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“I Understood That We Can Ourselves Prepare for Pregnancy and Its Progress” – experienced benefits of Bailamama® 9Months class for pregnant women and mothers

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<p>The purpose of the thesis was to study the benefits which Bailamama® 9Months classes offer to pregnant women and women recovering from labor. Bailamama® is a Finnish health exercise concept which aims at improving both fitness level and wellbeing.</p> <p>The aim of this thesis was to provide Bailamama® with information that could be used to develop Bailamama® 9Months product even further. The aim of the thesis for the authors was to deepen their knowledge and gather knowledge about safe and beneficial physical activities during pregnancy. Based on the competences of KUAS, thesis writers aim to learn to analyze information critically, solve possible problems during thesis process and improve team working skills and be able to use gathered knowledge to the thesis. From the perspectives of the Kajaani University of Applied Sciences (KUAS) and Myötätuuli, a KUAS learning environment which offers health and physical services, the aim was to learn more about safe physical exercises during pregnancy, plan instructions considering pregnancy and use this thesis as a teaching material in lessons.</p> <p>This thesis applies both quantitative and qualitative research methods, and data was gathered with two questionnaires. The research group consisted of ten (N=10) women. Eight of the women were pregnant during the research period and two were recovering from labor. The research groups participated in the 9Months classes in Espoo and Rovaniemi. In Espoo the research period was five weeks and in Rovaniemi eight weeks.</p> <p>The research includes various results. The main result of the research is that every participant in the research groups were satisfied with the experienced benefits of Bailamama® 9Months classes. However, with the size of the research group (N=10), the results of this thesis cannot be generalized.</p>	
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## PREFACE

*“All that lives needs help from all the rest.”*

Bertold Brecht (1898-1956), German dramatist & poet

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## 1 INTRODUCTION

The memories of labour and pregnancy remain in a mother's body and mind the rest of her life. The pregnancy is a really hard and physically demanding time for an expectant mother. In some occasions, pregnancy gives energy but sometimes the experience is so painful that there is a need to hide it (Rautaparta 2010, 7).

Pregnant woman's body goes through various physiological and psychological changes; a body changes its shape, mood fluctuates, social contacts may be under pressure and lifestyle requires changes (Kaaaja 2005, 978). Pregnancy and labour is a positive experience for the mother, if she gets support, takes care of herself by being active with proper nutrition and gets enough information concerning the labour and the pregnancy (Par health nexus santé (n.d), 3).

Being physically active during pregnancy have many beneficial effects for the mother and the fetus. Physical activities increase woman's energetic level, improves the quality of sleep, relaxes the mind and body and enhances the body image (Pisano 2007, 7). Endurance, flexibility and strength training help to withstand excessive load when the body adapts to the demands of pregnancy and labor (Vepsä 2008). Physical exercises offer social interaction in group fitness classes or by doing physical activities with a friend. Interaction and having the feeling to be part of the group is important in developing and improving identity during pregnancy. Improving identity increases motivation and interest towards physical exercises (Kujala, Taimela & Vuori 2005, 629).

One important issue during pregnancy is to train pelvic floor muscles (PFM). Pelvic floor muscles help the mother in delivery especially, finding the right pushing direction and keeping the pelvic floor relaxed when needed (Deans 2004, 335). Bailamama® 9Months classes offer an opportunity to train pelvic floor muscles effectively which helps women to recognize their pelvic floor muscles. Women will learn to use their pelvic floor muscles and that will enhance women's capabilities to use pelvic floor muscles during the actual delivery.

The purpose of the thesis was to study the benefits which the Bailamama® 9Months classes offer to pregnant women and women recovering from labor. Bailamama® 9Months is a safe group exercise class, which is designed for pregnant women, but it is also good exercise for women who are recovering from labor. The class prepares pregnant women for childbirth

by practicing pelvic floor muscles, pushing positions and breathing techniques. A baby and mother's well-being and safety are taking into account in the content of the 9Months class.

The aim of this thesis was to provide Bailamama® with information that could be used to develop the Bailamama® 9Months product even further. The aim of the thesis for the authors was to deepen their knowledge and gather knowledge about safe and beneficial physical activities during pregnancy. From the perspectives of the Kajaani University of Applied Sciences (KUAS) and Myötätuuli, a KUAS learning environment which offers health and physical services, the aim was to learn more about safe physical exercises during pregnancy, plan instructions considering pregnancy and use this thesis as a teaching material in lessons.

## 2 PELVIC FLOOR MUSCLES

The pelvic floor muscle (PFM) group is shaped like a hammock. The PFM are organized into superficial and deep muscle layers, and they form a strong base in the lower part of the pelvis. The pelvic floor muscles are fastened to the pubis in the front, to the tailbone in the back and to the ischial tuberosities (sitting bones) sideways (Bi et al. 2013). The strong PFM helps to control the pelvic and the upper body (Ranta 2006, 80 - 81).

The PFM form the center of the body (Ranta 2006, 80 - 81). PFM provide a base to the organs to lie on; support the bladder and urethra, uterus, vagina and rectum. The PFM maintain bladder and bowel control and have an important role in sexual sensation and function (Tries, 2). The pelvic floor muscles support the spine together with the abdominal muscles, back muscles and diaphragm (Tries, 2).

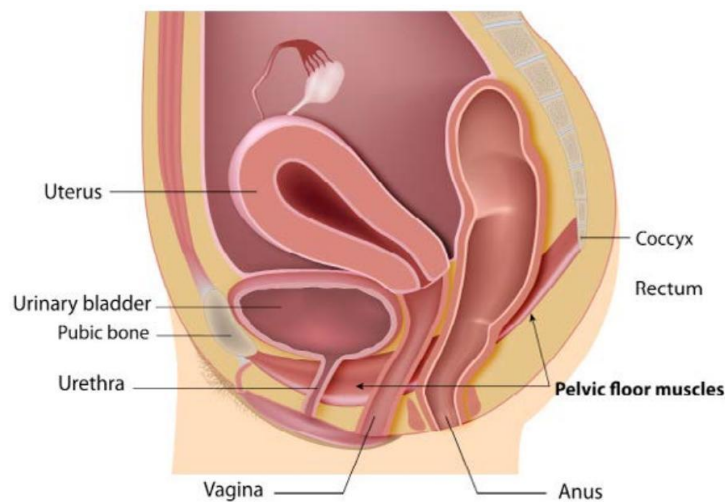


FIGURE 1. The pelvic floor muscles hold the bladder and urethra, the uterus, the vagina and the rectum (The University of Glasgow 2014).

Pelvic floor muscles stimulate when a person laughs, coughs, sneezes or lifts heavy loads. For instance weight gain, pregnancy, menopause and natural birth cause weakening of pelvic floor muscles. It means that the muscle group becomes overstretched or lax: PFM do not provide support to its contents and that may cause symptoms (Smith 2004).

The following chapter focuses on the importance of the pelvic floor muscles for woman's well-being and the benefits of practicing the muscles.

## 2.1 Importance of Pelvic Floor Muscles Function for a Woman's Wellbeing

The most common symptom of the weak PFM is incontinence. The incontinence means urine or/and stool involuntary leakage (Nilsson 2011, 206). Approximately every fifth woman suffers from incontinence in some stage of her life (Aukee & Penttinen 2000, 1853–1856). A research found that about 30% of over 45 years old Australian women has urine leakage during physical activities and approximately 13% of 18-23-year-old young women have same kind of symptoms (McKee 2014).

The proper function of the pelvic floor muscles has a significant role for woman's well-being (Smith 2004). According to women's health physiotherapist O'Dwyer (2014), "the pelvic floor problems affect a woman's quality of life and how she views her body" (McKee). The incontinence problems lower woman's self-esteem and overall well-being and affect as a barrier for instance in work and hobbies. Woman feels urinary incontinence problems as an embarrassing and shameful and it may isolate her from social situations (Salovaara 2014).

Pelvic floor muscles are the base for our upper body. PFM hold in place women's bladder and womb for instance. Together with back- and abdominal muscles, the strong PFM help to maintain a good posture. The symptoms caused by the bad posture may spread elsewhere to the body, for instance to the pelvis area and knees (Pisano 2007, 9). It is important to strengthen back muscles, abdominals and PFM according to the pregnancy, since the center of gravity changes a lot because of the weight gain.

A research done by Juvonen and Papinkivi (2009) researched possible effects of the pelvic floor muscle training for the sexual well-being. Five women were practicing the pelvic floor muscles during a half year. The research discovered that training the PFM improved women's self-esteem, body image and overall well-being. Women reported that they enjoyed more about sexual intercourse, had a greater organism intensity and also ejaculation and arousal became easier (32).

## 2.2 Importance of Practicing the Pelvic Floor Muscles during Pregnancy

The secretion of relaxin hormone increases during pregnancy, which leads to softening of the tissues of PFM. This natural occurrence prepares woman's body for the childbirth and it allows pelvic floor to stretch during delivery (Kingston 2010). The growing fetus, the placenta and amniotic fluids stretch the pelvic floor throughout the pregnancy (Rautaparta 2010, 39). In the delivery, the PFM stretch and that causes many common pelvic floor muscle problems. The problems that may occur are for instance reduced sensations or satisfaction during sex, loss of bladder or bowel control, and pelvic organ prolapse (Barlow, Fyle & Underdown 2012).

The strong pelvic floor muscles support the weight of the growing baby and help to push the baby in delivery (Deans 2004, 122). The strong PFM helps the mother to recover easier and faster from the labor, and reduce the risk of a bladder and bowel control problems (The continence foundation of Australia 2014, 7). The good PFM support the womb and bladder, enliven the blood circulation in pelvis area and decrease or prevent hemorrhoid. The well-working pelvic floor muscles help the mother in the delivery - especially finding the right pushing direction and keeping the pelvic floor relaxed when needed (Deans 2004, 335). As important as contracting the pelvic floor muscles, is to learn to relax them. Being capable to relax the PFM is beneficial in delivery; strained PFM slow the delivery and increase experienced pains (Rautaparta 2010, 39).

During the last stages of the pregnancy, some women start to suffer from incontinence problems while sneezing, laughing or moving suddenly. In the last stages of the pregnancy urine leakage is common because the growing uterus is putting more pressure to the bladder (Deans 2004, 68). Many researchers have found that urinary incontinence (stress urinary incontinence) is associated with pregnancy and childbirth (Herbert 2009, 38). Regular training of the pelvic floor muscles help with the stress incontinence problems (Deans 2004, 68). Vaginal delivery may damage the nerve system of PFM. If the nerve system of the PFM is damaged, woman feels hard to identify her pelvic floor muscles after giving a birth. Training pelvic floor muscles during the pregnancy helps woman to identify pelvic floor muscles after giving a birth (Dunkley 2000, 162–163; Pisano 2007, 60).

### 2.3 Identifying and Practicing Pelvic Floor Muscles

Pelvic floor muscles do not strengthen automatically along with physical exercises: that muscle group must be trained separately (Rautaparta 2010, 40). The functioning of pelvic floor muscles is volitional therefore the condition of PFM can be affected by regular training (Jaakkola 2015, 172). Before starting the PFM exercising, woman should first learn to find and locate her pelvic floor muscles (Rautaparta 2010, 40).

By identifying pelvic floor muscles, woman trains the correct muscle group and does not flex the muscles of the legs, buttocks or abdominals. Any other part of the body should not be contracted or move during pelvic floor muscle training (Pisano 2007, 61). One way to identify the pelvic floor muscles is to slow or stop the flow of urine (Barlow, Fyle & Underdown 2012). That is only a test and should not be used as an exercise (Pisano 2007, 61).

If perceiving the pelvic floor muscles is difficult, a woman can perform a finger or mirror test. In the finger test, clean fingers are placed to the vagina. If the contraction of PFM and a light suction inwards can be felt in fingers, pelvic floor muscles are in a satisfying condition. In a mirror test, the woman should see from the mirror the contraction of vagina and anus (Jaakkola 2015, 172). Contracting PFM feel like the whole pelvic floor muscle group is lifted up in the body (Pisano 2007, 61).

PFM muscles consist of both fast- (type II) and slow- (type I) twitch fibres. The slow- twitch fibres are characterized by a slow speed of contraction and fast-twitch fibres by a faster contractions (Smith 2004, 130). Because these types of twitch fibres, the pelvic floor muscles need different types of training: the fast twitch muscles need strength training and slow twitch muscles need endurance training (Heittola 1996, 51 – 52). The slow twitch fibres work as a postural muscle by supporting the pelvic organs and help keeping urine in the bladder. The fast twitch muscles contract strongly and quickly, and prevent the leakage of urine when sneezing, coughing, laughing or lifting something heavy (Medway Community Healthcare 2013).

It is recommended to do PFM exercises two to four times a week. Pelvic floor muscles atrophy the same way like for example biceps- or abdominals if they are not used regularly (Pisano 2007, 61). The PFM exercises require only a couple of minutes in a day. The PFM

muscles can be trained in different positions - while sitting, standing or lying (Oulun kaupunki (n.d)).

Since the training of PFM do not require much concentration, it is good to take the pelvic floor muscles exercising as a habit. The pelvic floor muscles can be trained while washing dishes or during other daily actions (Pisano 2007, 61). The training of pelvic floor muscles should be versatile by practicing endurance -, power- and maximum strength of the PFM muscles. That way the exercising gives the best results. During the training of the pelvic floor muscles woman should not hold the breath (Barlow, Fyle & Underdown 2012).

#### 2.4 Examples of Pelvic Floor Muscle Exercises

Training of the PFM muscles should be done in a diverse ways (figure 2). Strengthening of the PFM has the same principles like other muscle group: training must be ascending and regular. Positive result of the condition of pelvic floor muscles can be seen by regular training (Vesa 2014).

The endurance strength of PFM is required in daily life: while making love, holding the urge to pee and during running. The endurance strength of the pelvic floor muscles can be trained by holding a light contraction in the PFM approximately 10 - 20 seconds and having a pause for the same time. The exercise should be repeated at least eight times. If the time of contraction feels too challenging, it is possible to start with a shorter contraction time and increase the length of contraction gradually (Bailamama® instructor material 2014; Jaakkola 2015).

The power strength of PFM is needed whenever there is an increased abdominal pressure, for instance while coughing, laughing or sneezing. The power strength of the PFM can be trained by squeezing the pelvic floor muscles, blowing out sharply while holding the squeeze, and releasing the tension at the end. It is important to blow out powerfully to be able to increase the pressure towards the abdominals, and make the exercise even more effective. Between every contraction there should be a couple of seconds' long pause. The suitable repetitions for the pelvic floor muscle's power strength exercises are eight to ten (Bailamama® instructor material 2014).

Strength exercise, so called maximum strength of pelvic floor muscles is needed when lifting, pushing something heavy and when jumping. The maximum strength of the pelvic floor muscles can be trained by tensing the muscles intensively as fast as possible. The contraction should be kept for five seconds by following ten seconds long relaxation of PFM. Even though the maximum strength is trained with maximum contraction and as fast as possible, it is important not to hold the breath during the exercise (Bailamama® instructor material 2014).

FIGURE 2. Different ways of practising pelvic floor muscles (Bailamama® instructor material 2014).

	Endurance strength	Power Strength	Maximum strength
How to contract?	Holding a light contraction	Squeezing the pelvic floor muscles, blowing out sharply while holding the squeeze, and releasing the tension at the end	As fast as possible
Contraction time	10 - 20 second	Blowing time	For five seconds
Pause time	10 - 20 second (same time like contraction)	A couple of second long pause	Ten seconds
Repetitions	5 - 10	8 - 10	5

### 3 PREPARING FOR DELIVERY

The following chapter presents the different kind of pushing positions and breathing techniques which are important aspects to practice during pregnancy as preparing for the actual delivery.

#### 3.1 Pushing Positions

The labor is divided to three sections: dilating, - pushing, - and after the birth stage (Stakes 2008, 39). For the first-time mothers the labor lasts 6 to 20 hours and women who have given birth earlier labor may last 3 to 12 hours. The pushing stage starts after the cervix is totally dilated and not anymore in the front of baby's head. The pushing stage lasts for the first-time mothers 20 to 30 minutes and for women who have earlier given birth about 10 minutes (THL 2012). The second stage of labor lasts until the baby born (Raussi-Lehto 2009, 253). Practicing pushing positions during pregnancy will make it easier to use pushing positions in the actual labor (Raussi-Lehto 2009, 254).

##### 3.1.1 Half-Sitting Pushing Position

The most used pushing position in Finland is a half-sitting pushing position (Missonen & Väisänen 2008, 58). In the half-seated pushing position the mother is on the bed in the half-seated position. When the pregnant woman pushes, she takes a grip behind her hams. That allows the woman to use her own power effectively (Raussi-Lehto 2009, 254). In the half-seated pushing position the correct pushing position can be found easily because the head of the baby is putting pressure on the rectum. The half-seated pushing position is a good pushing position for the first-time mothers (Bailamama instructor material 2014).

### 3.1.2 Upright Pushing Position

The upright pushing position is a suitable pushing position for the mother and fetus in many ways: the second-degree strains are decreased, pushing time is shorter and there appear fewer pains (Missonen & Väisänen 2008, 58; Raussi-Lehto 2009, 254). The direction of pushing is easier to find than in other pushing position; the gravity help the baby to descend in the birth canal (Rautaparta 2010, 136 –141; WHO 1996). It is important to notice that the risk of bleeding is increased in the upright position as the pressure increases downwards (Missonen & Väisänen 2008, 58).

### 3.1.3 Side-Lying Pushing Position

In the side-lying pushing position the pelvis is widely open and the tailbone is able to move freely (Bailamama mastertrainer manual 2014). The side-lying pushing position is good to use when the mother start to feel tired or if a woman has had an epidural (Deans 2005, 221). According to WHO (World Health Organization) and RCM (Royal College of Midwives), many researchers have found out that side-lying pushing position is preferable than lying on stomach, especially in the second stage of labor (RCM 2008, 13; WHO 1996, 26). Side-lying position for instance protects perineum (WHO 1996, 26).

### 3.1.4 Squat Position

Giving the birth in the squat position is commonly used. The squat position is the best according to anatomy of birth canal as the pelvic floor stretches and relaxes. The squat position helps the baby to descend faster (Deans 2005, 220). There is a significant gravity advantage in the squat pushing position and that helps the woman to push (Bailamama mastertrainer manual 2014).

### 3.2 Breathing Technique

The breathing practices during the pregnancy aims at improving woman's capabilities to use the whole capacity of lungs (Rautaparta 2010, 26). According to the importance of correct breathing technique, woman is recommended to practice deep breathing during pregnancy. The practices include different breathing techniques and voice exercises (Rautaparta 2010, 131.) The delivery is a huge strain both mentally and physically. The suitable pain relief method for every mother during labor is decided together with parents, the midwife and the doctor. The labor pains are experienced differently depending on woman's pain threshold, tiredness, possible fears and uncertainty (THL 2012).

The correct, deep breathing technique relaxes the body (Vainio 2004, 112 - 113). The facile breathing is a typical for the western people as they use thorax-breathing. The deep breathing allows air to flow broader by making breathing more efficient (Vainio 2004, 112 - 113). The rhythmic breathing helps the mother to stay focused, retains mother's energy and decreases the possible muscular strains (THL 2012). Holding the breath and panting may be harmful and cause in long-lasting situation the lack of oxygen for the baby (Raussi-Lehto 2009, 247). The deep breathing technique is one of the non-medical pain releasing methods in labor (Iivanainen & Syväoja 2008, 558 - 559). The aim of non-medical pain method is to effect on woman's own resources and activates the hormones which release the pain (Rautaparta 2010, 121 - 122).

The gas and air is the first medical treatment method during contraction pains. The mask is put over the face when the contractions begin (Bailamama instructor education material 2014). The gas and air are taken through the right deep breathing technique. The gas and air (Entonox) is the mixture which includes oxygen, gas and air. The gas and air do not remove all pains but reduce and make pain more bearable (Rautaparta 2010, 121-122).

