in accordance with the updated WHO breastfeeding counselling guidelines in all areas. WHO and UNICEF code of marketing of breast-milk substitutes needs to be addressed more as well as breastfeeding counselling for expectant mothers in maternity clinics. The unity of the breastfeeding counselling education should be well coordinated to avoid differences in learning results between different campuses in Laurea UAS.

In a national level, the Finnish breastfeeding recommendations should be considered to be updated to comply with the WHO recommendations.

References

Printed sources

Dumas, L., Lepage, M., Bystrova, K., Matthiesen, A., Welles-Nyström, B. & Widström, A. 2013. Influence of Skin-to-skin Contact and Rooming-in on Early Mother-Infant Interaction: A Randimized Controlled Trial. Clinical Nursing Research, 22 (3), 310-336.

Grove, S., Burns, N. & Gray, J. 2013. The Practice of Nursing Research. Elsevier Saunders. Missouri.

Hall Moran, V., Bramwell, R., Dykes, F. & Dinwoodie, K. 2000. An evaluation of skills acquisition on the WHO/UNICEF Breastfeeding Management Course using the pre-validated Breastfeeding Support Skills Tool (BeSST). Midwifery, 16 (3) 197-203.

Khan, J., Vesel, L., Bahl, R. & Martinez,J. 2015. Timing of breastfeeding initiation and exclusivity of breastfeeding during the first month of life: effects on neonatal mortality and morbidity – a systematic review and meta-analysis. Maternal and Child Health Journal, 19 (3) 468-479.

Laanterä, S. 2011. Breastfeeding Counseling in Maternity Care. Academic Dissertation. University of Eastern Finland.

Victora, C., Bahl, R., Barros, A., Franca, G. & Horton, S. 2016. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. The Lancet, 387 (10017) 475-490.

Electronic sources

Becker, GE., Smith, HA. & Cooney, F. 2016. Methods of milk expression for lactating women. Cochrane Database of Systematic Reviews, 9: CD006170. doi:10.1002/14651858.CD006170.pub5

Brown, A. & Arnott, B. 2014. Breastfeeding Duration and Early Parenting Behaviour: The Importance of an Infant-Led, Responsive Style. PLoS One, 9 (2) e83893

Fallon, A., Van der Putten, D., Dring, C., Moylett, EH., Fealy, G. & Devane, D. 2016. Baby-led compared with scheduled (or mixed) breastfeeding for successful breastfeeding. Cochrane Database of Systematic Reviews, 9: CD009067. doi:10.1002/14651858.CD009067.pub3

Flint, A., New, K. & Davies, MW. 2016. Cup feeding versus other forms of supplemental enteral feeding for newborn infants unable to fully breastfeed. Cochrane Database of Systematic Reviews 8:CD005092. Doi:10.1002/14651858.CD005092.pub3

Hakulinen, T., Otronen, K. & Kuronen, M. 2017. Kansallinen imetyksen edistämisen toimintaohjelma vuosille 2018-2022. Terveyden ja hyvinvoinnin laitos. http://urn.fi/URN:ISBN:978-952-302-949-1

Hielm, S. & Virtanen, S. 2019. Syödään yhdessä – ruokasuositukset lapsiperheille. Terveyden ja hyvinvoinnin laitos. http://urn.fi/URN_ISBN_978-952-343-254-3.pdf.

Jaafar, SH., Ho, JJ. & Lee, KS. 2016. Rooming-in for new mother and infant versus separate care for increasing the duration of breastfeeding. Cochrane Database of Systematic Reviews, 8: CD006641. doi:10.1002/14651858.CD006641.pub3

Laki terveydenuollon ammattihenkilöistä 559/1994. Finlex.Accessed 20.05.2019. https://www.finlex.fi/fi/laki/ajantasa/1994/19940559.

Lång, A. 2017. Imetysohjaajakoulutus kätilö- ja terveydenhoitajakoulutuksessa. Terveyden ja hyvinvoinin laitos. http://urn.fi/URN_ISBN_978-952-302-947-7.pdf.