## 4 PHYSIOLOGICAL AND PSYCHOLOGICAL CHANGES DURING PREGNANCY

Pregnant woman's body goes through various physiological and psychological changes; the body adjusts itself to the strain of pregnancy and delivery. Changes in the expectant mother's body guarantees, that the fetus develops, receives oxygen and gets all essential nutrients (Kaaaja 2005, 978). The physiological and psychological changes are mainly caused by hormones. During pregnancy the production of hormones (estrogen, progesterone and relaxin) is increased and new hormones for example human chorionic gonadotropin hormone and human placental lactogen are produced especially because of pregnancy (Deans 2004, 60).

The following chapter focuses on physiological and psychological changes during pregnancy.

### 4.1 Posture and Back

Many researchers have discovered that about a half of women experience back pain at some point of the pregnancy (Olsson & Wikmar 2004, 351). Usually the back pains start during the second week of the pregnancy and the pains are most powerful during the last trimester (Alanen 1999, 1767). The increment of the total weight of pregnant woman's body is the main cause of back pains (Helin & Pakeneman 2004). The total weight gain during pregnancy varies from 8 to 16 kilograms (Suomalainen et al. 2012, 16).

Because of the increment of the total weight, the woman's center of gravity shifts forward and downwards (Jimoh 2013, 23). The postural changes increase significantly the lumbar lordosis findings during the last stages of the pregnancy. The lumbar lordosis is the arching of the lumbar region (figure 3) (Been & Kalichman 2014, 6).

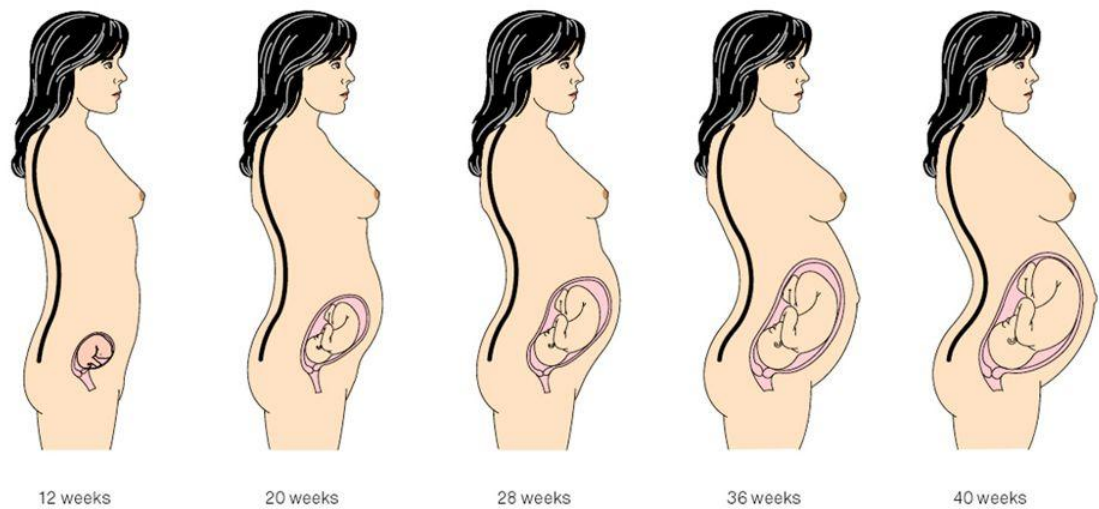


FIGURE 3. The postural changes during pregnancy weeks: the increased lordosis of the lumbosacral spine and the increased curvature of the thoracic area (Rath & Rath 1997).

Pregnant woman's lumbar lordosis findings are explained by backward leaning as woman must improve balance because of the added abdominal weight. The muscular imbalance between the weak abdominal, - and strong back muscles leads to increased lordosis findings. The hormones called relaxine and progesterone result in the lumbar lordosis by softening the ligaments during the last trimester of pregnancy and the hyperlaxity softens the paraspinal ligaments (Been & Kalichman 2014, 6).

Being physically active during the pregnancy decreases the possibility to have back problems. Taking care of back muscles decrease possibility of back pains (Pisano 2007, 14–15).

#### 4.2 Weight Gain

Weight gain during pregnancy varies individually (Päivänsara 2013, 75 - 76). An appropriate weight gain is important for a pregnant woman and her baby's health. Weight gain during pregnancy influences on both the pregnancy and post-partum period. If the woman gains too little weight, it can result to low birth weight of a baby. In the contrast, if the pregnant

woman gains too much weight considering a women's BMI recommendations, the risks of gestational diabetes, postpartum weight retention and preeclampsia are increased (Jones, Housman & McAleese 2010). The preeclampsia is the pregnancy-related disorder. The symptoms of preeclampsia are seizure or/and cerebral hemorrhage, which is the second common cause of maternal death in the USA (Schoenfeld 2011, 67).

Gaining too much weight increases the risks of birth defects, need for caesarean section and the baby also be born larger than average (macrosomia) (Institute of Medicine 2009; Jones et al. 2010). Being obese during pregnancy increases the risk that of baby will have type 2 diabetes and be over-weight later in his life (Eunice Kennedy Shiver National Institute of Child Health and Human Development 2010).

Losing weight during pregnancy is not suitable, but it is important to take attention to control the weight gain. If the woman is underweight in the beginning of the pregnancy, it is recommended that she gains weight more than in recommendations. Losing weight during the pregnancy is recommended only if the woman is morbidly overweight (Päivänsara 2013, 75 - 77).

Before the pregnancy the weight of the womb is approximately 50-70 grams. In the last stages of the pregnancy the womb weights about one kilogram. In the end of the pregnancy the placenta weights about 15% of the baby's weight, about 500 – 600 grams. During the pregnancy the volume of blood increases with 40 %. The amnion fluid is renewed every 2-3 hours. During the pregnancy week 38 the amount of amniotic fluids is biggest, about 1,5 liters (Eskola & Hytönen 2002, 111 - 112).

FIGURE 4. The example of total weight gain when baby's total birth weight was 3, 5 kilograms and the pregnant woman gained 12, 8 kilograms during the pregnancy (Ministry of Health 2014).

<b>Baby</b>	<b>3.5 kg</b>
<b>Fluid around the baby (Amniotic fluid)</b>	<b>0.9 kg</b>
<b>Placenta</b>	<b>0.7 kg</b>
<b>Growth of your womb (uterus)</b>	<b>0.9 kg</b>
<b>Growth of your breasts</b>	<b>1.1 kg</b>
<b>Increased amount of blood</b>	<b>1.5 kg</b>
<b>Increased amount of other body fluids</b>	<b>1.1 kg</b>
<b>Storing of nutrients (fat and protein)</b>	<b>3.1 kg</b>
<b>Total weight gain based on this example</b>	<b>12.8 kg</b>

Institute of Medicine (IOM) has reformed new guidelines (figure 5) for weight gain during the pregnancy. The new guidelines were published in 2009. The recommended weight gain during the pregnancy is based on woman's pre-pregnancy body mass index (BMI). The BMI is the weight (kg) divided by height in meters squared. The recommendations are different for every BMI groups. The table of recommendations (figure 5) can be seen below (Ministry of Health 2014).

FIGURE 5. The guidelines for weigh gain during pregnancy based on woman's pre-pre-pregnancy BMI (Ministry of Health 2014, 5).

<b>Pre-pregnancy BMI (kg/m<sup>2</sup>)</b>	<b>Total weight gain range (kg)</b>	<b>Rates of weight gain 2nd and 3rd trimester (mean range in kg/week)<sup>1</sup></b>
Underweight (< 18.5)	12.5–18	0.51 (0.44–0.58)
Healthy weight (18.5–24.9)	11.5–16	0.42 (0.35–0.50)
Overweight (25.0–29.9)	7–11.5	0.28 (0.23–0.33)
Obese (≥ 30.0)	5–9	0.22 (0.17–0.27)

A research done in New Zealand by Hooker (2013) found that almost 70 % (69, 4 %) of expectant mothers (N= 411) had the inappropriate weight gain during the pregnancy based on the recommendations of IOM (2009). The overweight women were identified more likely

to have the inappropriate weight gain compared to healthy women with the normal weight (44).

If woman expects twins, it is recommended that the pregnant woman gains more weight than in a single placenta pregnancy. That is because the twin born normally before the due date and a higher birth weight is essential for their health. In the gemini pregnancy average weight gain is about 600 grams in a week during the 13-20 pregnancy weeks. Compared to the single placenta pregnancy, the average weight gain is about 420 grams. The total weight gain of the woman who is expecting twins is about 10-12 kilograms (Paananen et al. 2012, 442).

### 4.3 Emotional Changes

The pregnancy is an important transitional phase in the woman's life. At the same time when body changes its shape, woman's emotions are like a roller coaster: the feelings range from happiness to sadness and back. At no other time in the woman's life, does she experience as powerful hormonal fluctuations as during the pregnancy (Haataja 2001, 9). The powerful emotional changes are caused by the hormonal changes or emotional responses to the new lifestyle or combination of both (Deans 2004, 151).

Behind the emotional sensitization is a hormonal, biological background. The woman prepares to be emotional for her baby's needs and feelings: the pregnant woman is tuning herself to the same level with the baby to be capable to understand baby's needs (Rouhe, Saisto & Toivanen 2013, 197). All variations of the feelings during the pregnancy are individual (Joensuun kaupunki 2014).

The pregnancy is divided to three trimesters: the first-, the second- and third trimesters. The first trimester includes pregnancy weeks 1 - 13, the second trimester of weeks 14 - 26 and the third trimester weeks 27 - 42 (Pisano 2007). The following chapter presents emotional changes during different trimesters and which issues may affect on emotional changes.

#### 4.3.1 First Trimester (1 to 13 weeks)

The knowledge of being pregnant arouses many kinds of feelings: unbalance, upheavals and ambivalence feelings are common in the beginning of the pregnancy (Eskola & Hytönen 1997, 128). Even though the pregnancy is planned, woman feels scared and worried about many issues: baby's health, losing the own freedom, relationship, and labor, losing the workplace or being left alone (Rautaparta 2010, 19). The pregnant woman can feel unreal that inside of her body is growing up the baby (Brodèn 2006, 67; Haataja 2011, 12).

In the early stages of pregnancy, woman may have lowering of mood because of the increased progesterone production. If the woman has suffered depression earlier in the life, it is more likely that she gets depressed during the pregnancy (Jyväskylän yhteistoiminta-alueen terveystakeskus (n.d)). The expectant mother feel pressure to change her lifestyle to be healthier and safer for a baby: nutrition, physical activities, medicines, stimulants, travelling and workplace are under every day judgments (Rouhe et al. 2013, 22). Being afraid of miscarriage is part of the first trimester. When pregnancy develops, the possibility of miscarriage decreases and the woman has the courage to engage with the baby (Rouhe et al. 2013, 22).

The pregnant woman's feelings are sensitive: woman's capability to deal with disappointments decreases. Sleeping problems are common and concentration appears hard. A perception ability changes, senses become more sensitized, smells feel more powerful and the powerful effects and changes of feelings amaze woman and people around her (Rouhe et al. 2013, 22). The relationships of many couples are challenged during the pregnancy (Barlow, Fyle & Underdown 2012, 4).

#### 4.3.2 Second Trimester (14 to 26 weeks)

The pregnant women feel the second trimester emotionally more balanced time than the first trimester; the woman is getting familiar with being pregnant and the expectant mother starts to feel baby's movements. Feeling baby's movements make a woman more confident that she is becoming a mother (Rouhe et al. 2013, 24). The middle phase of the pregnancy is normally more tolerable because the nausea and tiredness get easier. For most women the second trimester is energetic and creative time (Rautaparta 2010, 16). Some women experi-

ence this phase different. As the body changes its shape, woman gains weight and belly grows. Some pregnant women are worried about their changing body and feel ugly and fat. Other pregnant women find that as a freedom and they feel sexier than ever before during the life (Rautaparta 2010, 16).

During the second trimester, the pregnant woman starts to create her own model of being mother: “What kind of mother I will be, what kind of family we will be?” are common thoughts. The meaning of that stage is to shape woman’s identity as a mother, which normally includes thinking about the relationship to woman’s own mother (Rouhe et al. 2013, 24).

#### 4.3.3 Third Trimester (27 to 42 Weeks)

The labor is not far away as the woman reaches the third trimester. The pregnant women start to worry about labor, take care of the baby or other issues connected to changing life situation (Region of Waterloo (n.d). As the reality of soon born baby increases, parents must sacrifice their individual freedom and taking care of only themselves. The pregnant woman’s whole life will change from economic situation to social life. These kinds of worries may results as nightmares (Rouhe et al. 2013, 26).

Based on the estimation, over 40% of women suffer some kind of mental symptoms, such sleeping problems, anxiety, insecurity or overemphasized worries of own and baby’s health (Katajamäki & Gylden 2009, 34). In the last stage of the pregnancy, the pregnant woman is more defenseless and vulnerable. A woman can be easily get hurt by others words, actions or the lack of them (Haataja 2011, 14).

## 5 SOCIAL SUPPORT DURING PREGNANCY

Pregnancy is a challenging and stressful experience because of the huge life changes of woman's body, lifestyle, relationships and future (Par health nexus santé (n.d), 3)). Researches and surveys have discovered that many women suffer from depression and anxiety during pregnancy. A study from 1996 found that approximately 15% of pregnant women have serious feelings of anxiety, stress or depression (Barlow et al. 2012, 8).

A research discovers that pregnant women have a need to get information, control and support during the pregnancy and birth (Dixon, Skinner, & Foureur 2013, 15). Women, who get support during the pregnancy, are less likely to experience depression (Rouhe et al. 2013, 23). Having a chance to speak and share feelings about pregnancy with a partner and other close people support the upcoming life to be a parent (Rouhe et al. 2013, 26).

According to Glazier, Elgar, Goel and Holzaphel (2004), "a study by Collins and colleagues found that women who received better social support during the pregnancy also had better labor progress, had babies with higher Apgar ratings of neurological development, and experienced fewer symptoms of postpartum depression" (248). APGAR ratings measure the overall health of the baby in one and five minute ages. The sectors of evaluating are for instance: the frequency of heart beat, breathing, reaction to stimulus and the color of the skin (Järvi et al. 2012, 37).

In the optimal situation, the pregnant woman's relationships provide a buffer against the stress and anxiety (Campos, Dunkel-Schetter & Abdou 2008, 155). The social support means both verbal and non-verbal information and advice, concrete help and action, which a person can receive in a social interaction (Gottlieb 1983, 28 – 29). Having a good relationship to own partner, help an expectant mother to grow up to motherhood. That increases the woman's overall well-being. The relationship of partner changes during pregnancy from two adults' relationship to three persons' relationship, and it brings new challenges (Rouhe et al. 2013, 28).

It is a natural occurrence that pregnant woman has a lot of thoughts and worries about child's health, own abilities to take care of the child and the changing relationship to partner. If the woman can get support to her feelings from friends or other mothers, it will let the pregnant woman understand that it is normal to have mood changes and different kind of

worries and thoughts (Par health nexus santé (n.d), 6; Haataja 2011, 12). The expectant mothers may find other pregnant women for example in new activities (Rouhe et al. 2013, 28).

It is typical for expectant mother to be scared of the pregnancy and labor, and think that everything can go wrong. Those kinds of thoughts reject pregnant woman to be happy about upcoming baby. The fears towards pregnancy exhaust the mother and on that occasion, woman should look for help and support for fears from other mothers, friends and maternity clinics (Rouhe et al. 2013, 24).

## 6 PHYSICAL ACTIVITIES DURING PREGNANCY

Finnish expectant mothers gain nowadays more weight than in 1960. The unsuitable weight gain during pregnancy result as an obesity after postpartum period. The excess weight gain increases the risk of chronic disease, breast cancer, diabetes and coronary heart disease. Being physically active helps controlling the weight after the pregnancy (Kinnunen & Luoto 2004, 4734). A research by Field (2001) investigated pregnant women's exercising habits and found that approximately 40% of pregnant women are physically active during pregnancy although 92% of expectant mothers were encouraged to be physically active by their physicians (405).

During the early stages of pregnancy, changes in the woman's body are only positive considering the physical performance: the blood volume increases and the amount of blood which the heart pumps in one time is increased (Bennett & Brown 1993, 98). A research (N=19) done by Cioffi et al (2010) discovered that expectant mothers were extremely motivated to be physically active because of perceived benefits both for themselves and the fetus. The pregnant women mentioned both psychological and physical benefits. The women expressed to believe that being physically active during the pregnancy prepares them for the hard work of labor and recover more quickly from the labor (5).

The following chapter focuses on recommendations, - and safe physical activities during pregnancy.

### 6.1 Recommendations

It is challenging to present absolute recommendations of physical exercise for a pregnant woman because every expectant mother is an individual and every pregnancy is different. Some pregnant woman feels bad during the whole pregnancy, other one is energetic and in a good mood (Jaakkola 2015, 141). Based on the UKK Institute's physical activity recommendations, the expectant mother is mainly able to follow the normal physical activity recommendations for adults. If the pregnant woman has been inactive before the pregnancy, doing physical activities should be started slowly, increasing the amount and the intensive level of activity step by step (UKK- Institute 2011).

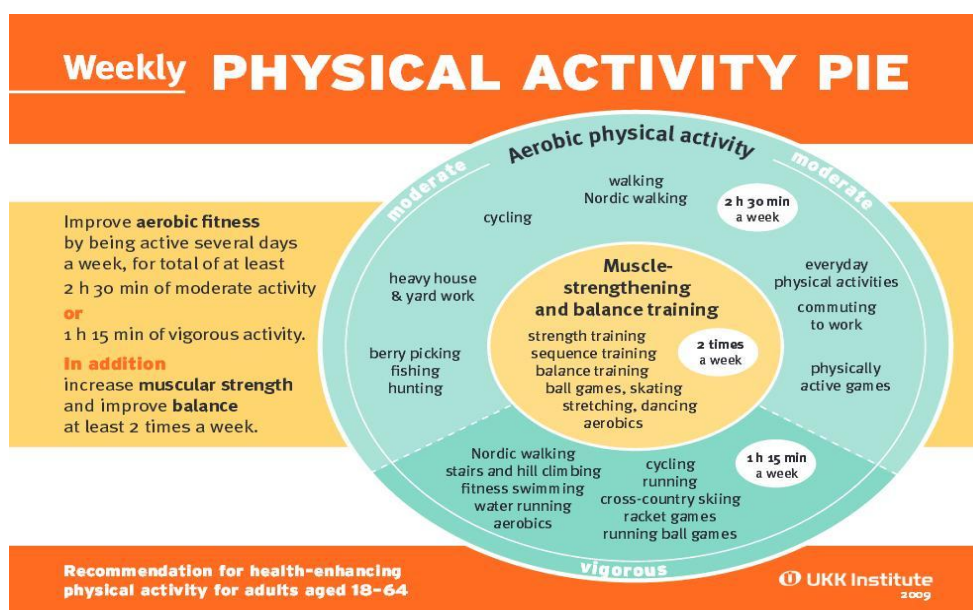


FIGURE 6. The pregnant women can mainly follow the normal physical recommendations, which are targeted for adults (UKK Institute 2009).

The UKK Institute recommends becoming lightly out of the breath at least two and a half hours in a week. The physical activities should include muscular strength exercises twice a week and aerobic exercises several times a week. The suitable aerobic exercises are for example swimming, cross country skiing and fast-paced walking (UKK- institute 2011).

Maintaining the good muscular strength is important during the pregnancy; a woman has to carry the extra kilograms in her body. The good muscle strength helps mother in a daily life with baby, when she needs to take care of the child (Deans 2004, 287). The muscular strength exercises support the strength of posture, which easily collapses during the pregnancy. When muscular strength is maintained during the pregnancy, recovering from delivery is faster and it is easier to carry and lift the baby (Jaakkola 2015, 147).