McFadden, A., Gavine, A., Renfrew, MJ., Wade, A., Buchanan, P., Taylos, JL., Veitch, E., Rennie, AM., Crowther, SA., Neiman, S. & MacGillivray, S. 2017. Support for healthy breastfeeding mothers with healthy term babies. Cochrane Database of Systematic Reviews 2: CD001141. doi:10.1002/14651858.CD001141.pub5

Moore, ER., Bergman, N., Anderson, GC. & Medley,N. 2016. Early skin-to-skin contact for mothers and their healthy newborn infants (Review). Cochrane Database of Systematic Reviews, 11:CD003519. doi:10.1002/14651858.CD003519.pub4

Safari, K., Awaz Aziz, S., Shukir Saleem, H. & Moghaddam-Banaem, L. 2018. The effect of mother and newborn early skin-to-skin contact on initiation of breastfeeding, newborn temperature and duration of third stage of labour. International Breastfeeding Journal, 13, 32, DOI:10.1186/s13006-018-0174-9

Smith, E., Hurt, L., Chowdhury, R., Sihna, B., Fawzi, W.& Edmond, K. 2017. Delayed breastfeeding initiation and infant survival: a systematic review and meta-analysis. Plos One. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0180722

Smith, HA. & Becker, GE. 2016. Early additional food and fluids foe healthy breastfed full-term infants. Cochrane Database of Systematic Reviews, 8: CD006462. doi:10.1002/14651858.CD006462.pub4

UNICEF. 2005. International Code of Marketing of Breast-milk Substitutes. Accessed 14.05.2019. https://www.unicef.org/nutrition/files/State_of_the_Code_by_Country_April2011.pdf.

Uusitalo, L., Nyberg, H., Pelkonen, M., Sarlio-Lähteenkorva, S., Hakulinen-Viitanen, T. & Virtanen, S. 2012. Imeväisikäisten ruokinta Suomessa vuonna 2010. Terveyden ja hyvinvoinnin laitos. http://urn.fi/URN:ISBN:978-952-245-598-7.

World Bank. 2017. Mortality rate, infant (per 1,000 live births). Accessed 14.05.2019. https://data.worldbank.org/indicator/SP.DYN.IMRT.IN?locations=FI.

World Health Organization. 2017. Protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services, **Guideline.**http://www.who.int/nutrition/publications/guidelines/breastfeeding-facilities-maternity-newborn/en/

World Health Organization. 1981. International Code of Marketing of Breast-milk Substitutes. Geneva. Accessed 10.03.2019. https://www.who.int/nutrition/publications/code_english.pdf.

Tables

Appendices

Appendix 1: Breastfeeding counselling competences – questionnaire with informed consent

Imetysohjaus osaaminen-kysely

Hyvä Laurean terveydenhoitajaopiskelija!

Toivomme sinun vastaavan kyselyymme, jonka tarkoituksena on selvittää Laureassa opiskelevien terveydenhoitajaopiskelijoiden imetysohjausosaamista.

Kysely liittyy Laurea ammattikorkeakoulun YAMK-opinnäytetyöhön. Opinnäytetyön tarkoituksena on selvittää imetysohjauskoulutuksen käyneiden terveydenhoitajaopiskelijoiden tietoja, käytäntöjä ja asenteita imetysohjaukseen liittyen. Kyselyn tuloksia tullaan käyttämään koulutuksen kehittämisessä.

Tiedonkeruulle on saatu lupa Laurea ammattikorkeakoulun johdolta. Kyselyyn vastaaminen on vapaaehtoista. Vastauksia ja tuloksia käsitellään nimettömästi eikä niitä yhdistetä muihin tietoihin.

Suostumus tutkimukseen:

Minua on pyydetty osallistumaan yllämainittuun tutkimukseen, jonka tarkoituksena on selvittää imetysohjauskoulutuksen käyneiden terveydenhoitajaopiskelijoiden tietoja, käytäntöjä ja asenteita imetysohjaukseen liittyen. Olen lukenut ja ymmärtänyt saamani kirjallisen tutkimustiedotteen. Tiedotteesta olen saanut riittävän selvityksen tutkimuksesta ja sen yhteydessä suoritettavasta tietojen keräämisestä, käsittelystä ja luovuttamisesta. Olen tietoinen, että minulla on mahdollisuus esittää lisäkysymyksiä sähköpostilla. Minulla on ollut riittävästi aikaa harkita tutkimukseen osallistumistani. Olen saanut riittävästi tietoa oikeuksistani ja tutkimuksen tarkoituksesta.