Although being physically active during the pregnancy is important, there still must be enough time for the rest. In addition to night's sleep, woman needs resting during the day-time. The resting eases heart's working and promotes the blood circulation of the womb by guaranteeing that the placenta and fetus gets enough oxygen and nutrients (Eskola & Hytönen 2002, 122).

## 6.2 Safe Physical Activities

The safe physical exercising must always be started with a proper warm-up. There is an increased risk for having injuries if the warm-up is ignored before the actual physical exercise session (Soratie & Viljanen 2014). The warming-up prepares the body, mind, muscles and the blood circulatory system for the upcoming physical activity (Pisano 2007). The warming-up of muscles and joints before activity can be done with slow movements, for example by walking, marching or bicycling. Stretching after the exercising prevents the muscle soreness and promotes the recovering from the exercise (Mottola 2009).

The expectant mother is recommended to avoid physical activities which include jumps and rapid direction changes (UKK Institute 2011). The risk of strains and falling downs are increased as hormones loosen ligaments for instance of ankles (Ihme & Rainto 2014, 268). The list of avoided physical activities includes for example ice hockey, floorball, horseback riding, martial arts and downhill skiing (UKK Institute 2011). The softened ligaments do not support the body parts as much as before pregnancy. Thus, it is important to train flexibility and do stretching. During the pregnancy especially hip flexors, buttocks, quadriceps and chest muscles tighten and those muscle groups should be highlighted in stretching (Pisano 2007, 7, 14–15).

The growing uterus stretches abdomen that there appears a gap between the two sides of the rectus abdominis muscles. Because of the powerful stretch of rectus abdominals, training of the abdominals is not recommended except exercising the deep abdominal muscles. The strong deep abdominal muscles support the growing womb and effect in a positive way to woman's posture (Rautaparta 2010, 15, 42). The positions where the womb is under the press must be avoided. After 16<sup>th</sup> week of the pregnancy, woman should avoid doing exercises on her back; the growing womb pressures the big blood vessels of pelvis which affect as temporary declining of blood pressure and cause nausea (Eskola & Hytönen 2002, 122).

In the last stages of the pregnancy physical exercises which slosh womb powerfully should be replaced for less strained exercises. For instance jogging should be replaced for walking (ACOG 2002; Sällylä 1999, 29). If the activity cause pains, it should be ended. The physical activity must be ended immediately if the woman feels problems or pains during exercising. The examples of cautionary signs are: headache or changes of vision, swelling of ankles, face

or hands, bloody discharge from the vagina, heart palpitation or chest pain, pain in abdominal area and sudden faintness or dizziness (Deans 2003, 117).

The pregnant woman needs more liquids during exercising; dehydration increases the risk of having accidents and injuries. The inappropriate hydration decreases the elasticity of muscles and weakens woman's concentration (Janouch 2010, 182). Because of the weight gain, the woman's center of gravity changes and maintaining the balance is harder than before the pregnancy (ACOG 2002; Päiväsara 2013, 121). The loss of liquids during physical exercise varies from a half liter to three liter in hour, depending on the intensity of exercise and the temperature of air. The best liquid during physical exercises is water (Päiväsara 2013, 31 – 33).

The body temperature must be taken into account as well. The body's temperature is higher during the pregnancy, and that must take into account especially during the first trimester. The upper boundary of body temperature is 38, 7 °C. The temperature of fetus arouses in the same relation with a mother and too high temperature is dangerous for the fetus (Järvi et al. 2012, 33). Although it is recommended to be physically active during the pregnancy, woman should ask advice from a healthcare provider. Especially if the woman has been physically inactive before the pregnancy, there is increased need for getting proper advice about starting exercising (Deans 2003, 117).

### 6.3 Benefits of Physical Activity for the Pregnant Woman

Being physically active during the pregnancy has several positive effects for the pregnant woman. The physical activities improve overall well-being, cardiovascular function, decrease the musculoskeletal discomfort, and reduce the muscle cramps and lower limb edema. The active lifestyle lowers the possibility of gestational hypertension and diabetes (Field 2001, 401). A regular exercising improves posture, the woman's mood and the quality of sleep, decreases the possibility of constipations, and improves the knowledge of body (Pisano 2007, 7). By improving endurance, flexibility and muscle strength physical activities help the woman to withstand the excessive load, when the body adapts to the demands of pregnancy and labor (Vepsä 2008).

The pregnant woman may experience the back pains especially while sitting, standing up, carrying or lifting something heavy. Nowadays monitor working has become more and more common and thus sitting in one place has increased. Sitting a long time in one place is a strain issue for the pregnant woman; it loads back and causes the swellings of limbs (Siitonen 2004, 11–12). Being physically active decreases the possibility to have swelling of feet, which is a normal situation during the pregnancy (Sydänliitto (n.d)).

The mood fluctuations are normal occurrence during pregnancy. The examples of negative mood symptoms are somatic complaints, anxiety and fatigue. Those symptoms vary between the stages of the pregnancy: the first, - and the third trimesters are the hardest phases of mood fluctuations. It has evidenced that being physically active is an efficient way to prevent or treat depression and anxiety. Being physically active increases the woman's energetic level, reduce stress and improve self-esteem (Pivarnik et al. 2006, 999).

By learning to accept own changing pregnant body, the woman is able to feel the pregnancy as a positive experience. By effecting on own body's well-being and look, it increases the feeling to be able to control the situation of the changing body (Paavilainen 2003, 68). A research discovered that pregnant women who were physically active during pregnancy had remarkable better body image than non-exercisers. It has researched that the expectant women who exercised at least 1, 5 hours a week at moderate intensity level were significantly happier and satisfied with their bodies than the women who were doing exercises in a low intensity level (Schoenfeld 2011, 68).

Being physically active helps woman to control her weight (Pisano 2007, 7). If the prenatal woman gains weight over recommended weight gain scale, there is a risk of having the pregnancy time diabetes and coronary heart diseases – pregnancy hypertension (Pisano 2007). Being physically active decreases the sugar level in the blood and blood pressure stays balanced (Women and newborn health service 2013). Women does not feel so tired and they are able to sleep better. Physical activities improve person's muscle fitness. Being physically active during pregnancy decreases the possibility to have back problems. Maintaining the muscle strength of back muscles during pregnancy decreases the possibility of back pains (Pisano 2007, 14–15).

The physical exercises offer a social interaction. The interaction and feeling to be part of the group or exercising with a friend develops and improves a woman's identity. Improving

identity adds motivation and interest towards physical exercises (Kujala, Taimela & Vuori 2005, 629).

#### 6.4 Benefits of Physical Activity for the Fetus

The fetus benefits as the woman is physically active during the pregnancy. The physical exercises release the satisfaction hormone called endorphin and it is transported to the baby. The endorphin hormone which is released during physical activity raise up baby's mood. The effect of endorphin lasts even eight hours (Stoppard 1994, 127). The safe physical exercises calms and swings the baby. During the physical exercise the circulation of blood is an ideal and it effects positively on the baby's growth and development. The blood circulation is increased in the womb and baby gets oxygen and nutrients in a more effective way (Päivänsara 2013, 81). It has researched that the active pregnant women have a bigger placenta and the blood circulation of placenta is greater even in the rest compared to the inactive pregnant women (Berghäll & Jussila 2011).

It is important to pay attention of the intensity and the heart beat level during exercising: because of the risk of premature birth during the first, - and third trimesters of pregnancy (Päivänsara 2013, 82 – 85). It has investigated that the heartbeat of fetus lowers down if a pregnant woman is physically active in a high intensity level (80-90% of maximum heartbeat, so that the maintenance of performance is difficult). The high intensity level exercising is dangerous for the fetus (Jaakkola 2015, 143). The high intensity level exercising decreases the amount of fat tissues of the baby, and decrease babies born weight (Päivänsara 2013, 82 - 85).

The fetus's heart beat rises up when the pregnant woman is active. The recommendation of the safe heart rate level during the physical exercise is not to be greater than 150 beats per minute over 15 minutes. The blood flow to the womb slower down and the heart rate of fetus will get slower if the woman's heart rate stays continuously too high. Interval-type training is suitable because the heart rate is fluctuating constantly (Bailamama instructor material 2014). As the heart rate is individual for every person, an exact rule of safe heart rate level is difficult to give (Pisano 2007, 8).

A good measurement for suitable physical activity intensive level is a RPE (Rate of perceived exertion). The RPE scale means person's own feelings about intensiveness of the physical activity. The lowest value in RPE scale is 6, and the highest 20. The number six (6) means resting and the extremity value twenty (20) express the physical activities in the maximal level. The woman who has been inactive before pregnancy, the recommended intensive level of training is 11-12. That level means for instance walking so that the woman is able to speak during the walk. If the woman has been active before the pregnancy, the intensive level is suitable to be about 13-15 in the RPE scale (Jaakkola 2015, 142 - 143).

## 7 BAILAMAMA®

Bailamama® is a Finnish health exercise concept which aims at improving both the fitness level and wellbeing. Bailamama® focuses especially on helping the woman to identify and exercise the pelvic floor muscles. Bailamama® is created by physiotherapist Maija Kiljunen and midwife Emilia Ek in conjunction with the Finnish health professionals and sport science experts. Bailamama® classes started in Finland 2011 and nowadays Bailamama® has spread in Europe. Bailamama classes can be found for example in Spain, Estonia, Belgium and Great Britain (Bailamama® 2014).

Bailamama® is a new, fun and exciting way to exercise woman's one of the most important muscle group, the pelvic floor muscles. Bailamama® classes are interval-type training which consist of the five sections. Although Bailamama® concept concentrates on the PFM training, there is also taken into account many other public health concerns: the neck- and shoulder pains, onset of incontinence and osteoporosis (Bailamama® 2014). The ideology of Bailamama® is to increase the power of femininity, positivity and learn to respect and enjoy one's own body. In Bailamama® class woman is encouraged to enjoy her own body and find her inner beauty. Living in the moment is one emphasized part of the Bailamama ideology (Bailamama® 2014).

Bailamama® offer three different group exercise classes: Bailamama® Women, Bailamama® 9Months and Bailamama® Baby. Bailamama® Women class is targeted to all women despite of woman's age and fitness level. Bailamama® Baby is mother and baby's shared class, where the mother has an effective physical exercise together with the baby. Bailamama® 9Months class, which the thesis is based on is a group fitness class for the prenatal women and women who are recovering from the labor (Bailamama® 2014). Bailamama® was awarded as the best Finnish sport product 2014 by a media. Also Bailamama® Women was rewarded as the best Finnish sport product, based on its service and the concept (Testing Lab 2015).

## 7.1 BAILAMAMA® 9Months

Bailamama® 9Months class is the safe group exercise class, which is designed for pregnant women to maintain or improve their overall health and well-being. The class prepares pregnant ladies to the childbirth by emphasizing the importance of the pelvic floor muscles, pushing positions and breathing techniques. Even though the class is organized to meet the needs of pregnant woman, it is also suitable exercise form to mother who is recovering from the delivery (Bailamama instructor material 2014).

Bailamama® 9Months class is planned to the pregnant woman and many issues considering the baby and mother's well-being and safety are taken into account. That can be seen from the controlled changes of the heart rate and selection of the exercises. The class is interval-type training; it is important to keep the mother's heart rate safe and not too high for a long period of time. If the pregnant woman is working out in a heart rate level over than 60% of maximum heart rate, the fetus' heart rate is increased by 10 - 20 heart beats per minute. The mother's heart rate should not be over than 60% of maximum heart rate, for longer than 15 minutes continuous time period. This way the safety of the fetus is guaranteed during the exercise (Bailamama® Mastertrainer manual).

Bailamama® 9Months class does not include abdominal exercises; they are not recommended to be practiced because of the growing stomach and diverge in abdominals (Bailamama® instructor material 2014). Bailamama® 9Months class does not include any jumps, because jumping is dangerous for the mother and the baby; for instance the placenta can be detached. During the 55 minutes long class the position of the body is changed many times so that the vena cava is not under the pressure of the heavy womb. By changing the position several times and by using side-lying position instead of lying on the back, the nausea is minimized during 9Months class.

## 7.2 Structure of BAILAMAMA® 9Months Classes

The structure of Bailamama® 9Months class is divided into the five different parts: warm-up, balance, slow, baila circle, cool down and stretching. Bailamama® 9Months class includes: 20% hot and fun moves, 30% power training of pelvic floor muscles, 25% preparing

exercises to the delivery and 25% relaxation and feeling good (Bailamama® instructor material 2014). The following chapter presents the content of 9Months classes.

### 7.2.1 Warm-Up

The warm-up is a really important part of the work out. During the warm-up the body's temperature and heart rate are increased gradually which ensures that the exercise is safe. The warm-up should last five to fifteen minutes (Fradkin, Zazryn & Smoliga 2010). In Bailamama® 9Months classes the warm-up consists of easy dancing patterns, where the body is waken up smoothly and the heart beat is raised up gradually. The wide and smooth movements warm up the joints and the music raise woman's feeling and get her mentally ready for the exercise. The length of the warm-up is about ten minutes (Bailamama® instructor material 2014).

### 7.2.2 Balance

The second section of Bailamama® 9Month class is concentrated on woman's balance. The pregnant woman gains weight eight to sixteen kilograms. The weight gain changes woman's center of gravity massively (Bailamama® mastertrainer material, 5). It may be difficult for the pregnant woman to adapt to this change and perceive own changing body. The balance part of Bailamama® 9Months class helps to minimize possible balance problems. The balance exercises help the pregnant woman to adapt to her changing body and improve her body awareness (Bailamama® instructor material 2014).

### 7.2.3 Slow Part

The slow part of Bailamama® 9Months class prepares and trains the woman for the upcoming child birth. In the slow part pelvic floor muscles are trained effectively and aided by the deep breathing technique. During Bailamama® 9Months class the pelvic floor muscles are exercised in the different pushing position. That way the pushing positions are familiar for the woman before the actual delivery. Practicing different kind of pushing positions during

pregnancy strengthen the muscles needed in the childbirth. Especially the muscle groups which are needed in the labor are strengthened in the slow section: hip flexors, pelvic floor muscles, quadriceps and biceps femoris and buttock muscles (Bailamama® instructor material 2014).

The slow part includes the muscle strength exercises which prepares woman to take care of the newborn, adapt to physiological changes of pregnancy and maintain the overall muscular strength. By increasing the muscle strength, woman feels easier to carry the weight of the growing stomach and have energy to be active through the pregnancy (Bailamama® instructor material 2014).

#### 7.2.4 Baila Circle

The ideology of Bailamama® includes important messages for instance about woman's energy, positivity and seeing the beauty of one's own body. The baila circle is a fun and energetic dance part of the work out, where the heart rate is increased one last time during the class. The baila circle emphasizes the woman's energy and belonging together. The women of 9Months class are placed in a circle, facing each other; the circle formation increases the feeling of social cohesion and peer support. In this part woman can live in the moment and enjoy the shared time with other women (Bailamama® instructor material 2014).

#### 7.2.5 Stretching

In the stretching part, the body starts to cool down from the exercise. The stretching part consists of long and calm stretches. In the stretching section especially the muscle groups which are needed in the labor are stretched carefully: hip flexors, pelvic floor, quadriceps and biceps femoris, and buttock muscles. The stretching part includes either mobility exercise for the spine or for the sacroiliac joint. By stretching the spine and sacroiliac joint the natural flexibility of the spine is maintained (Bailamama® instructor material 2014).

The last section of 9Months class includes an opening exercise for the pelvis which is especially meant for woman who is pregnant and getting ready for the delivery. The pelvis open-

ing exercise relaxes the body and with the help of deep breathing, different kinds of tensions are released from the body and muscles (Bailamama instructor material 2014).

## 8 RESEARCH TASKS

The purpose of the thesis was to study the benefits which Bailamama® 9Months classes offer to pregnant women and for women recovering from labor. Both possible mental and physical benefits of Bailamama® 9Months class were researched.

The aim of this thesis was to provide Bailamama® with a new researched information that could be used to develop the Bailamama® 9Months product even further. The aim of the thesis for the authors was to deepen their knowledge and gather knowledge about safe and beneficial physical activities during pregnancy. From the perspectives of the Kajaani University of Applied Sciences (KUAS) and Myötätuuli, a KUAS learning environment which offers health and physical services, the aim was to learn more about safe physical exercises during pregnancy, plan instructions considering pregnancy and use this thesis as a teaching material in lessons.

The research questions of thesis are separated to four different sections: pelvic floor muscles (PFM), preparing for the delivery, Bailamama® and physiological changes.

### Pelvic floor muscles (PFM)

1. Did dysfunctions of PFM change after Bailamama® 9Months classes and did women feel to recognize the difference between contraction and relaxation of PFM?

Based on the research and theoretical knowledge, thesis authors assume that possible dysfunction of PFM will be decreased in Bailamama® 9Months class. However, in the last stages of the pregnancy urine leakage is common because the growing uterus is putting more pressure to the bladder (Deans 2004, 68). Based on that, thesis authors suppose that dysfunctions will not be decreased so remarkably, since the pregnancy progress further.

Based on the theoretical knowledge, three weeks training of PFM improves the condition of PFM. Thesis authors assume that women learn to realize and recognize the difference between contraction and relaxation of PFM. Thesis authors think that the results will not be so remarkable in Espoo compared to Rovaniemi; the research period in Espoo is three weeks shorter. Based on the research about Bailamama Women class, thesis authors believe that most of women are able to contract and relax PFM and feel the difference (Aho et al. 2014).

The PFM training still needs to be continuous, to see the PFM training results and maintain the good condition of PFM. Practicing PFM is the main part of 9Months lesson so many benefits of practicing will be seen.

2. Did customers get more knowledge about the location of pelvic floor muscle?

Based on the Bailamama® Women research, thesis authors believe that women's knowledge about the location of PFM will increase significantly during the research period (Aho et al. 2014). In Bailamama® 9Months class information of the PFM location is shared to the customers and this information is repeated during each session.

Preparing for delivery

3. Did customers gain more knowledge about the right breathing technique used during the contraction pains and when inhaling gas and air?

Thesis authors assume that women will gain a lot of knowledge about the breathing techniques because the exercises of PFM are aided by deep breathing technique. Thesis authors assume that women who have given birth before the research time will not gain so much new knowledge of breathing techniques compared to first-time mothers (Bailamama® instructor material 2014).

4. Did women gain more knowledge about the different pushing positions and how important they felt practicing them?

Thesis authors believe that women will gain a lot of knowledge about different kind of pushing positions because PFM are practiced in different pushing positions in Bailamama® 9Months class. Practicing PFM is the main part of 9Months lesson so many benefits of practicing can be seen (Bailamama® instructor material 2014). Women, who have given birth before the research period, may have more knowledge about pushing positions than first-time mothers. For that reason thesis authors assume that results of this research question will not show so big improvements.

Thesis authors assume that first-time mothers have more need to get advice for pushing positions compared to women who have given birth already before the research period. Thesis authors believe that the need of advice varies individually so that will effect on gathered results.

Based on the theoretical knowledge practicing pushing positions during the pregnancy will make it easier to use pushing positions in the actual labor (Raussi-Lehto 2009, 254). Thesis authors assume that women feel practicing of pushing positions important, since most of them have not given birth before and they do not have any experience about different pushing positions.

5. Did women's possible fears towards childbirth change?

Based on the research about pregnant women's need to get information and support during pregnancy, thesis authors assume that getting proper advice during pregnancy may decrease women's fears toward childbirth (Dixon, Skinner, & Foureur 2013, 15). Thus, thesis authors believe that women's fears towards childbirth will decrease.

6. Did women feel the pelvis opening exercise to be important according to childbirth?

Based on the feedback which other thesis writer as an instructor has received from Bailamama clients, thesis authors believe that women will feel the pelvis opening exercise to be beneficial for them. Pelvis opening exercise prepare pregnant women to the delivery and relaxes the whole body (Bailamama® instructor material 2014).

Bailamama®

7. Did women feel to get peer support from Bailamama® 9 Months lessons and would pregnant women recommend Bailamama® 9Months lessons for other pregnant women?