Olen tietoinen, että tutkimukseen osallistuminen on vapaaehtoista ja voin keskeyttää osallistumiseni milloin tahansa. Ymmärrän, että tietojani käsitellään luottamuksellisesti, eikä niitä luovuteta ulkopuolisille.

Vastaamalla tähän kyselyyn annan tietoisen suostumukseni tutkimukseen osallistumisesta. Toivomme sinun vastaavan kyselyyn mahdollisimman pian.

Kyselyn tekijät:
Kati Bhattacharya Teija-Kaisa Aholaakko

YAMK-opiskelija
Laurea Tikkurila
Ratatie 22
01300 Vantaa

Yliopettaja
Laurea Tikkurila
Ratatie 22
01300 Vantaa

1. Vastaajan tiedot	Kysymys numero:	Vastausvaihtoehdot:
	1. Ikäni	Alle 20 vuotta 20-29 vuotta 30-39 vuotta 40-49 vuotta 50-59 vuotta
	2. Sukupuoleni	Nainen Mies Muu
	3. Kampus, jolla opiskelen Laureassa	Hyvinkää Lohja Otaniemi Porvoo Tikkurila
	4. Olen työskennellyt äitien ja vauvojen kanssa	<2 vuotta 2-4 vuotta >4 vuotta
	5. Olen itse imettänyt lasta	Kyllä En Ei koske minua
	6. Arvioin imetystietouteni	Erinomaiseksi Hyväksi Tyydyttäväksi Huonoksi
Imetysohjausosaaminen:		
Vastausvaihtoehdot:		1 täysin eri mieltä 2 3 4 5 täysin samaa mieltä.
8. On tärkeää, että vauva saa olla ihokontaktissa äitiin 24 tunnin kuluessa syntymästään.		1 2 3 4 5
9. Ohjaan odottavaa äitiä ottamaan vauvan ihokontaktiin mahdollisimman pian synnytyksen jälkeen.		1 2 3 4 5
10. Äidit, jotka ovat ihokontaktissa vauvansa kanssa 24 tunnin kuluessa synnytyksestä jatkavat imetystä pitempään kuin äidit, jotka pääsevät ihokontaktiin myöhemmin.		1 2 3 4 5
11. On tärkeää, että ensi-imetys tapahtuu tunnin sisällä syntymästä.		1 2 3 4 5
12. Ohjaan odottavaa äitiä imettämään ensimmäisen kerran tunnin sisällä syntymästä.		1 2 3 4 5

13. Tunnin sisällä syntymästä tapahtuva ensi-imetys vähentää vastasyntyneiden kuolleisuutta.	1 2 3 4 5
14. On tärkeää tukea äitejä imetyksessä neuvolavastaanotolla.	1 2 3 4 5
15. Tuen äitejä imetyksessä neuvolakäynneillä.	1 2 3 4 5
16. Ammattilaisten antama imetystuki pidentää imetyksen kestoa.	1 2 3 4 5
17. On tärkeää ohjata synnyttäneitä äitejä rintamaidon lypsämisessä.	1 2 3 4 5
18. Ohjaan tarvittaessa synnyttäneitä äitejä lypsämään rintamaitoa yksilöllisen tilanteen mukaan.	1 2 3 4 5
19. Rentoutustekniikat voivat parantaa maidoneritystä yhtä hyvin kuin sähköpumput.	1 2 3 4 5
20. On tärkeää, että vastasyntyneet ovat ympärivuorokautisessa vierihoidossa.	1 2 3 4 5
21. Ohjaan odottavia äitejä pitämään vastasyntyneen ympärivuorokautisessa vierihoidossa.	1 2 3 4 5
22. Sairaalassa vauvaansa vierihoitaneet äidit jatkavat täysimettämistä kotona todennäköisemmin kuin äidit, joiden vauva ei ollut vierihoidossa.	1 2 3 4 5
23. Vauvan tulee saada imeä rintaa aina halutessaan.	1 2 3 4 5
24. Ohjaan äitejä imettämään aina kun vauva ilmaisee halunsa imeä.	1 2 3 4 5
25. Vauvantahtisessa imetyksessä maitoa muodostuu vauvan tarpeisiin sopiva määrä. (	