Based on the theoretical literature those pregnant women gets peer support through new activities, thesis authors assume that women feel to get peer support in 9Months classes (Rouhe et al. 2013, 28). The fourth part of 9Months class, baila circle, increases the social cohesiveness. Baila circle includes the feeling of social cohesion and peer support through fun and easy dance steps in a circle form (Bailamama® instructor material 2014). Thesis authors assume that women will get peer support in 9Months classes but the experienced peer support may varies between individuals. Experienced peer support can vary for instance according to women's own personality.

Thesis authors believe that women will recommend the 9Months class for pregnant women because of possible achieved benefits of the class. Also the concept is a unique: thesis au-

thors assume that women enjoy about the exercising and gain many benefits from the 9Months class. Bailamama® 9Months class is planned to meet the needs of pregnant women, and this guarantees safe physical exercises for the women and the fetus.

#### Physiological changes

8. Did women feel that their possible lower back pains and neck-shoulder pains change during the research period?

Thesis authors do not assume that possible lower back pains will decrease during the class; the increment of the total weight causes back pains and postural changes increase the lumbar lordosis findings (Been & Kalichman 2014, 6; Helin & Pakeneman 2004). The improvements of back condition will likely happen for women who are recovering from labor based on the knowledge that taking care of the condition of back muscles decreases the possibility to have back pains (Pisano 2007, 14–15).

Thesis authors assume that because of postural changes of pregnant women's body, possible neck-shoulder pains do not decrease (Helin & Pakeneman 2004). Thesis authors believe that the slow part of 9Months class help to maintain the muscle strength but the improvements are not remarkable because of various physiological changes of pregnant women's body. Thesis authors assume that possible improvements about condition of neck-shoulder pains are seen in the case of women who are recovering from labor.

## 9 RESEARCH METHOD

The following chapter focuses on the data collection method of the research, the research group, and overall thesis process and data analysis.

### 9.1 Data Collection

This thesis applies both a quantitative and qualitative research methods. The data of the research was gathered with two questionnaires. Both questionnaires included open, - and closed-ended questions. The quantitative research method is applied in structured questions. In close-ended questions the participants of the research selected the most suitable answer of the given options. A Likert's scale was used in the close-ended questions. According to Heikkilä (2010), "the Likert's scale is normally 4-or 5 order scale, where other extremity is completely agree (or agree) and another extremity completely disagree (or disagree) (53).

The research has characteristics of the qualitative research method: women's feelings and experiences were researched with open-ended questions. With open-ended questions thesis authors wanted to gather deeper information and allow respondents express their views and opinions openly. The research groups were filling out the questionnaires during their leisure time because answering to open-ended questions need harder thinking and more time. That also provided more reliable results. After answering the questionnaires, respondents were sending the questionnaire forms to thesis authors by post. Both questionnaire forms were paper versions and filled out with a pencil.

The starting point of the study is to describe the real life. In the qualitative research a person is the most important source of information. The subject is aimed to be investigated comprehensively (Heikkilä 2010, 16). By using both the quantitative and qualitative research methods, the results of research support each other. Collecting the results by using quantitative method made possible to do comparison between the first and second questionnaires. The open-ended questions gave a qualitative data which allowed gaining more knowledge about women's feelings and experiences of the phenomenon.

A typical aspect of the qualitative research is a small, discretionary chosen sample group, which is analysed as thoroughly as possible (Heikkilä 2010, 17). In the research the size of sample group is ten (N=10) and it is aimed to be researched in an exact way. The target of qualitative research is not make statistical generalization. The aim is to describe phenomenon, understand the action or give theoretically reasonable interpretation for phenomenon. Thus, it is important that research group knows about the researched phenomenon and that they have experience about the topic (Sarajärvi & Tuomi 2006, 87-88).

The research questions were based on the research problems, theoretical background, hopes of Bailamama® and the content of 9Months class. The gained knowledge and theory of Bailamama® 9Months instructor education was used when planning and forming the questionnaires. Bailamama® developers checked the questionnaires before sending them to the research groups. The questionnaires were tested with a group of people to ensure them to be understandable. The questionnaire forms were sent by post to the instructors of Bailamama® 9Months class in Espoo and Rovaniemi. Each member who took part of this research filled out two separated questionnaires, in the beginning and in the end of the research period.

The meaning of the first questionnaire was to gather research groups' basic information and knowledge about pelvic floor muscles, preparing for the delivery and physiological condition. Thesis authors clarified women's knowledge and information of PFM by researching: the knowledge about location of PFM, feeling the difference between the contraction and relaxation of PFM and possible dysfunctions of PFM. Thesis authors gathered the research groups' knowledge about breathing techniques, different pushing positions and how women feel to have received advice about pushing positions and breathing techniques. Also women's physiological condition and physical exercise habits were researched.

The second questionnaire included all the same questions like the first questionnaire. By comparing answers of first-, and the last questionnaires, the possible changes of research groups' opinions and knowledge are seen. With the second questionnaire thesis authors clarified phenomenon which were not aimed at doing comparison but describe how women feel that the class has been beneficial for them after the research period. For instance, the pelvis opening exercise, peer support and satisfaction of 9Months classes were researched in the second questionnaire.

## 9.2 The Design and Construction of Questionnaires

Bailamama® 9Months is a safe group exercise class to pregnant women and women recovering from labor. The questionnaire forms were designed based on the research problems, content of 9Months class, theoretical background and hopes of Bailamama®. All in all the thesis included thirteen research questions.

### 9.2.1 Pelvic Floor Muscles

It is important to recognize the difference between contraction and relaxation of PFM to be able to use PFM effectively in labor. Training PFM helps woman to find the right pushing direction and keep the pelvic floor relaxed when needed (Deans 2004, 335). During the 9Months class the importance of the pelvic floor muscles is emphasized. According to this aspect, possible changes of women's knowledge and functioning of PFM during the research period were investigated by research question: "did women feel to realize the difference between contraction and relaxation of PFM?" The location of PFM was researched because the knowledge of the location of PFM helps to contract the muscle group in labor (Bailamama mastertrainer manual 2014).

During the last stages of the pregnancy some women start to suffer from incontinence problems while sneezing, laughing or performing sudden movements. In the last stages of the pregnancy urine leakage is common because the growing uterus pressures the bladder (Deans 2004, 68). Because of this common occurrence thesis authors researched the changes of urine leakage by research question: "did dysfunctions of PFM change after Bailamama® 9Months classes?"

### 9.2.2 Preparing for Delivery

Practicing pushing positions during pregnancy is important; pushing positions may not be familiar for the woman. Practicing pushing positions during gestation helps woman to find the most suitable pushing position and feel more self-confident considering the actual delivery (Raussi-Lehto 2009, 254). 9Months classes prepare pregnant woman to labor by empha-

sizing the importance of pushing positions and breathing techniques. Pushing positions are in a big role in Bailamama® 9Months class and because of that, thesis authors researched how women's knowledge of pushing positions changes during the research period. Based on the benefits of practicing pushing positions during pregnancy, one research question was: "did women gain more knowledge about the different pushing positions?"

During the 9Months classes PFM exercises are performed in different pushing positions. In the research thesis authors investigated women's feelings towards practicing pushing positions during pregnancy. The research question was: "did women feel important to practice pushing positions during pregnancy?" By comparing the results of the first and last questionnaire thesis authors were able to see possible attitude changes during the research period. As practicing pushing positions is one main part in 9Months classes, thesis authors researched that did women feel to receive enough advice for pushing positions in 9Months classes. The form of the question was: "did women feel to get enough advice for different kind of pushing positions?"

Breathing practices aims at improving women's capabilities to use the whole capacity of lungs. Correct breathing technique decreases exhaustion, improves metabolism and posture. The deep breathing helps woman to relax during the pregnancy and decrease stress (Rautaparta 2010, 26.) In Bailamama® 9Months classes, deep breathing technique is practiced based on the researched benefits of correct breathing technique. The research question was: "did customers gain more knowledge about the right breathing technique used during the contraction pains and when inhaling gas and air?" According to that, thesis authors researched if women have gained knowledge about breathing techniques in 9Months classes.

It is normal occurrence to be scared of the pregnancy and labor, and have thoughts that everything might go wrong. The fears towards the pregnancy exhaust the mother and in that occasion, woman should look for help and support for fears from other mothers, friends and maternity clinics (Rouhe et al. 2013, 24). Because fears limit pregnant woman's quality of pregnancy, possible changes of women's fears during the research period were investigated by research question: "did women's possible fears towards childbirth change?" This research question was related to other research questions: peer support, gaining more knowledge of labor and having proper advice in 9Months class may lower women's fears towards childbirth.

### 9.2.3 Bailamama® 9Months

According to Glazier et al. (2004), “a study by Collins and colleagues found that women who received better social support during pregnancy had better labor progress” (248). In the optimal situation, a pregnant woman’s relationships provide a buffer against the stress and anxiety (Campos et al 2008, 155). Social support means both verbal and non-verbal information and advice, concrete help and action, which a person can receive in a social interaction (Gottlieb 1983, 28 – 29). Bailamama® 9Months classes offer a good opportunity for pregnant woman and for woman who is recovering from the pregnancy to meet other women in a similar situation. A woman can receive advices or concrete help to issues related to pregnancy and labor. In the last questionnaire of the study women’s feelings of received peer support in 9Months classes were clarified by research question: “did women feel to have peer support from Bailmama® 9 Months lessons?” Because of the various benefits of peer support during pregnancy that research question was included to the survey.

The satisfaction and benefits of Bailamama® 9Months classes were clarified by getting the overall image of how important and beneficial women feel the class to be for them. The research question of the research was: “would pregnant women recommend Bailamama® 9Months lessons for pregnant women?” The results of that question will give valuable feedback and information for Bailamama® developers. With this researched knowledge the possible improvements of 9Months can be done.

### 9.2.4 Physiological Changes

Slow part of 9Months class includes muscle strength exercises which prepares woman to take care of the newborn, adapt to physiological changes of pregnancy and maintain overall muscular strength. By maintaining the muscle strength women find it easier to carry the weight of the growing stomach and have energy to be active through the pregnancy time (Bailamama® instructor material 2014). Considering muscle strength exercises during 9Months classes thesis authors researched in the study that have possible neck-shoulder, - and lower back pains changed during the research period. The research questions were: “did women feel that their possible neck-shoulder pains change during the research period?” and “did women feel that their possible lower back pains change during the research period?”

All results of research questions which are mentioned above are important to be researched. The results give valuable information for Bailamama® to develop the product further.

### 9.3 Research Group

The research group consisted of ten (N=10) women: eight women were pregnant and two women were recovering from the pregnancy. The research groups were participating in Bailamama® 9Months lessons in Rovaniemi and Espoo. The research period in Rovaniemi was eight weeks, including one Bailamama® lesson in a week. The research period in Espoo was five weeks and during that time, there was arranged one Bailamama® 9Months lesson in a week.

The respondents of those locations were chosen because the good and suitable timing: Bailamama® 9Months classes in Rovaniemi and Espoo were starting when the first questionnaire was completed and tested to be well-working. Thesis authors took contact to the instructors of Bailamama® 9Months classes in Rovaniemi and Espoo and they provided to research their clients. The results of Espoo and Rovaniemi are separated because the different length of research period may effect on achieved benefits of 9Months classes.

The average age of research group was 26, 5 years. Five of women were first-time mothers and other half of the women had already one to two children. Two women of the research group were recovering from labor. Every woman's pregnancy had progressed normally. Anyone of participants had never been taken part to the Bailamama® classes before the research. Seven (N=7) participants of the research group were from Rovaniemi and three (N=3) participants were from Espoo. All in all, sixteen (N=16) women participated to the research. Six women did not fill out the last questionnaire, so their results are not presented in the results.

### 9.4 Thesis Process

The thesis process (figure 7) started in October 2014 by thinking about the interesting topic in thesis lessons in Kajaani University of Applied Sciences. Both thesis authors have the similar interest towards the pregnancy and being physically active during gestation. That was

the reason why the thesis was decided to write together. Bailamama® provided the topic of thesis and thesis authors started working with this fascinating study. Both thesis authors completed Bailamama® 9Months instructor education in Oulu in the end of November 2014. The education of Bailamama® 9Months supported to research the survey more in a reliable and an exact way as gaining more knowledge about the Bailamama® concept, the structure of 9Months lesson and theoretical background of it.

After having the thesis topic idea, thesis authors took closer look at planning the research. The first important issue was to create the schedule for the thesis that it will be done within the given time. Planning the schedule allowed to have enough time to discuss about the research and think about results clearly and deeply without rush. Before starting to write the final thesis and plan the questionnaire forms, the thesis supervisor gave feedback about the thesis plan. Looking for the researches and literature materials were started during the thesis plan process. Those sources were used in the final thesis as a theoretical background. The theoretical background of thesis was decided to include: physiological and psychological changes during pregnancy, pelvic floor muscles and its training, preparing for the delivery, social support and physical exercising during pregnancy. The study is based on Bailamama® 9Months class so the concept of Bailamama® and its classes were clarified.

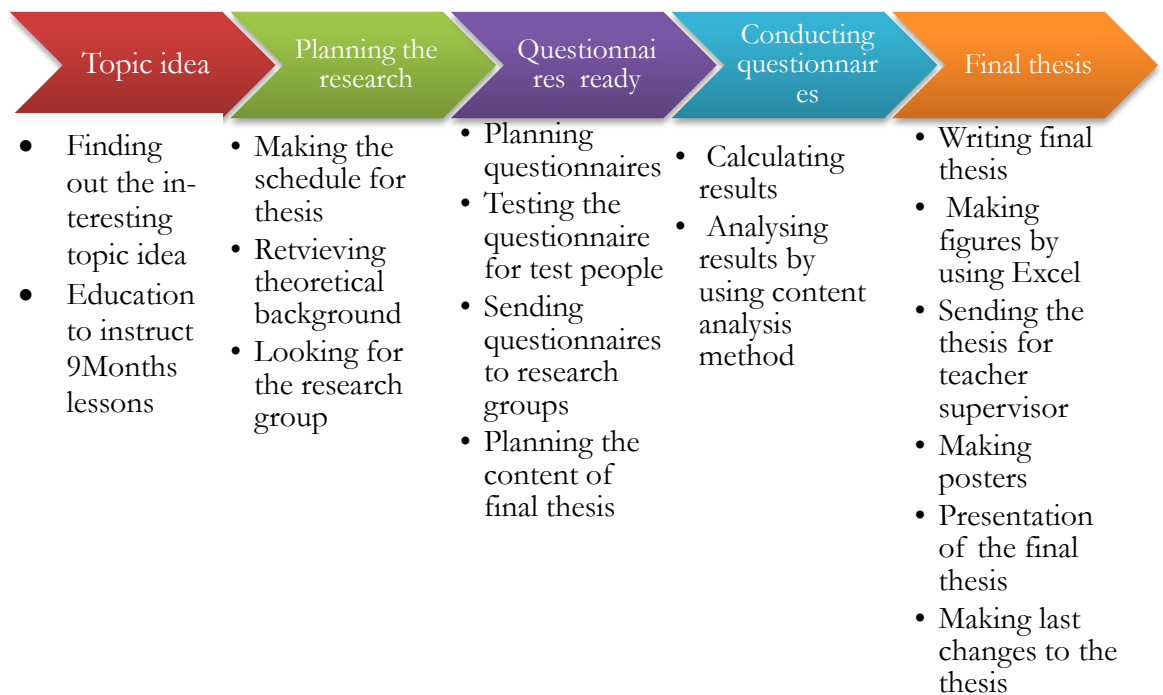
The first the plan was to arrange Bailamama® 9Months classes by thesis authors in Kajaani. As not getting enough participants to the 9Months class, thesis authors decided to send questionnaires to other 9Months groups. The reason for not getting enough participants to 9Months class in Kajaani was mainly thesis authors' mistake; marketing of the class was started too late. Bailamama instructors have their own Facebook- group page. Through that channel thesis authors asked if some of the instructors have Bailamama® 9Months courses starting during the thesis time. The research groups were founded from Rovaniemi and Espoo.

The hardest process was to create questionnaires to research groups. It is important that everybody is able to understand the questions clearly and find out the suitable answer from given options. The questionnaires were tested with a group of people to ensure that the questionnaire forms were well-working. Thesis committee Bailamama® inspected the questionnaires that there were included all research questions that are important and valuable to research.

In the middle of April, thesis authors received the questionnaires from Rovaniemi and Espoo by post. The questionnaires were analyzed by using an inductive content analysis method.

As results of the research questions were analyzed (more about that in the chapter 8.4), the results were written down to the final thesis template and started to make figures of results by using Excel program. In the week 18, the first version of final thesis was sent to the peer, - and teacher supervisor that they were able to give feedback about thesis. In the week 19, the poster of thesis was made and 13<sup>th</sup> of May the final thesis was presented to the supervisor and classmates. During the presentation thesis authors received feedback of the thesis. In the week 20, the final version of thesis was returned after making the last modifications to the thesis.

FIGURE 7. Bailamama 9Months thesis process presented as a table step by step.



## 9.5 Data Analysis

The data of thesis was collected by two questionnaires. The open-ended questions were analyzed by using an inductive content analysis method. The inductive content analysis means the method, where the answer of research question is founded by interpretation and deduction. The intercourse between the researched phenomenon is described clearly (Tuomi & Sarajärvi 2013, 91 - 116). The open-ended questions were analyzed case-by-case and looking for the similarities of women's answers. When thesis authors analyzed for instance results about knowledge of PFM muscles location, thesis authors analyzed every participant's answer and looked for similarities of those. That allowed us to notice how big amount of women are with the same opinion of the phenomenon.

The open-ended questions provided important comments and opinions from research group, which are showed as citations in the results chapter (chapter number 10). The inductive content analysis method fits to the study because the goal was to express the achieved results in an exact way as possible with citations of research groups' experiences.

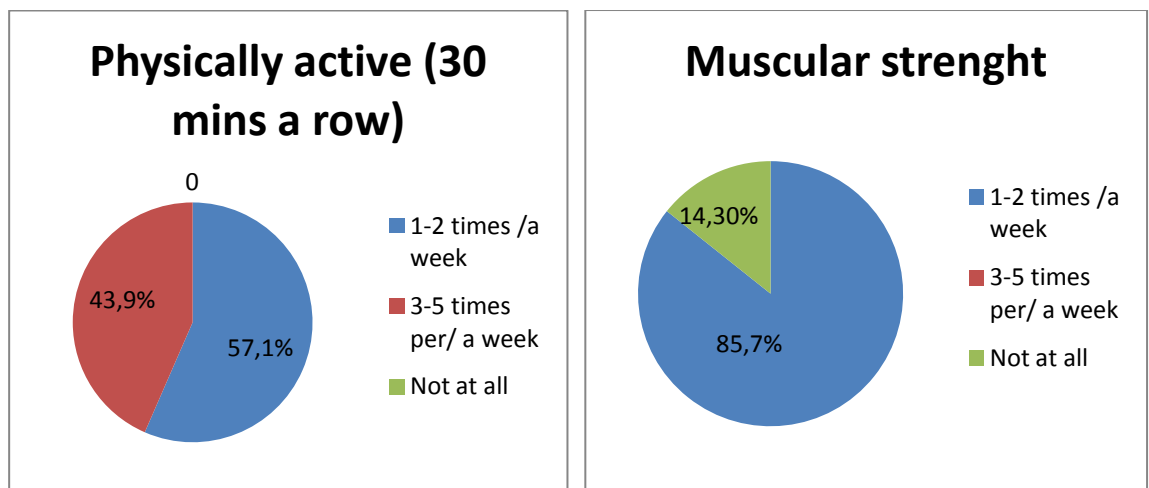
Because of the small size of research group (N=10), results were counted by calculator and combined to empty paper. After calculations, the figures of the results were made by Excel program. The results of calculations are showed with bar charts. The results of Espoo and Rovaniemi research group were separated and thesis authors concentrated to one research question at a time. The results are reported as figures and percent (%).