Imeväisen ruokinta ja muut tarpeet.		
Vastausvaihtoehdot:		1 täysin eri mieltä 2 3 4 5 täysin samaa mieltä.
	26. On tärkeää, että vastasyntyneille annetaan äidinmaidon lisäksi muita ravinteita vain lääketieteellisistä syistä.	1 2 3 4 5
	27. Ohjaan äitejä täysimettämään vauvoja kuuden kuukauden ikään saakka.	1 2 3 4 5
	28. Kiinteän ruoan aloittamisesta ennen 6 kuukauden ikää ei ole mitään hyötyä.	1 2 3 4 5
	29. Äitien on tärkeää oppia lukemaan vauvan viestejä.	1 2 3 4 5
	30. Ohjaan odottaville äideille useita tapoja vastata vauvan viesteihin.	1 2 3 4 5

	31. Vauvan viesteihin vastaaminen vahvistaa äidin ja vauvan suhdetta sekä äidin itseluottamusta.	1 2 3 4 5
	32. Lisämaidon antaminen hörppyyttämällä on tuttipulloa parempi vaihtoehto.	1 2 3 4 5
	33. Kerron odottaville äideille lisämaidon antamisesta hörppyyttämällä tarvittaessa.	1 2 3 4 5
	34. Hörppyyttämällä lisämaitoa sairaalassa saaneet vauvat saavat todennäköisemmin rintamaitoa kolmekuukautisina kuin tuttipullosta lisämaitoa saaneet.	1 2 3 4 5
Imetystä tukevan ympäristön luominen		
Vastausvaihtoehdot:		1 täysin eri mieltä 2 3 4 5 täysin samaa mieltä.
	35. On tärkeää noudattaa kansainvälisen äidinmaidonkorvikkeiden markkinointikoodiin noudattamiseen.	1 2 3 4 5
	36. En ohjaa odottavia äitejä käyttämään äidinmaidonkorvikkeita.	1 2 3 4 5
	37. Kansainvälisen äidinmaidonkorvikkeiden markkinointikoodin tarkoituksena on turvata imeväisten oikeanlainen ravitsemus.	1 2 3 4 5
	38. On tärkeää, että terveydenhoitajat saavat koulutusta imetysohjauksessa.	1 2 3 4 5
	39. Pidän itseni ajan tasalla uusimmasta imetykseen liittyvästä tutkimusnäytöstä.	1 2 3 4 5
	40. Imetysohjauskoulutus perustuu ajantasaiseen näyttöön perustuvaan tietoon.	1 2 3 4 5
	41. Imetysohjaus on tärkeää aloittaa jo alkuraskaudessa.	1 2 3 4 5
	42. Kerron odottaville äideille imetyksen eduista.	1 2 3 4 5
	43. Imetys suojaa alle 2-vuotiaita korvatulehduksilta.	1 2 3 4 5

Appendix 2: Operationalization of the breastfeeding counselling competences questionnaire

Participant characteristics	Question and number	Operationalization	Reference
	1. Age	<20 years 20-29 years 30-39 years 40-49 years >50 years	Hall Moran et al 2000 / self-administered
	2. Sex	Female Male Other	Self-administered question
	3. Campus	Hyvinkää Lohja Otaniemi Porvoo Tikkurila	Self-administered question
	4. Years working with mothers and babies	<2 vuotta 2-4 vuotta >4 vuotta	Hall Moran et al. 2000/ self-administered question
	5. If have own children, did you breast feed?	Yes No Not applicable	Hall Moran et al. 2000/ self-administered question
	6. Self rating of own breast-feeding knowledge?	Excellent Good Satisfactory Poor Non-existent	Hall Moran et al. 2000/ self-administered question
Breast feeding competences	Statement number (focus on K= knowledge A = attitude B = self-reported behaviour)	Question operationalization	Reference supporting the importance of the issue
Competence area	VARIABLE name (8 chr)	1 Strongly disagree – 5 Strongly agree.	
1) **Support to initiate and establish breastfeeding.**	SUPSKINA 8. It is important that the infant can have skin-to-skin contact with the mother within 24 hours of birth.	1 2 3 4 5	Moore et al. 2016
	SUPSKINB 9. I guide the mother to take the infant on skin-to-skin contact as soon as possible after birth.	1 2 3 4 5	Moore et al. 2016
	SUPSKINK 10. Mothers who practice skin-to-skin contact with their infants within 24 hours of birth, continue breastfeeding longer than mothers who do it later.	1 2 3 4 5	Moore et al. 2016
	INBREFEA 11. It is important that breastfeeding initiation happens within 1 hour after birth.	1 2 3 4 5	Smith et al. 2017
	INBREFEB		