## 10 RESULTS

The research groups' physical activity habits before and after the research period were clarified in the first questionnaire. With this information it is possible to see how active the research group is in daily life and how women feel to be physically active. Women, who have been physically active during their life, are normally more capable to estimate different feelings and changes in their body.

The researched issues were that how many times women are physically active over 30 minutes in a row during a week and how many times women do muscular strength training in a week. The Likert's scale which was used in the question was: not at all, 1-2 times a week, 3-5 times a week and 6 or more times a week. The results (figure 8) were that in the first questionnaire 57,1 % of women were physically active (30 minutes in a row) one to two times a week and 43,9 % of research group were active 3-5 times per week. 85,7 % of the women responded that their physical activities include muscular strength exercises one to two times per week and 14,3 % answered that they do not perform any muscular strength exercises.

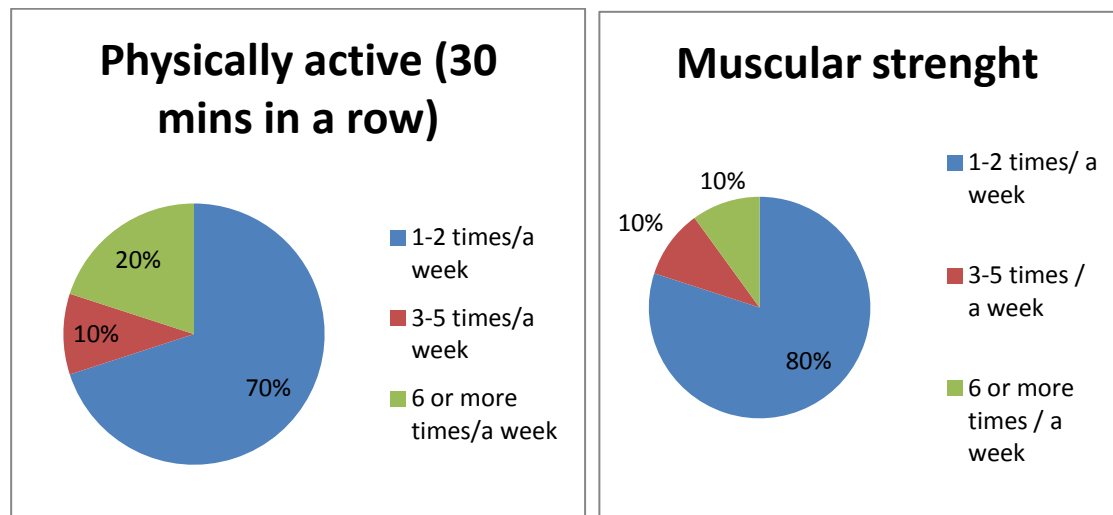
FIGURE 8. Distribution of research groups' physical activity and muscular strength habits in the first questionnaire.



In the last questionnaire under research were women's physical activity habits in the same way like in the first questionnaire. Results showed that 70 % of the women were physically active (30 minutes in a row) one to two times a week. 20 % of research group expressed to be physically active six or more times per week and 10 % of women were active three to five

times a week. 80 % of the research group had a muscular strength exercise one to two times in a week. 10 % of women were doing muscular strength exercises three to five times and 10 % of the group was not doing muscular strength exercises at all.

FIGURE 9. The distribution of research groups' physical activity and muscular strength habits in the second questionnaire.



By comparing the results of physical activity habits in the first and last questionnaire, it is possible to see that women expressed to be physically more active in the end of research period compared to the beginning of research period. The amount of muscular strength exercising has increased and all participants of the research mentioned to have muscular strength exercising in the last questionnaire. Based on the gathered knowledge of physical active habits, participants of the research have an active lifestyle.

With open-ended question thesis authors clarified how women feel being physically active. In the first questionnaire women expressed that being physically active is important concerning the pregnancy.

“I feel physical exercising really important since I am doing monitor working. In the balance of working life, I feel muscular strength exercising important to keep my neck- and back muscles in a good condition”.

“I feel that being physically active is important and I would like to be more active, but on the other hand, I have been really tired during pregnancy that it is already enough to survive in daily life”.

In the end of the research period women's pregnancy had progressed forward and exercising started to feel unpleasant because of the changing body.

“It is harder to do for example muscular strength movements because I feel my body clumsy and moving is harder than before pregnancy”.

Like in the first questionnaire, importance of exercising was noticed and motives of being physically active were mentioned.

“I am capable to be active in basic fitness level. Being physically active gives me more energy. I am training to be in a good shape in the labor and that I would recover faster from the labor”.

The following chapter focuses on the main results of the research. The results of Rovaniemi and Espoo groups are separated because of the different length of research period. The results are divided to four different sections: pelvic floor muscles, preparing for the delivery, Bailamama 9Months and physiological changes.

## 10.1 Pelvic Floor Muscles

The following chapter focuses on the results of the gained knowledge about the location of pelvic floor muscles, the recognition of PFM and changes of possible incontinence dysfunctions.

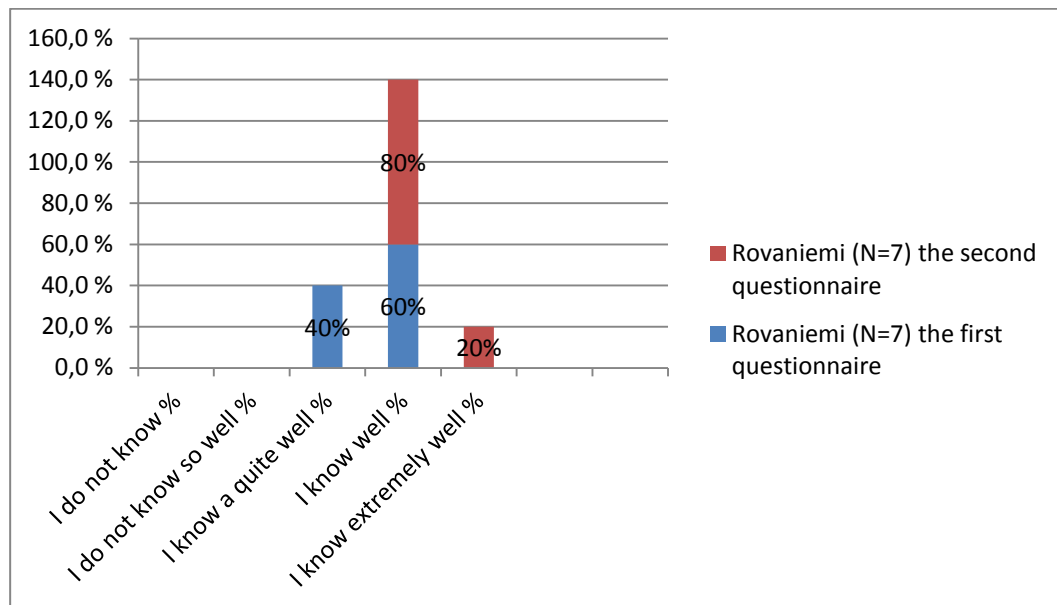
### 10.1.1 Knowledge of the Location of Pelvic Floor Muscles

In the questionnaires (the question number 11) thesis authors researched women's knowledge about the location of the pelvic floor muscles. The form of the question was: “do you know where the pelvic floor muscles are located?” The Likert's scale which was used in the question was: “I do not know, I do not know so well, I know a quite well, I know well and I know extremely well”.

The results of Rovaniemi research group can be seen in the figure 10. The results of the first questionnaire were that 60 % of the women knew well and 40 % of group knew a quite

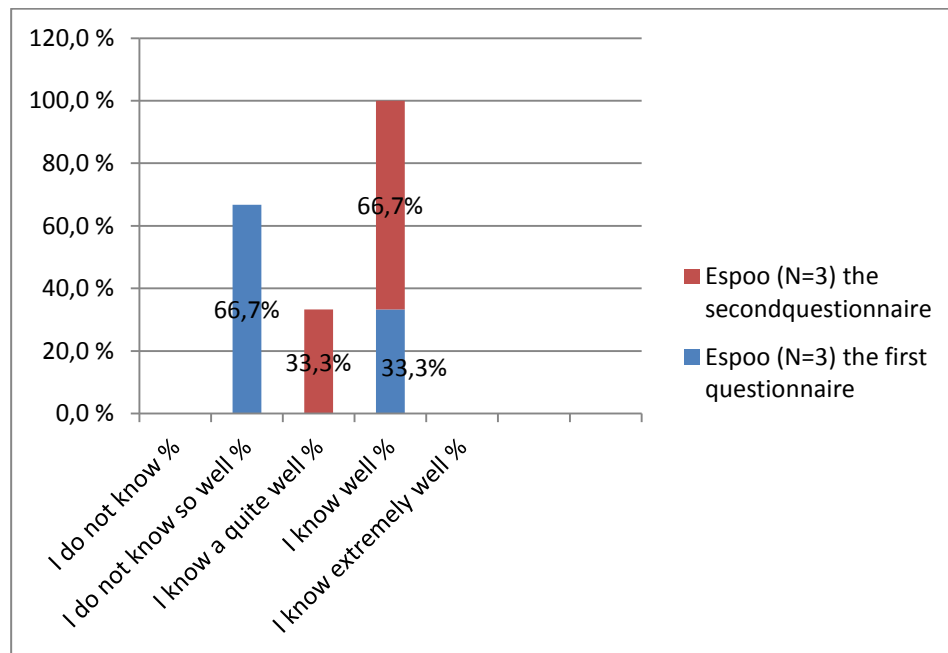
well the location of pelvic floor muscles. After the two months research period the results were that 20 % of women know extremely well the location of the pelvic floor muscles and 80 % know well.

FIGURE 10. The women's knowledge of the location of PFM in the first and last questionnaires in Rovaniemi.



The results (figure 11) of Espoo research group showed that in the beginning of the research period 33,3 % knew well the location of the pelvic floor muscles, and 66,7% of women did not know the location so well. After the five weeks research period 66,7% of the women expressed to know well and 33,3 % of the women know a quite well where the pelvic floor muscles are located.

FIGURE 11. Women’s knowledge of the location of PFM in the first and last questionnaires in Espoo.



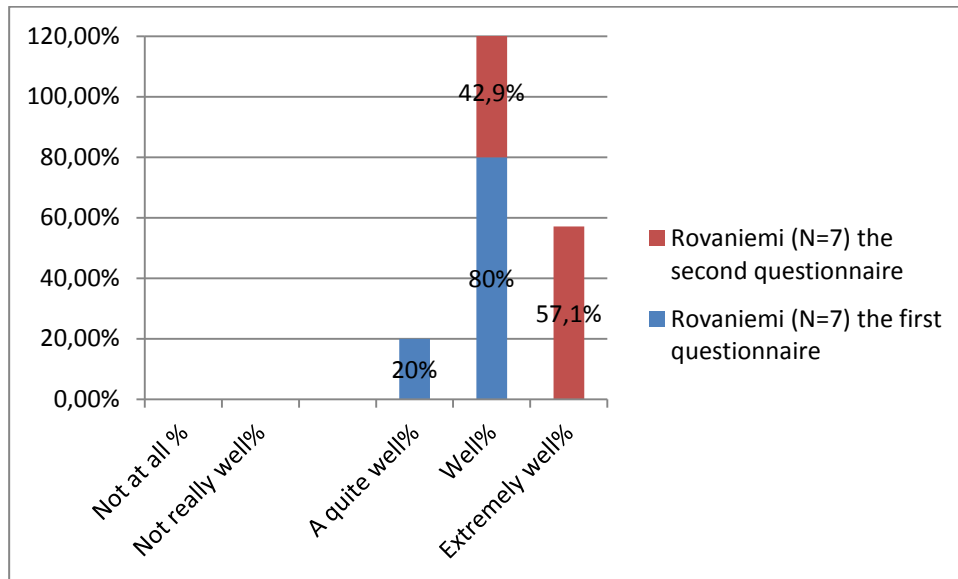
From the women’s expressions it is possible to see the improvements in women’s knowledge about PFM.

“I did not find or locate pelvic floor muscles before Bailamama® course. Neither did I know about the meaning of pelvic floor muscles.”

#### 10.1.2 Recognition of the Pelvic Floor Muscles

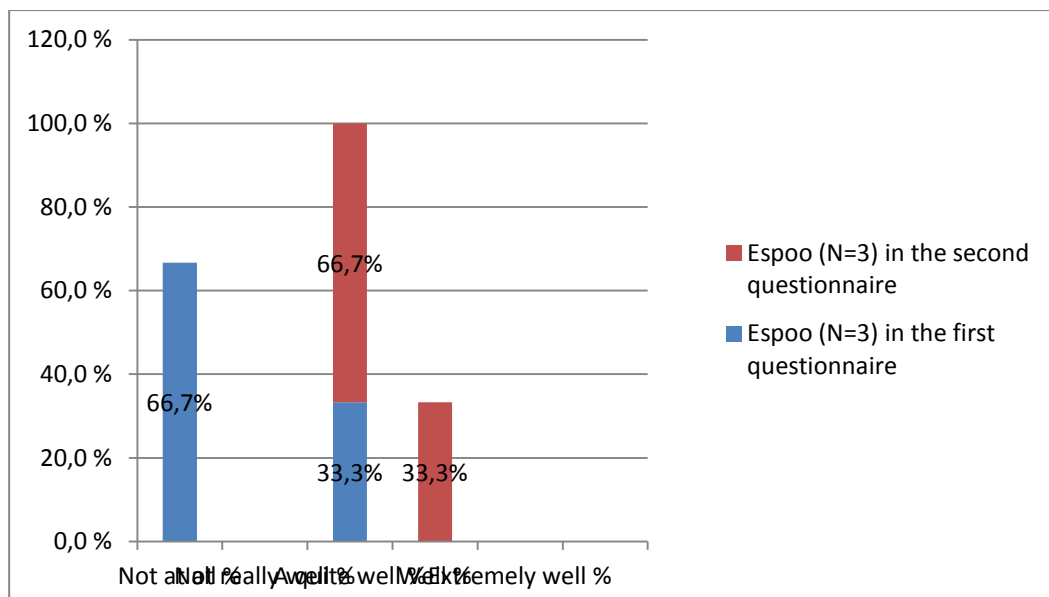
In the questions fourteen and fifteen thesis authors researched women’s recognition of the pelvic floor muscles contraction and relaxation. The Likert’s scale which was used in the question number 14 and 15 was: “not at all, not really well, a quite well, well and extremely well.” The results of Rovaniemi research group revealed that 80 % of the research group recognized well the pelvic floor muscle contraction and relaxation in the first questionnaire. 20 % of the group expressed to recognize the contraction and relaxation a quite well. After the eight weeks research period 57, 1% of the women feel to recognize extremely well, and 42, 9 % of women express to recognize well the contraction and relaxation of the pelvic floor muscles. The results are presented in the figure 12.

FIGURE 12. The changes in women's recognition of the pelvic floor muscles contraction and relaxation during the research period in Rovaniemi.



In Espoo the results (figure 13) of the first questionnaire were that 33,3 % of the women identified the contraction and relaxation a quite well, and 66,7% did not identify at all. After the five weeks long research period 33,3 % of the women identify well and 66,7 % recognize a quite well the contraction and relaxation of pelvic floor muscles

FIGURE 13. The changes in women's recognition of the pelvic floor muscles contraction and relaxation during the research period in Espoo.



Bailamama® has created a new, fun and trendy way to exercise pelvic floor muscles in a group exercise class. By creating a unique concept, Bailamama® has inspired thousands of women around Europe to train their pelvic floor muscles.

“Stronger pelvic floor muscles and better physical condition – more energetic feeling.”

“Pelvic floor exercising to the new level.”

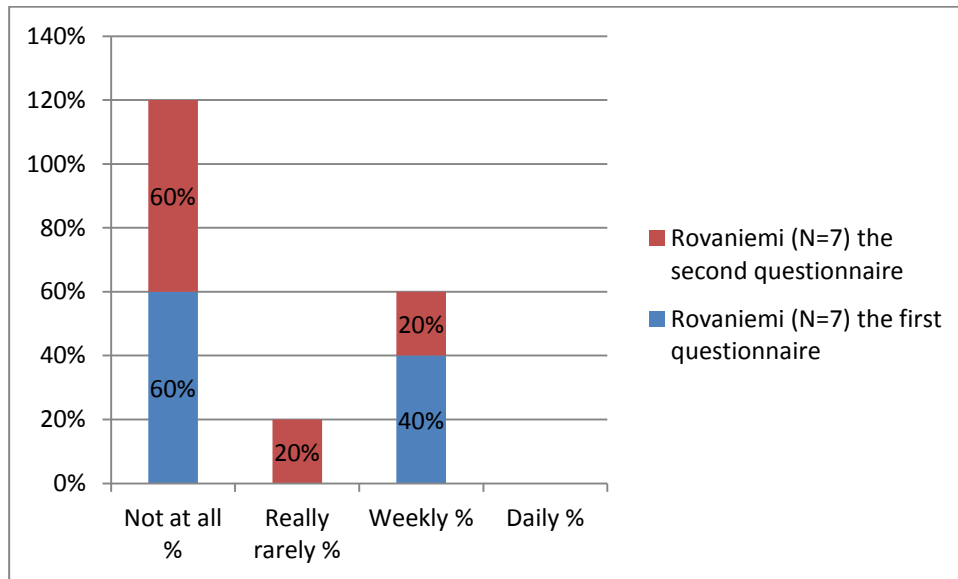
“I will definitely continue training of pelvic floor muscles also after the Bailamama course!”

### 10.1.3 Incontinence

The question number 10 researched the possible changes of incontinence problems during the research period. The Likert's scale which was used in the question was: not at all, really rarely, weekly and daily. The researched issue was also that in what kind of situations the urine leakage happens. Given options of answering were: while lifting up and jumping, while sneezing and laughing and/or during running and restraining urine.

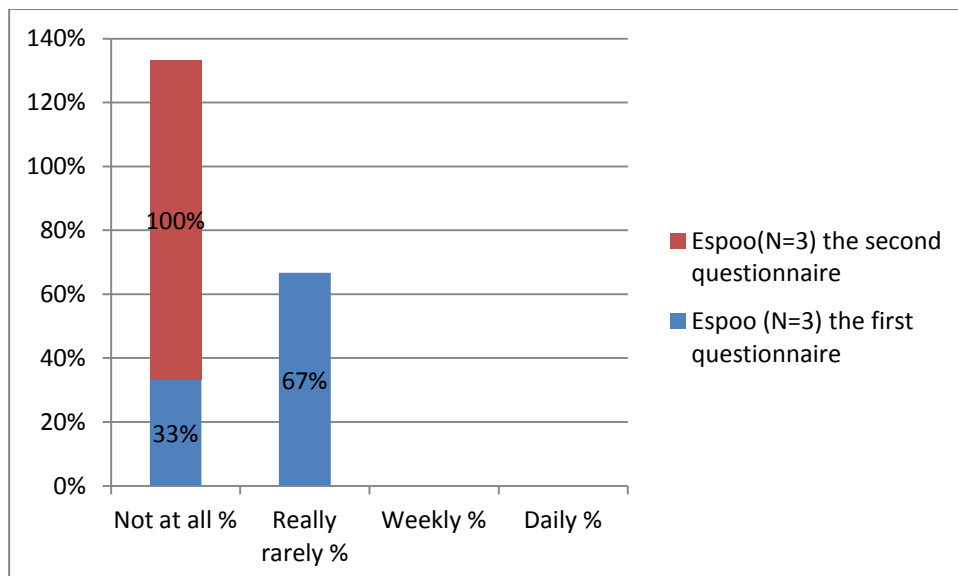
In the first questionnaire the results of Rovaniemi research group were that 60 % of women did not experience incontinence problems and 40 % of research group expressed to have urine leakage weekly while sneezing and laughing. After two months research period, results were that 60 % of women do not have incontinence problems at all. 20 % of women experience urine leakage really rarely and 20 % weekly. The results are presented in the figure 14. The women who answered to have urine leakage really rarely and weekly, expressed that leakage occur while sneezing and laughing.