	12. I guide expectant mothers to initiate breastfeeding within 1 hour after birth.	1 2 3 4 5	Smith et al. 2017
	INBREFEK 13. Initiating breastfeeding within 1 hour of birth reduces infant mortality.	1 2 3 4 5	Smith et al. 2017
	PRACSUPA 14. It is important to support mothers in breastfeeding during post-natal care.	1 2 3 4 5	McFadden et al. 2017
	PRACSUPB 15. I support mothers in breastfeeding in post-natal care visits.	1 2 3 4 5	McFadden et al. 2017
	PRACSUPK 16. Breastfeeding support given by health care professionals extends the duration of breastfeeding.	1 2 3 4 5	McFadden et al. 2017
	MILKSUPA 17. It is important to guide mothers on expressing breast milk after giving birth.	1 2 3 4 5	Becker et al. 2016
	MILKSUPB 18. I guide mothers to express breast milk by their individual need.	1 2 3 4 5	Becker et al. 2016
	MILKSUPK 19. Relaxation techniques can increase milk secretion as much as electric pumps.	1 2 3 4 5	Becker et al. 2016
	SUPROOMA 20. It is important that newborns are rooming-in with their mothers around the clock.	1 2 3 4 5	Jaafar et al. 2016
	SUPROOMB 21. I guide expectant mothers to room-in with their newborns around the clock.	1 2 3 4 5	Jaafar et al. 2016
	SUPROOMK 22. Mothers who room-in with their newborns in the birth hospital continue exclusive breastfeeding more likely at home than mothers who didin't room-in.	1 2 3 4 5	Jaafar et al. 2016
	SUPDEMAA 23. Infant should be able to suckle at breast whenever he/she wants.	1 2 3 4 5	Fallon et al 2016.
	SUPDEMAB	1 2 3 4 5	

	24. I guide mothers to breastfeed every time the infant gives cues for suckling.		Fallon et al 2016.
	SUPDEMK 25. In baby-led breastfeeding the breast milk secretion is attuned to the infants needs.	1 2 3 4 5	Fallon et al 2016.
7. **Feeding practices and additional needs of infants**.	FEEDBREA 26. It is important that newborns are given additional feeds only if medically indicated.	1 2 3 4 5	Smith et al. 2016.
	FEEDBREB 27. I guide expectant mothers to exclusively breastfeed until 6 months of age.	1 2 3 4 5	Smith et al. 2016.
	FEEDBREK 28. Starting complimentary foods before 6 months of age does not have any benefits.	1 2 3 4 5	Smith et al. 2016.
	FEEDCUEA 29. It is important that mothers learn to read infant cues.	1 2 3 4 5	WHO 2017.
	FEEDCUEB 30. I guide expectant mothers several ways of responding to infant cues.	1 2 3 4 5	WHO 2017.
	FEEDCUEK 31. Responding to infant cues strengthens the bond between mother and infant and mothers confidence.	1 2 3 4 5	WHO 2017.
	FEEDCUPA 32. Giving additional feeds to infant by cup is better than by bottle.	1 2 3 4 5	Flint et al. 2016.
	FEEDCUPB 33. I guide expectant mothers to give additional feeds by cup feeding if needed.	1 2 3 4 5	Flint et al. 2016.
	FEEDCUPK 34. Infants receiving their supplemental feedings by cup are more likely to receive any breastmilk at three months age.	1 2 3 4 5	Flint et al. 2016.
8. **Creating an enabling environment**	ENABCODA 35. It is important to follow the principles of the International Code for Marketing Breast Milk Substitutes. ENABCODB	1 2 3 4 5	WHO 1981

	36. I do not guide expectant mothers to use breast milk substitutes.	1 2 3 4 5	WHO 1981
	ENABCODK 37. The purpose of the International Code for Marketing Breastmilk substitutes is to secure the right nutrition of infants.	1 2 3 4 5	WHO 1981
	ENABTRAA 38. It is important that Public Health Nurses get education on breastfeeding counselling.	1 2 3 4 5	self-administered
	ENABTRAB 39. I keep myself up to date on the new research evidence about breastfeeding.	1 2 3 4 5	self-administered
	ENABTRAK 40. Breastfeeding counselling course is based on current evidence-based knowledge.	1 2 3 4 5	self-administered
	ENABCOUA 41. It is important to start breastfeeding counselling in early pregnancy.	1 2 3 4 5	Victora et al. 2016
	ENABCOUB 42. I tell expectant mothers about the benefits of breastfeeding.	1 2 3 4 5	Victora et al. 2016
	ENABCOUK 43. Breastfeeding protects children under 2-years old from ear infections.	1 2 3 4 5	Victora et al. 2016

Appendix 3: Research permit application with GDPR

Tutkimuslupahakemuksen tulee sisältää ainakin seuraavat seikat.
Tarvittaessa voit antaa lisätietoja liitteessä

Nimi: Kati Bhattacharya	
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Päiväys:11.3.2019	
Työn [tutkimuksen, opinnäytetyön, jatkotutkinnon] tekijä/t:	***Kati Bhattacharya***
Koulutusohjelma/ korkeakoulu/ yliopisto:	***Masters Degree in Global Development and Management in Health Care, Laurea UAS***
Toimipiste:	***Tikkurila***
[tutkimuksen, opinnäytetyön, jatkotutkinnon] Ohjaaja/ohjaajat:	***Teija-Kaisa Aholaakko***
Työn/tutkimuksen nimi:	***Public Health Nurses' Competences in Breastfeeding Counselling***
Tavoitteet/ tutkimusongelma:	***The aim of this study is to assess the competences of Public Health Nurses graduated from Laurea UAS between 2013 and 2018 implementing breastfeeding counselling in their work. Objectives of this study are to assess the knowledge, behaviours and attitudes on protecting, promoting and supporting breastfeeding. The specific objectives are to:*** ***4. Compare the self-evaluated breastfeeding knowledge, behaviours and attitudes of public health nurses about supporting to initiate and establish breastfeeding according to age, gender, year of graduation, campus, working experience and own breastfeeding experience.***

	5. ***Compare the self-evaluated breastfeeding knowledge, behaviours and attitudes of public health nurses about breast feeding practices and additional needs of infants.*** 6. ***Compare the self-evaluated breastfeeding knowledge, behaviours and attitudes of public health nurses about creating an enabling environment for breastfeeding.***
Tarvittavien tietojen / aineistojen määrittely: ***Tarkka rajaus mitä tietoja tarvitaan, missä tiedostomuodossa ne tarvitaan ja miten tiedot toimitetaan tutkimusluvan hakijoille:***	***Tutkimusta varten tarvitaan kaikkien 658 Laureasta 1.1.2013-31.05.2018 valmistuneiden terveydenhoitajien sähköpostiosoitteet.*** Henkilötietolain (HetiL 523/99, 10 §) mukainen rekisteriseloste: 1. **Rekisterinpitäjät**: Kati Bhattacharya ja Teija-Kaisa Aholaakko, Laurea UAS Tikkurila, Ratatie 22, 01300 Vantaa. 2. **Yhteyshenkilöt**: Kati Bhattacharya, YAMK-opiskelija, Laurea UAS Tikkurila. Ratatie 22, 01300 VANTAA kati.bhattacharya@student.laurea.fi 3. **Rekisterin nimi:** Laureasta (2013-2018) valmistuneiden terveydenhoitajien sähköpostitietokanta, E-lomake kysely. 4. **Henkilötietojen käsittelyn tarkoitus** (rekisterinkäyttötarkoitus): Kerätä tietoja kyselytutkimusta varten: lähettää sähköpostilla pyyntö ja linkki E-lomakkeelle kyselytutkimukseen vastaamiseksi. Säilyttää vastaustietoja SPSS-matriisin muodossa Teija-Kaisa Aholaakon ja Kati Bhattacharyan tietokoneilla kunnes tulokset on analysoitu (31.05.2019 mennessä). 5. **Rekisterintietosisältö**: Laureasta vuosina 2013-2018 valmistuneiden terveydenhoitajien tiedot: henkilötiedot: nimi, sähköpostiosoite, 6. **Säännönmukaiset tietolähteet:** Vastaajaa koskevat tiedot (nimi ja sähköpostiosoite) saadaan Laurea AMK:n rekisteristä, opintotoimistosta. 7. **Säännönmukaiset tietojen luovutukset ja siirto EU:n tai Euroopan talousalueen ulkopuolelle**: Ei. 8. **Rekisterinsuojauksen periaatteet**: Sähköisesti tallennetut tiedot: Kyselylomakkeiden käsittely Laurean e-lomake-järjestelmässä vaatii käyttöoikeuden ja kirjautumisen järjestelmään (käyttäjätunnus-salasana-pari). Käyttöoikeus