FIGURE 14. The changes in incontinence problems during the eight weeks research period in Rovaniemi.



In Espoo 33% of the research group expressed (figure 15) in the first questionnaire not to have urine leakage at all and 67 % answered to have really rarely. After the five weeks research period 100% of women do not have any kind of urine leakage.

FIGURE 15. The changes in incontinence problems during the five weeks research period in Espoo.



In Bailamama® 9Months class 25 % of the content of class includes strength training for pelvic floor muscles. Diverse pelvic floor muscle exercises include endurance, power strength and maximum strength exercises of pelvic floor muscles. A woman who had been pregnant earlier expressed that 9Months classes helped her with problems related to PFM dysfunctions.

“I got my first child three months ago and my pelvic floor muscles loosened really much. In delivery/during pregnancy I was inability to restrain urine discharge. Bailamama was absolutely beneficial! My pelvic floor muscles are even stronger now.”

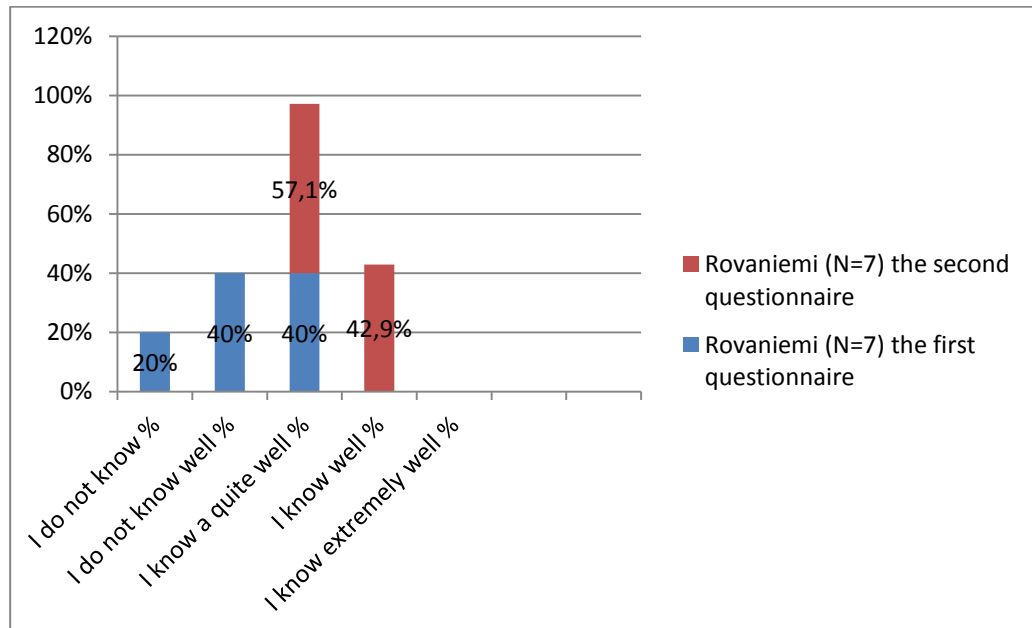
## 10.2 Preparing for Delivery

The following chapter focus on the results of knowledge of the pushing positions, advices for pushing positions and attitude towards practicing pushing positions. In this chapter, the results of knowledge of the correct breathing technique when inhaling gas and air, opening phases breathing technique, the experienced importance of opening exercise for the pelvis and possible changes of fears towards the delivery are described.

### 10.2.1 Knowledge of Pushing Positions

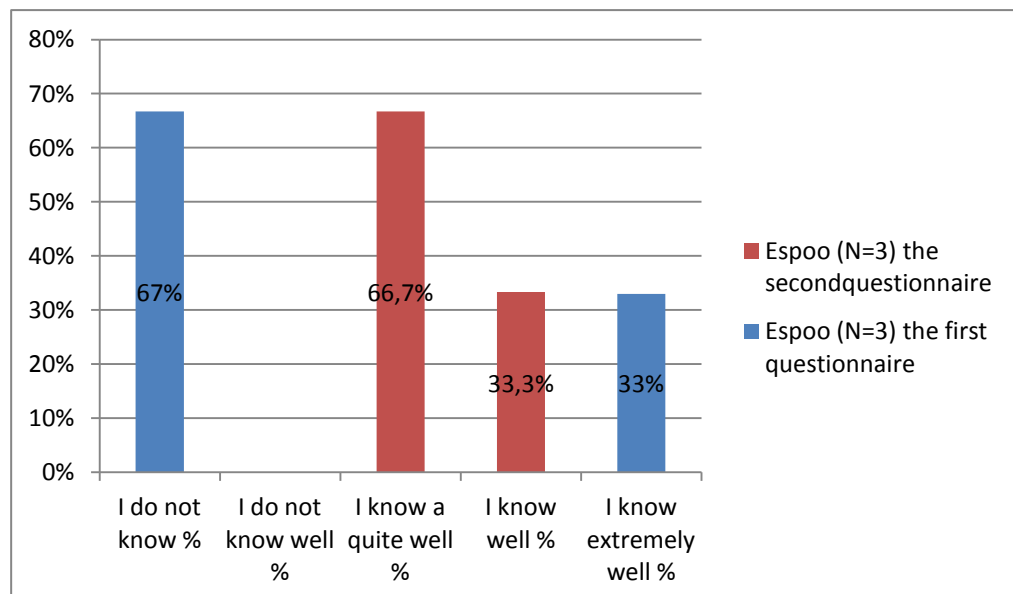
With the questions number 18 thesis authors clarified women’s knowledge about different kind of pushing positions in delivery. The Likert’s scale which was used in the question number 18 was: “I do not know, I do not know well, I know a quite well, I know well and I know extremely well”. In the first questionnaire, 40 % of research group in Rovaniemi felt to know a quite well, the same amount (40 %) knew not so well and 20 % of the women expressed not to know different kind of pushing positions in the childbirth. After the research period results were that 42, 9 % know well and 57, 1 % feels to know a quite well different kind of pushing positions. The results are presented in the figure 16.

FIGURE 16. The changes in research group of Rovaniemi knowledge of different kind of pushing positions in delivery.



The results of Espoo research group can be seen in the figure 17. 67 % of the women felt not to know different pushing positions in the first questionnaire and 33 % of participants expressed to know extremely well. After five weeks research period, women answered so that 66,7 % know a quite well and 33,3 % know well existing pushing positions.

FIGURE 17. The changes in Espoo research group's knowledge about different kind of pushing positions in delivery.

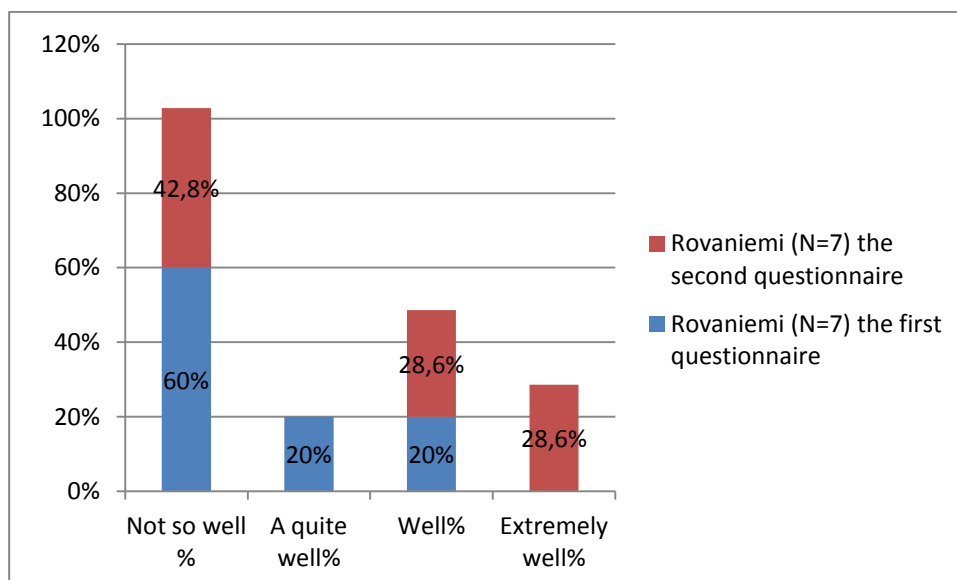


### 10.2.2 Advices for Pushing Positions

The question number 19 researched how women feel that they have received advice for pushing positions. The Likert's scale which was used in the question number 19 was: "not so well, a quite well, well and extremely well".

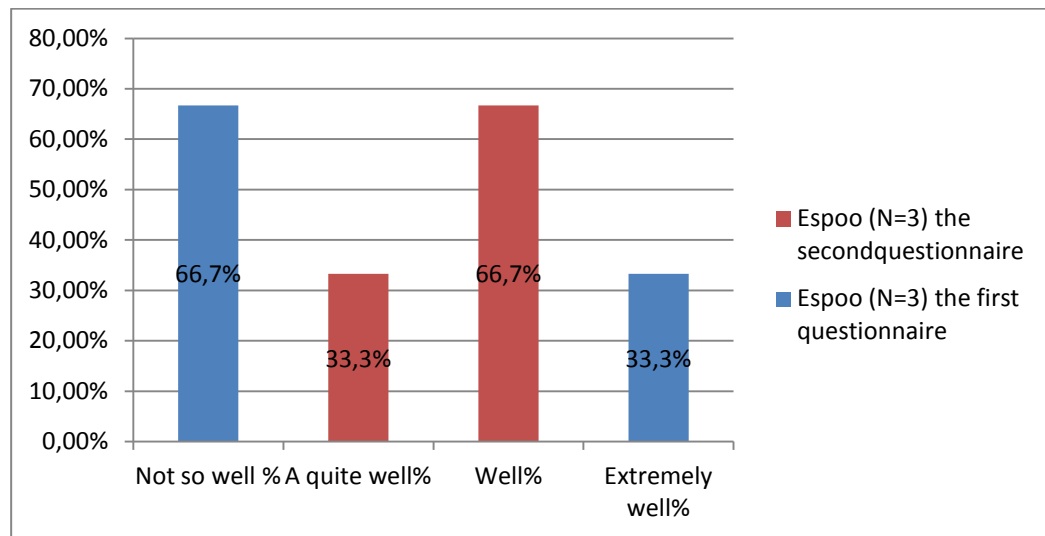
The results (figure 18) of Rovaniemi research group were that before Bailamama® 9Months classes 20 % of Rovaniemi research group expressed that they have got advice for different kind of pushing positions well. 20 % of women answered to get a quite well and 60 % not so well. After the research period the results were that 28, 6 % of women felt to get advice extremely well, 28, 6 % well and 42, 8 % felt that they get not advice so well.

FIGURE 18. Women's feelings about offered advices for pushing positions in Rovaniemi.



In the first questionnaire 66, 7 % of the women of Espoo group answered that they have not received advice for pushing positions so well. 33, 3 % of participants expressed that they have received advices for pushing positions extremely well. After the research period, 66, 7 % of women feel that they received advice for different kind of pushing positions well and 33, 3 % of women felt to get a quite well. The results of the research question are presented in figure 19.

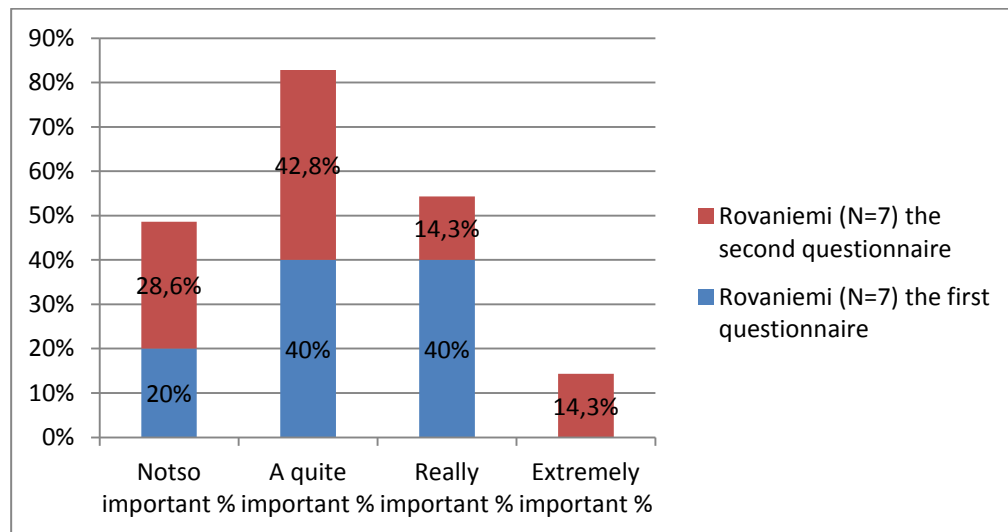
FIGURE 19. Women's feelings about offered advices for pushing positions in Espoo.



### 10.2.3 Attitudes Towards Practicing Pushing Positions

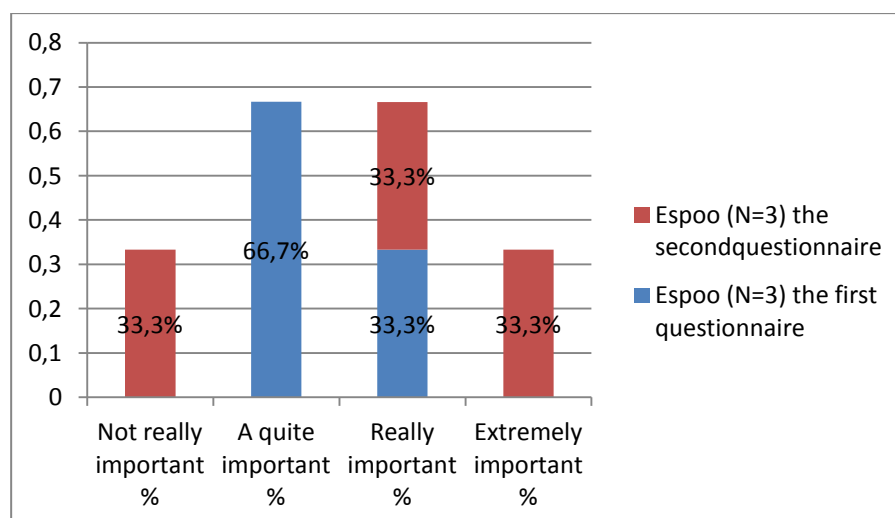
The question number 20 researched how important women feel to practice pushing positions according to the delivery. The Likert's scale which was used in the question was: not so important, a quite important, really important, and extremely important. The results (figure 20) of the Rovaniemi research group were that in the first questionnaire that 40 % expressed practicing to be really important, 40 % felt to be a quite important and 20 % answered practicing to be not so important. In the end of the research period, 14,3 % of women feel training to be an extremely important, the same amount (14,3 %) feel it to be really important, 42,8 % answered it to be a quite important. 28,6 % of women feel that training pushing positions is not so important.

FIGURE 20. Women's feelings towards the importance of practicing pushing positions during the eight weeks long research period in Rovaniemi.



In the research group of Espoo the results (figure 21) were that in the beginning of research period 33,3 % of the women felt that the practicing is really important and the 66,7 % answered exercising to be a quite important. After the five weeks research period, the answers showed that 33,3 % of women feel practicing it to be an extremely important and the same amount (33,3 %) experience it to be really important. One third (33,3 %) did not feel that training pushing positions is really important.

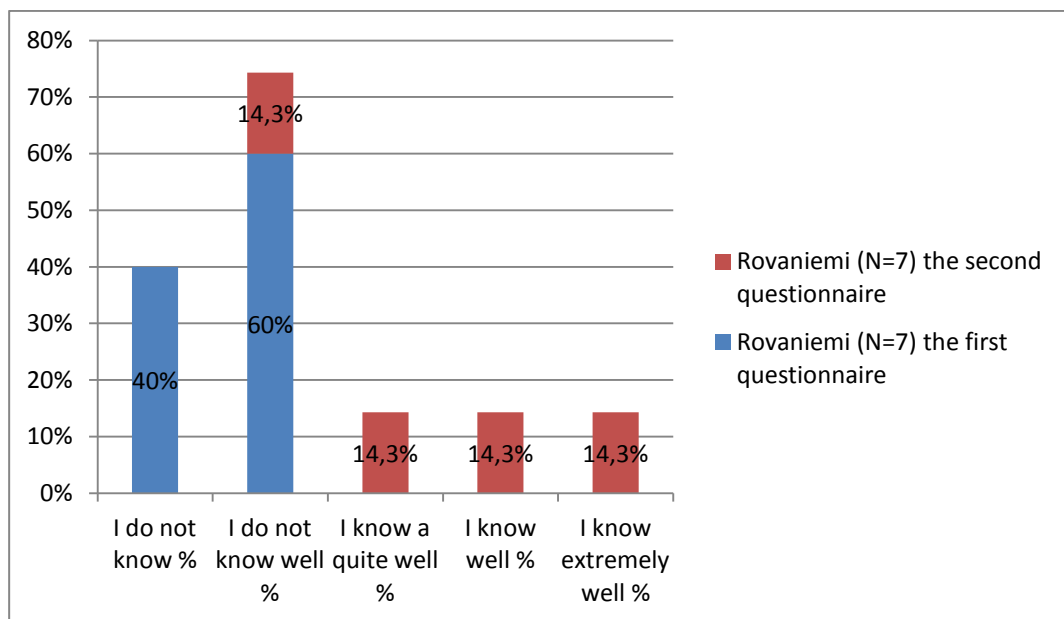
FIGURE 21. Women's feelings towards the importance of practicing pushing positions during the five weeks long research period in Espoo.



#### 10.2.4 Breathing Techniques used when Inhaling Gas and Air

The research question number 23 (in the last questionnaire question 22) researched the knowledge of breathing technique when taking gas and air. The Likert's scale which was used in the question number 23 was: I do not know, I do not know well, I know a quite well, I know well and I know extremely well. In the research group of Rovaniemi results (figure 22) were that 60 % of women did not know well and 40 % did not know the correct breathing technique in the first questionnaire. After the research period 14,3 % of the group know extremely well, 42,9 % of women know well, 14,3 % know quite a well and 28,6 % of participants do not know so well the correct breathing technique.

FIGURE 22. Women's knowledge of breathing technique while taking gas and air in Rovaniemi.

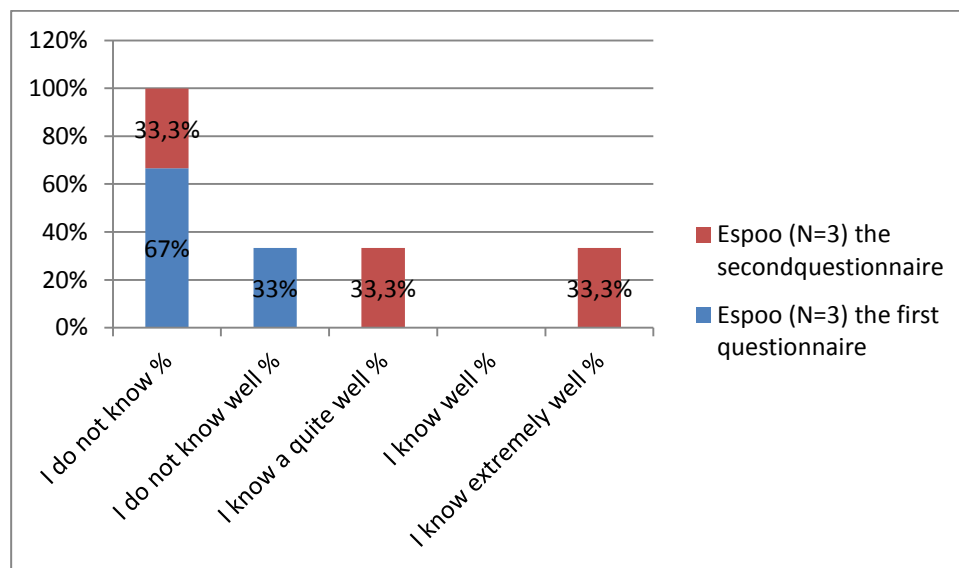


A woman of the research group expressed her dissatisfaction towards the advice of maternal clinic.