	järjestelmään, e-lomakkeen käyttöympäristössä säilytettävään aineistoon ja henkilötietoihin, on vain Kati Bhattacharyalla ja Teija-Kaisa Aholaakolla. Aineistosta syntyneestä SPSS-matriisista vastaajia ei voida tunnistaa. 9. **Tiedot (henkilö- ja vastaustiedot) poistetaan** e-lomake-järjestelmästä opinnäytetyön tultua hyväksytyksi ja tallennetuksi Theseus-järjestelmään. E-lomakkeet ja sähköpostilistat hävitetään tulosten analysoimisen jälkeen kesäkuussa 2019.
Aikataulu (noin kahden kuukauden tarkkuudella):	***Kysely lähetetään terveydenhoitajille maaliskuussa 2019 ja vastausaika on kaksi viikkoa. Muistutuskysely lähetetään huhtikuun alussa 2019. Tulosten läpikäynnin ja tutkimuksen valmistumisen arvioitu ajankohta on 31.05.2019 mennessä.***
Liitteet (edellytetään: tutkimussuunnitelma, kyselylomake, teemahaastattelurunko jne.):	- ***Tutkimussuunnitelma*** - ***Kyselylomake***
Päätöksentekijä täyttää Laureassa	***Tutkimuslupa myönnetään*** ☐ ***Tutkimuslupaa ei myönnetä*** ☐ ***Perusteet***
Päätöksentekijä nimi ja päivämäärä	

Tutkimusluvan myöntämisen ja tietojen/aineiston luovuttamisen ehtona on se, että tutkimuksen/selvityksen tekijä sitoutuu huolehtimaan tietojen käsittelystä ottaen huomioon henkilötietojen käsittelyä ja yksityisyyden suojaa koskevan lainsäädännön. Tutkimuksen/selvityksen tekijä on velvollinen käyttämään tietoja/aineistoa luottamuksellisesti ja ainoastaan tämän tutkimuksen/selvityksen tekemiseksi sekä turvaamaan tarkastelemiensa henkilöiden intimiteetin ja anonymiteetin. Tutkimuksen/selvityksen toteuttamisen jälkeen aineisto hävitetään asianmukaisella tavalla.

Jos tutkimuksessa syntyy henkilötietolain mukainen henkilörekisteri, tulee liitteenä olla myös tieteellisen tutkimuksen rekisteriseloste (HetiL (523/99) 10§ ja 14§) tai rekisteriseloste (HetiL (523/99) 10§). Tarvittaessa hakemuksen liitteenä tulee olla myös tutkimuseettinen ennakkoarviointilausunto.

Tutkimusluvan hakija toimittaa myönteisen päätöksen henkilölle, joka vastaa aineiston luovuttamisesta Laurea-ammattikorkeakoulun sovelluksesta. Tässä yhteydessä tutkimusluvan saanut sopii myös esim. kyselyjen lähettämisen käytännön toteuttamisesta.