“It is normal to have coaching for delivery in maternal clinic. But the coaching is not comprehensive and does not include breathing techniques or etc important. I am not satisfied with advising in maternity clinic. Neither in delivery did I not get advices about breathing technique.”

The results of the Espoo research group are presented in the figure 23. In the first questionnaire 67 % of women expressed not to know and 33 % did not know well the correct breathing technique when taking gas and air. After the five weeks research period the results were divided equally between the answers: I don't know (33, 3 %), I know a quite well (33, 3%) and I know extremely well (33, 3 %).

FIGURE 23. Knowledge of breathing technique while taking gas and air in Espoo.



A woman expressed her satisfaction towards advice of breathing techniques in 9Months classes.

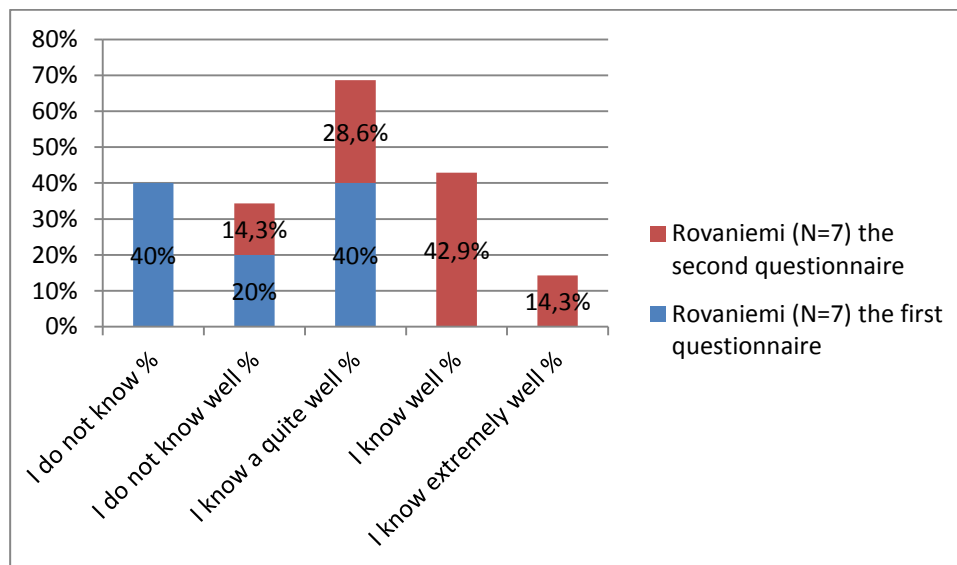
“I learned breathing techniques, which help me to relax during contractions.”

#### 10.2.5 Opening Phases Breathing Technique

The question 22 (in the last questionnaire 23) researched about the knowledge of correct breathing technique in opening phase's contraction pains. The Likert's scale which was used in the question number 23 was: I do not know, I do not know well, I know a quite well, I know well and I know extremely well. The results of Rovaniemi research group are presented in figure 24. In the first questionnaire 40 % of women in Rovaniemi did know a quite a well and same amount (40%) did not know at all how to breathe correctly during the open-

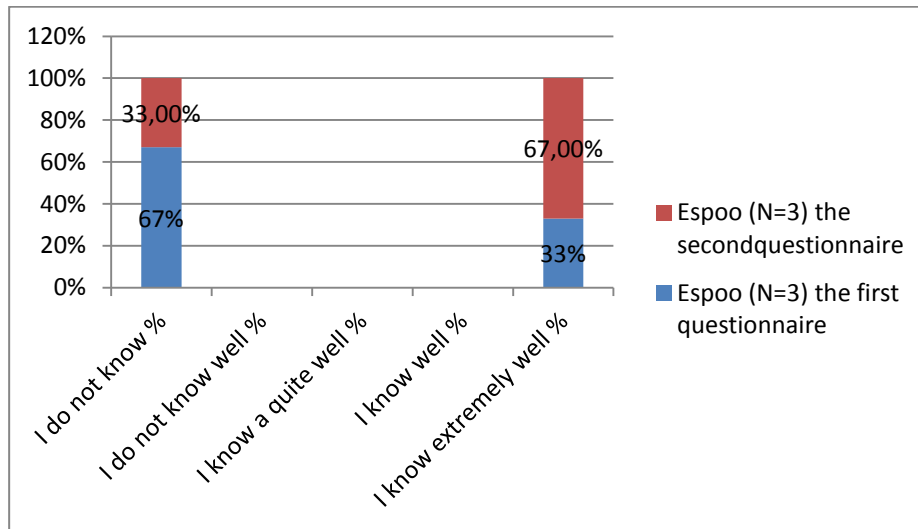
ing phases. 20 % of participants responded in the first questionnaire that they did not know the correct breathing technique so well. After two months research period results were that 14,3 % of women know extremely well, 42,9 % know well, 28,6 % of participants know quite a well and 14,3 % do not know so well the breathing technique used during the opening phases.

FIGURE 24. The changes of knowledge of correct breathing technique in opening phase's contraction pains in Rovaniemi.



The results of Espoo research group (figure 25) were that in the first questionnaire 67 % did not know and 33 % did know extremely well the correct breathing technique in opening phases. In the second questionnaire 33 % of women expressed that they do not know and 67 % knew extremely well the correct breathing technique used during opening phase's contraction pains.

FIGURE 25. The changes in knowledge of correct breathing technique in opening phase's contraction pains in Espoo.

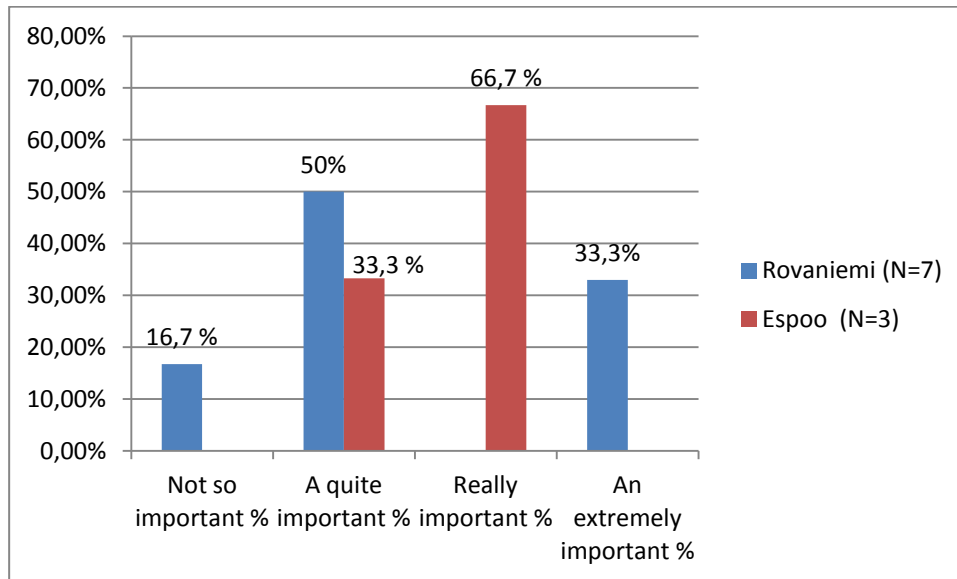


#### 10.2.6 Opening Exercise for the Pelvis

In the last questionnaire (question number 24) thesis authors researched women's feelings towards the importance of the pelvis opening exercise according the childbirth. The Likert's scale was: not so important, a quite important, really important and an extremely important. Results (figure 26) in Rovaniemi were that 16,7% of women feel that the exercise is not so important, a half of the women (50%) expressed that the exercise is a quite important and 33,3% of women answered that the exercise is an extremely important according the childbirth.

The results (figure 26) of the research question in Espoo were that 33,3 % of women feel that the exercise is a quite important and 66,7 % answered that the opening exercise is really important according the delivery.

FIGURE 26. Women's feelings towards the importance of the pelvis opening exercise according to the childbirth.



Pelvis opening exercise is a unique way to prepare woman for the labor, both physically and mentally. It helps women's mind and body to relax, and arouses positive feelings and thoughts. The open-ended question offered a positive comment about the exercise.

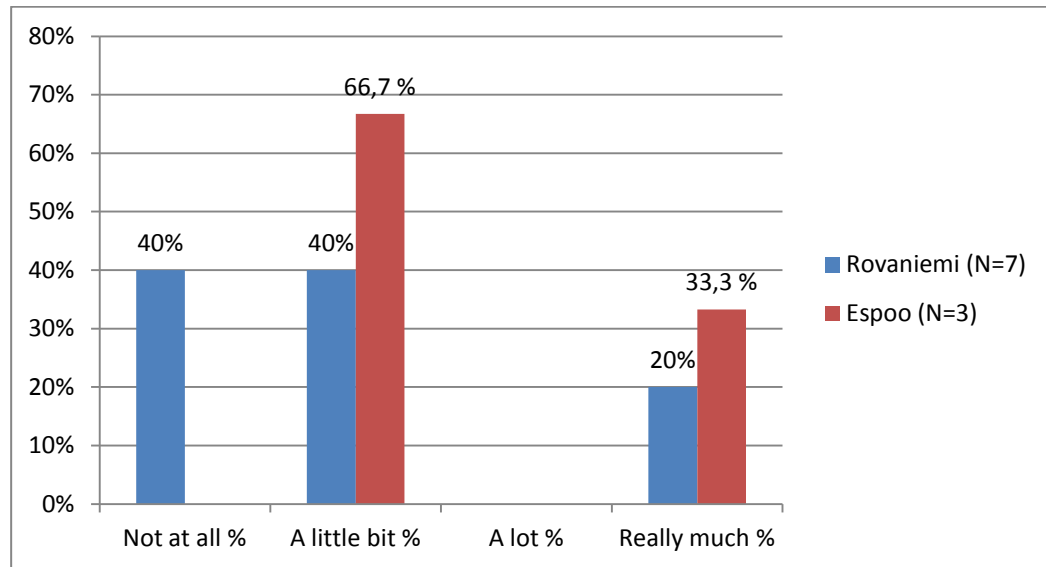
“Vibrating exercise (pelvis opening) was really awesome!”

#### 10.2.7 Fears Towards the Delivery

In the question number 25 thesis authors researched that have Bailamama® 9Months classes changed women's possible fears towards the delivery. The answer scale was: not at all, a little bit, a lot and really much. In Rovaniemi 40 % of women think that the course did not help them at all, 40 % feel that the class helped a little bit and 20 % of the women answered that Bailamama® 9Months classes helped them really much. The results are presented in figure 27.

The results (figure 27) of Espoo research group were that 33, 3 % of women feel that Bailamama® 9Months classes helped them with fears really much and 66, 7 % answered that the class helped them a little bit.

FIGURE 27. Effects of Bailamama® 9Months classes for women's possible fears towards delivery.



Women may have various fears during pregnancy and towards delivery. Women expressed to be more confident about delivery when gaining for instance knowledge about different kind of pushing positions.

“I am more confident to use different kind of pushing positions correctly.”

One participant of the research group feels that 9Months classes helped her to realize that women are able to reflect on having a positive experience of pregnancy and the actual delivery.

“Bailamama® 9 Months taught me to understand that we can ourselves positively effect and prepare to pregnancy and its progress, for example by contraction and relaxation exercises of pelvic floor muscles.”

The correct breathing technique in pain releasing situations is practiced in 9Months classes. One woman feels to be more confident with that after participating in 9Months course.

“I am more confident with pain releasing through the breathing exercises.”

### 10.3 BAILAMAMA® 9Months

The following chapter presents the results of the satisfaction of 9Months classes, experienced social support in 9Months class and did 9Months course helped women in managing in daily life.

#### 10.3.1 Satisfaction of BAILAMAMA® 9Months Classes

In the second questionnaire (a question number 29) the participants' overall satisfaction of Bailamama® 9Months classes were researched. The results were that every participant (N=10) of the research are satisfied with 9Months lesson and they recommend the class for the pregnant women. The satisfaction of Bailamama® 9Months class was 100 %.

Bailamama® offers fun and easy-going 9Months class for pregnant women and women who are recovering from the delivery.

“Happy music, regular and nice physical exercise, it is easy to come to Bailamama® lessons.”

One woman of the research group expressed 9Months class to be really beneficial when preparing for the childbirth; she is not satisfied with advising in maternal clinic.

“It is common to have coaching for delivery in maternal clinic. But the coaching is not comprehensive and do not include advice about breathing techniques or everything else important. I am not satisfied with advising in maternity clinic.”

Bailamama® 9Months classes offered a woman own time during a week and just concentrate on her.

“Own time, chance to calmly concentrate on my own body.”

“Classes helped to balance mind every week.”

A woman, who was recovering from the pregnancy, would have hoped to take part to the Bailamama® 9Months classes already during her pregnancy.

“I would have hoped this kind of class already during pregnancy.”

One pregnant woman believes that 9Months offer good recovering exercises from pregnancy.

“I believe that with same kind of exercises I can recover faster from the delivery.”

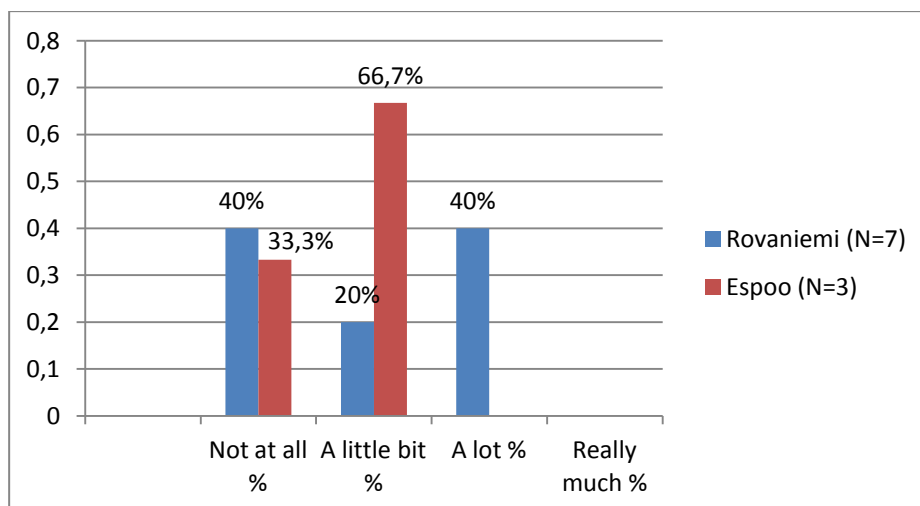
The satisfaction of 9Months class can be seen in a woman’s comment.

“I definitely recommend the class for pregnant women and also for women who are recovering from the childbirth!”

### 10.3.2 Social Support

The question number 27 researched women’s feelings about experienced social support during Bailamama® 9Months classes. The Likert’s scale which was used in the question was: I do not know, I do not know well, I know a quite well, I know well and I know extremely well.: not at all, a little bit, a lot and really much. The results (figure 28) in Rovaniemi were that 40% of the research group feels that they did not get social support at all, 20% feel to get a little bit social support, and 40% expressed to have a lot social support. In Espoo the results (figure 28) of the same question were that 33,3% do not feel to get support and 66,7% expressed that they got a little bit social support.

FIGURE 28. The perceived social support in Bailamama® 9Months classes.



Having peer support and being able to share own thoughts about the pregnancy effect on woman's wellbeing positively. Meeting other pregnant women in 9Months class helped some women to share their feelings.

“I got information about different kind of things related the pregnancy from women who are in the same situation than I am.”

“Conversation about what I should do, advices and conversation company.”

“I got support for pains, the size of stomach, I got advice to be physical active during pregnancy and even about mobile applications.”

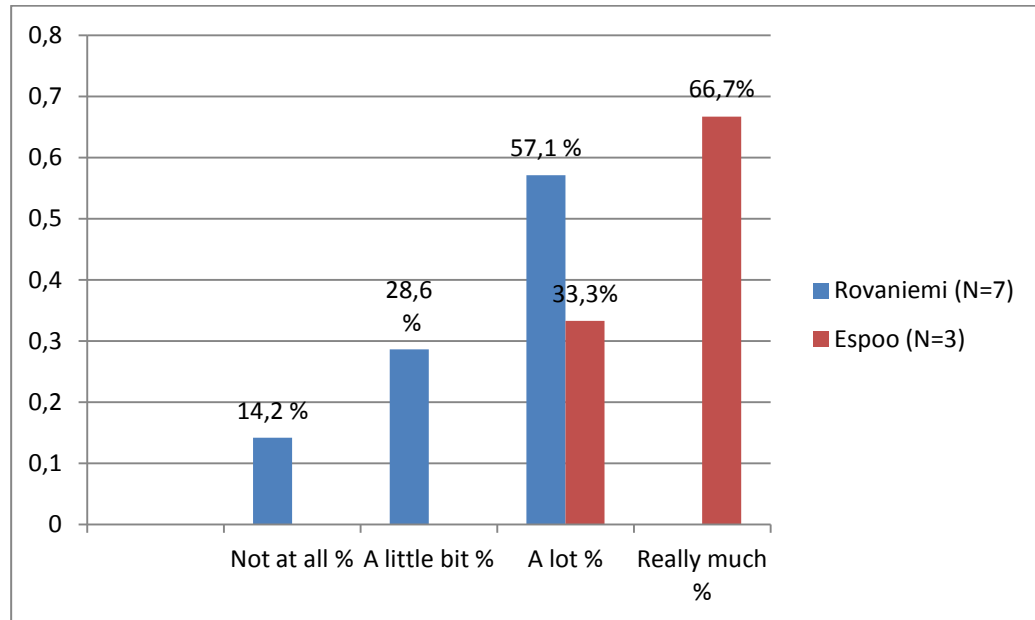
“I got new contacts from other pregnant women.”

“Nice physical exercise and I have got familiar with other pregnant women.”

### 10.3.3 Managing in Daily Life

The question number 5 researched that has Bailamama® 9Months helped women be more energetic in daily life. The Likert's scale which was used in the question was: Not at all, a little bit, a lot and really much. In Rovaniemi 14,2% of women answered (figure 29) that the class did not helped at all, 28,6% expressed a little bit, and 57,1% answered that the class helped them a lot to be more energetic. In Espoo the results (figure 29) were that 33,3% answered a lot, and 66,7% of women feel to be really much energetic in daily life. The results of the research are presented in the figure 29.

FIGURE 29. The effects of 9Months classes for women's energetic feeling.



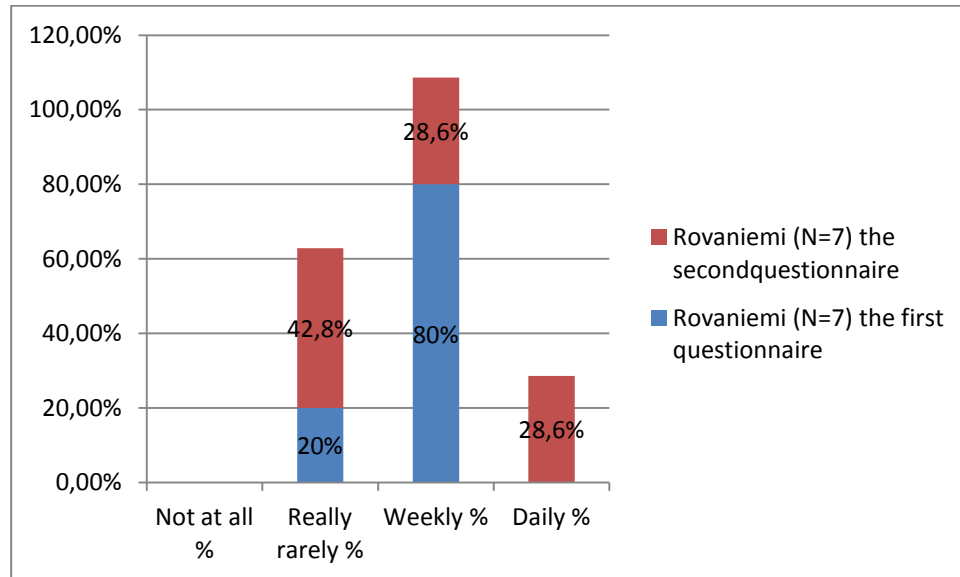
#### 10.4 Physiological Changes

The following chapter presents the results about possible changes of neck-shoulder, - and lower back pains during the research period are presented.