Appendix 4: Research permit

Tutkimuslupahakemus

1 (3)

Nimi: Kati Bhattacharya	
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Osoite:	
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[tutkimuksen, opinnäytetyön, jatkotutkinnon] Ohjaaja/ohjaajat:	***Teija-Kaisa Aholaakko***
Työn/tutkimuksen nimi:	***Public Health Nurse Students Competences in Breastfeeding Counselling***
Tavoitteet/ tutkimusongelma:	***The aim of this study is to assess the competences of Public Health Nurse Students studying in Laurea UAS who have participated in the breastfeed- ing counselling course. Objectives of this study are to assess the knowledge, behaviours and attitudes on protecting, promoting and sup- porting breastfeeding. The specific objectives are to:*** ***1. Compare the self-evaluated breastfeeding knowledge, behaviours and attitudes of public health nurse students about supporting to initiate and establish breastfeeding according to age, gender, year of graduation, campus, working experience and own breastfeeding experience.*** ***2. Compare the self-evaluated breastfeeding knowledge, behaviours and attitudes of public health nurse students about breast feeding practices and additional needs of infants.*** ***3. Compare the self-evaluated breastfeeding knowledge, behaviours and attitudes of public health nurse students about creating an ena- bling environment for breastfeeding.***

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	The results will be used in improving breastfeeding counselling education in Laurea UAS.		
Tarvittavien tieto- jen / aineistojen määrittely: Tarkka rajaus mitä tietoja tarvi- taan, missä tiedos- tomuodossa ne tar- vitaan ja miten tiedot toimitetaan tutkimusluvan ha- kijoille:	***Tutkimukseen vastataan Laurean E-lomakkeella, jonne opiskelijat pääse- vät saamansa linkin kautta. E-lomakkeesta ei selvitetä, eikä tallenneta IP- osoitteita. Linkin toimittamisesta opiskelijoille vastaa Laurea AMK:n terveydenhoitotyön lehtori.***		
Aikataulu (noin kahden kuukauden tarkkuudella):	***Kysely lähetetään terveydenhoitajaopiskelijoille huhtikuussa 2019 ja vastausaika on kaksi viikkoa. Tulosten läpikäynnin ja tutkimuksen valmistumisen arvioitu ajankohta on 31.05.2019 mennessä.***		
Liitteet (edellyte- tään: tutkimus- suunnitelma, kyse- lylomake, teema- haastattelurunko jne.):	- ***Tutkimussuunnitelma*** - ***Kyselylomake***		
Päätöksentekijä täyttää Laureassa	***Tutkimuslupa myönnetään***	***X***	***Tutkimuslupaa ei myön- netä*** _____
	Perusteet ***Edistää oppimistavoitteiden saavuttamista ja opetuksen kehittämistä***		
Päätöksentekijä nimi ja päivä- määrä	Antti Vettenranta 10.4.2019		

Tutkimusluvan myöntämisen ja tietojen/aineiston luovuttamisen ehtona on se, että tutkimuksen/selvityksen te- kijä sitoutuu huolehtimaan tietojen käsittelystä ottaen huomioon henkilötietojen käsittelyä ja yksityisyyden suo- jaa koskevan lainsäädännön. Tutkimuksen/selvityksen tekijä on velvollinen käyttämään tietoja/aineistoa luotta- muksellisesti ja ainoastaan tämän tutkimuksen/selvityksen tekemiseksi sekä turvaamaan tarkastelemiensa henki- löiden intimiteetin ja anonymiteetin. Tutkimuksen/selvityksen toteuttamisen jälkeen aineisto hävitetään asian- mukaisella tavalla.

Jos tutkimuksessa syntyy henkilötietolain mukainen henkilörekisteri, tulee liitteenä olla myös tieteellisen tutkimuksen rekisteriseloste (HetiL (523/99) 10§ ja 14§) tai rekisteriseloste (HetiL (523/99) 10§). Tarvittaessa hakemuksen liitteenä tulee olla myös tutkimuseettinen ennakkoarviointilausunto.

Tutkimusluvan hakija toimittaa myönteisen päätöksen henkilölle, joka vastaa aineiston luovuttamisesta Laurea-ammattikorkeakoulun sovelluksesta. Tässä yhteydessä tutkimusluvan saanut sopii myös esim. kyselyjen lähettämisen käytännön toteuttamisesta.