##### 10.4.1 Neck, - and Shoulder Pains

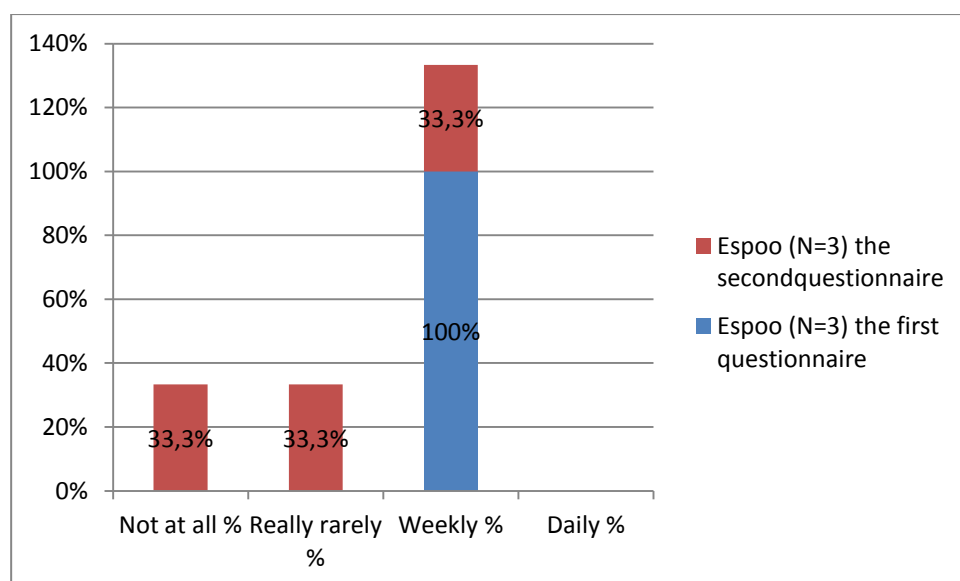
With the question number 6 the thesis authors researched possible changes of experienced neck-shoulder pains during the research periods. The Likert's scale which was used in the question number six was: not at all, really rarely, weekly and daily. Results (figure 30) were that in the beginning of research period 80 % of women had neck-shoulder pains weekly in Rovaniemi. 20% of research group answered to suffer from neck-shoulder pains really rarely. After eight weeks research period, the results showed that 42,8% of women suffer from neck-shoulder pains really rarely, 28,6% weekly and 28,6 % daily.

FIGURE 30. The changes in neck-shoulder pains of Rovaniemi research group.



The results (figure 31) of the same research question in Espoo were that in the first questionnaire 100% of women had pains weekly. After the five weeks research period the results were that one third (33,3%) of research group experience pains weekly, one third (33,3%) really rarely and one third (33,3%) not at all.

FIGURE 31. The changes in neck-shoulder pains of Espoo research group.



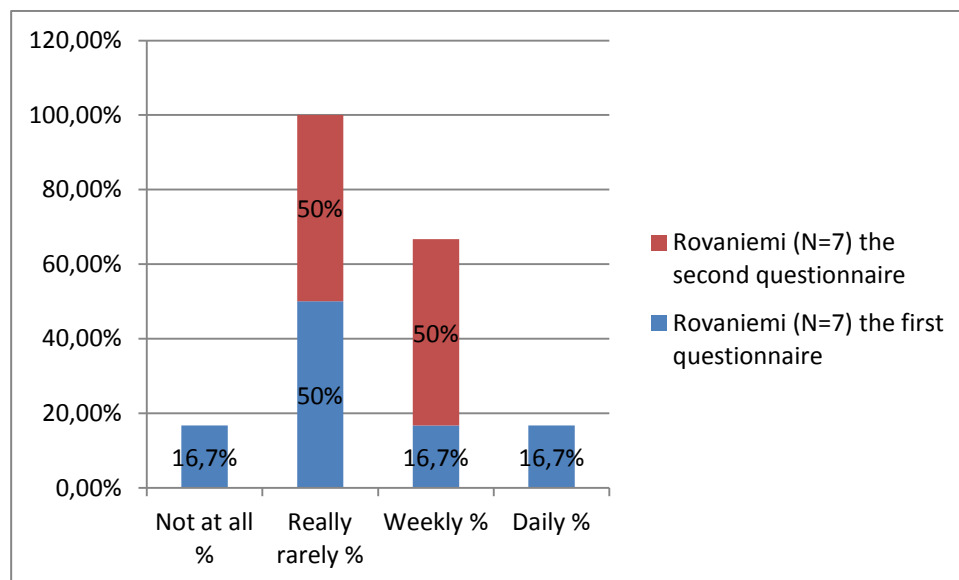
A woman expressed that she has gained knowledge about movements which help her with neck-shoulder pains.

“I have got help to neck-shoulder pains by learning good movements.”

#### 10.4.2 Lower Back Pains

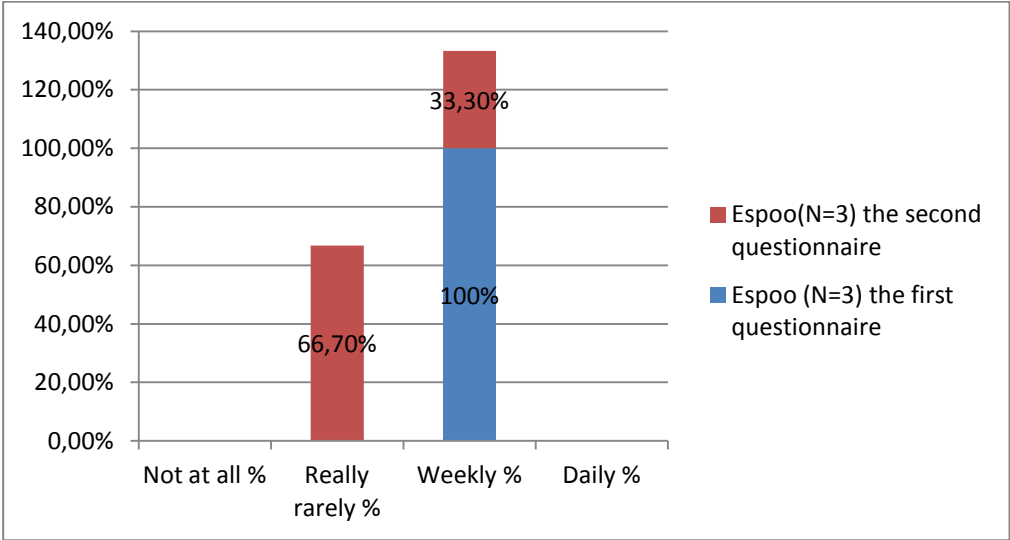
The question number seven researched that has women’s possible low back pains changed during the research period. The Likert’s scale of the question was: not at all, really rarely, weekly and daily. The results (figure 32) of the first questionnaire were that in Rovaniemi 16,7% of women expressed to have pains daily, 16,7% weekly, 50% really rarely, and 16,7% not at all. In the last questionnaire the distribution of results were that 50 % expressed to suffer from back pains weekly and a half of the women (50%) really rarely.

FIGURE 32. The changes in lower back pains of the Rovaniemi research group.



In Espoo the results (figure 33) of the first questionnaire were that all women (100 %) experienced lower back pains weekly. After the five weeks research period, results were that 33,3% have lower back pains weekly and 66,7% of women have lower back pains really rarely.

FIGURE 33. Changes in lower back pains of the Espoo research group.



## 11 DISCUSSION

The purpose of the thesis was to study the benefits which Bailamama® 9Months classes offer to pregnant women and women recovering from labor. The aim of this thesis was to provide Bailamama® with information that could be used to develop the Bailamama® 9Months product even further. The aim of the thesis for the authors was to deepen their knowledge and gather knowledge about safe and beneficial physical activities during pregnancy. From the perspectives of the Kajaani University of Applied Sciences (KUAS) and Myötätuuli, a KUAS learning environment which offers health and physical services, the aim was to learn more about safe physical exercises during pregnancy, plan instructions considering pregnancy and use this thesis as a teaching material in lessons

Research problems were investigated by two questionnaires. Based on the results of research, Bailamama® 9Months classes offer various benefits to pregnant women and mothers who are recovering from the delivery. The main result of the research is that every woman, who participated to the survey, recommends the Bailamama® 9Months class for other pregnant women. The recommendation of class is due to many benefits which women feel to receive from the 9Months class.

The main improvements and developments during the research time can be seen in the recognition of contraction and relaxation of PFM. Also the research question about women's energetic feeling after taking part to 9Months classes gave beneficial results; women felt to have more energy in daily life and in physical activities. Women who were first-time mothers gained a lot new knowledge about preparing for the delivery (pushing positions and breathing technique) compared to women who have been pregnant already before the research time; they have gained knowledge about those areas in their earlier pregnancy. Women felt that receiving information about the delivery was important and necessary to them. The results showed that the research period in Espoo (five weeks) gave averagely lower improvements in every area compared to results in Rovaniemi, where the research period was three weeks longer. Based on that, the benefits of Bailamama® 9Months classes are more accurate when the research time is at least two months long.

Bailamama® 9Months is a unique product in the field of physical education. Since it is not possible to compare the results to earlier studies of 9Months class, the results have been

compared to an earlier study of the Bailamama (Women class). There has been done a research about Bailamama® Women class in Lapland University of Applied Sciences and that was one study thesis authors used in comparison (Aho et al. 2014). Both studies showed similar result in improvements to realize the contraction and relaxation. When comparing 9Months study to Bailamama® Women research, similarities can also be seen in women's energetic levels since both studies show improvements in women's energetic feeling in daily life (Aho et al. 2014). Based on that, both Bailamama researches which have been done until this include similarities in the results. But as the products are different (9Months and Women classes) and because the target group of the classes is different (pregnant women and all women), it is not possible to compare the results of the surveys directly.

There are over 200 educated Bailamama instructors who instruct Bailamama® classes around Finland. It is hard to estimate how many 9Months courses are running at this moment because Bailamama® does not monitor the exact amount. Thesis authors chose the research groups for this research based on the suitable timing of completing the thesis. The following chapter describes different issues which may have affect to results of the research. The reliability and ethicality of the research are presented in the following chapter. Also authors describe their professional development during the thesis process and possible further studies.

## 11.1 Research Evaluation

The main idea of thesis started from thesis authors' similar interest toward pregnancy and being physically active during gestation. The other thesis author had worked with Bailamama® before starting the thesis process. Bailamama® told about a need to do the research of Bailamama® 9Months class: thesis authors decided to take the opportunity to research this fascinating topic. The questionnaire forms were created based on the research questions, theoretical background and hopes of Bailamama®. Both thesis authors have an education to instruct Bailamama® 9Months classes after completing the education.

As Bailamama® is a current topic so this was an ideal time to make a research about it. Earlier there has done a research about Bailamama®: there is not much researched data of the subject available. In 2014, Enbuska, Nieminen and Aho researched the effects of Bailamama® training on the activity of the pelvic floor muscles in women who have given a vaginal birth. The research was based on Bailamama® Women class. Aho, Enbuska and Nieminen were researching how women's knowledge about pelvic floor muscles improves. In the beginning of research period one of six women did not know where pelvic floor muscles are located. Two of six women felt that they are not able to contract or relax PFM. In the end of research period, every participant of the research expressed to know the location of pelvic floor muscles and also to be able to contract and relax those muscles (Aho et al. 2014). The same results can be seen also in this thesis, as women knowledge of locating relaxing, and contracting of pelvic floor muscles improved.

Bailamama® has spread around Europe. Thus the language (English) of the thesis is suitable for this research; it is possible to understand the research in European countries. During the thesis process, thesis authors contacted the Bailamama® developers, Emilia Ek and Maija Kiljunen, if thesis authors wanted to ask their opinions or faced challenges. Kiljunen and Ek checked the questionnaires before sending them to the research groups. Communication between thesis authors and Bailamama® worked and there did not appear any problems.

The co-operation with the teacher supervisor Kirsi Huotari worked well and she supported thesis authors during whole thesis process. Thesis authors are quite independent workers and thus they did not want to ask every question from a teacher supervisor. Because two thesis authors were working with the research, thesis authors got a lot help from each other and problems were solved by having conversation and by doing research. Thesis authors worked as supporting each other and they are satisfied with the thesis. Scheduling helped a lot during the thesis process. The schedule of thesis was planned precisely week by week and it was followed through the research process. The scheduling allowed to complete the thesis within a given time and do exact work in every stage of the thesis process.

In thesis authors' opinion, the research is valuable and it is important to emphasize the importance of physical exercising during the pregnancy. The importance of physical exercise includes both mental and physical aspects. Pregnant women may feel insecure about the fetus' safety, if there is no clear instructions how to exercise healthy and safely during pregnancy. Even if there are instructions, it is easier for a prenatal woman to come to the class

especially organized for the pregnant women. In Bailamama® 9Months class the customers are in good hands of professional instructors. Participants of 9Months classes can be sure that the exercises are safe and beneficial for themselves and the fetus.

With a bigger size of research group the results of the research would be more reliable. The size of the research group was ten (N=10). With that amount of participants the results of survey cannot be generalized. In other words, the answers of research group do not truly reflect the opinions of the whole population. The results are directional and done by using reliable sources. Based on the results of research, Bailamama® 9Months classes offer various benefits to pregnant women and women who are recovering from the delivery.

Bailamama® 9Months class includes a lot of important information according to the labor and pregnancy. Even though Bailamama® instructors highlight same kind of issues during the classes, every client of 9Months class are not capable to assimilate all of the given information. The big amount of given information can be too much to absorb all at once and some women assimilate the given information faster than other one. Those aspects may effect on results.

In the pregnant woman's life happen various changes and woman has many questions and thoughts going around in her mind. Although woman comes to the lessons to get rid of the daily life and to relax, it can be hard to keep the thoughts only in the class. Thoughts might wander somewhere else during the lesson and that may effect on assimilating the given information. However, according to one woman of the research group, Bailamama® 9Months class has offered a woman time to enjoy and relax, "own time, chance to concentrate on my own body calmly."

It is challenging to answer on questionnaires: it is easy to over-estimate or under estimate one's own learning, understanding and capabilities. These wrong kinds of estimations may be created because of different levels of self-confidence or earlier experiences in life. In addition, hormonal changes effect on pregnant woman's mind and mood by having different reflections on woman's confidence. It can be also easy to estimate one's capabilities higher than they really are; it can be hard to admit oneself own weaknesses. Some person may feel that she must over-estimate results in order to give more remarkable results of the research.

The first plan was to organize the Bailamama® 9Months course by thesis authors at LadyLine Kajaani. Instructing classes by thesis authors would have allowed to get more in-

dividual feedback and thesis authors would have been able to discuss with their customers more deeply about women's thoughts, feelings and experiences of the Bailamama® 9Months class. Because not getting enough participants to the course, the thesis plan had to be changed. Bailamama instructors have their own Facebook-page, and through that channel thesis writers asked if some of the instructors have Bailamama® 9Months courses starting during the thesis time. The research groups were founded from Rovaniemi and Espoo. The following chapter focuses on evaluating the research considering the different areas of research tasks.

### 11.1.1 Pelvic Floor Muscles

In Bailamama® classes the training of pelvic floor muscles is highlighted and Bailamama® has brought exercising of PFM to the new level. When doing an inductive content analysis of the questionnaires, thesis authors noticed that research group had extremely highlighted improvements of their pelvic floor muscles during the research period. As the women received a lot of information about PFM, they learned to recognize and train their PFM in a more effective way. The importance of contraction and relaxation was noticed and women felt that this helped them to improve their self-confidence towards the labor.

Five women (N=5) of the research group had already one to two children during the research period. That is important aspect to notice, because those women who have been pregnant already in earlier stage of life, probably have earlier knowledge about pelvic floor muscles. This aspect can effect massively on gathered results.

The research period in Rovaniemi was eight weeks and in Espoo five weeks. Both courses were arranged once a week. Especially five weeks long period is too short time to improve possible incontinence problems, so in other words, incontinence problems may not improve by practicing pelvic floor muscles once a week during five weeks. 60 % of Rovaniemi research group did not have urine leakage in the first questionnaire. That reflects to the results with lower improvements. When the pregnancy progresses the growing womb starts to pressure pelvic floor and thus urine leakages are more likely to happen. That may cause increases of urine leakage.

### 11.1.2 Preparing for Delivery

All participants of the research (N=10) expressed to be satisfied with Bailamama® 9Months classes. According to a woman of the research group:

“It is normal to have coaching for delivery in maternal clinic. But the coaching is not comprehensive and does not include breathing techniques or etc. important. I am not satisfied with advising in maternity clinic. Neither in delivery did I not get advices about breathing technique.”

Maternal clinics offer advice about labor and pregnancy to pregnant women. Based on a woman’s comment of research group, advice is not maybe comprehensive. Bailamama® 9Months class is one important source when preparing to the labor. Although maternal clinic is still the main place to get advice about issues related to the pregnancy and labor, 9Months classes do support the woman’s preparation to the delivery.

The thesis researched that do women feel pelvis opening exercise to be important concerning the labor. The results were two-folded including answers from one extremity to another. Two-folded results can be explained by women’s’ earlier experience: women who have experienced labor earlier may feel the pelvis opening exercise to be more important. First-time mothers do not maybe know the importance of pelvis opening exercise because the achieved benefits are mainly seen in the actual childbirth. If women have not given birth before it can be difficult to understand how exhausting experience the actual childbirth is.

Two women (N=2) of the research groups expressed not to have any fears concerning the delivery. According to this factor, the results of researched question do not be so remarkable. Results showed that woman who had fears before the research period, expressed to have less fears after the research period. Women who had already experienced labor had no or less fears towards the delivery compared to first-time mothers. That is because mothers already know the principles of the labor. The same issues are with pushing positions and breathing technique – women who have been pregnant earlier, have probably more knowledge about pushing positions and breathing techniques. That distorts achieved results of the research.

### 11.1.3 Bailamama® 9Months

One important aspect during pregnancy is to have enough social support. Bailamama® 9Months class is a great place to meet other pregnant women. Woman can share her feelings and experiences about issues related to the pregnancy. The results of social support in the research were two-folded. For instance, in Rovaniemi 40 % of the research group did not feel to get social support at all, 20 % felt to get a little bit social support, and 40 % expressed to have a lot of social support. Two-folded results of the social support are mainly because some women are more open-minded and more social than others. Some pregnant women are not eager to share their feelings as much as some do. It is difficult for some women to start to talk to the strangers about their own feelings, but some women are extremely excited that they are able to share their thoughts and views with other women in the same situation. A longer research period may have helped some women to be more open-minded and familiar to share their feelings with other participants.

In the last questionnaire the question number five researched that has Bailamama® 9Months classes helped woman to be more energetic in daily life. The results were positive since multiple reasons. Physical activities improve the quality of life and maintain the energy level in daily situations. The most important factors for these results were social support from other group members, physical activity and getting rid of the daily routines and having own time for herself.

### 11.1.4 Physiological Changes

Possible changes of back and neck-shoulder pains during the research periods were under investigation. A pregnant woman gains weight when pregnancy progress forward. The gained weight increases the amount of back pains and neck-shoulder problems as the woman's center of gravity shifts forward and downwards. Although Bailamama® 9Months class would improve those issues; going once a week to the class may not be enough to lead changes. Bailamama® 9Months course in Espoo had meetings five times, and in that period of time it is hard to see the possible differences or improvements in own body. For that reason, improvements of back-and neck-shoulder pains are not remarkable.

As a conclusion, the results of research shows that Bailamama® 9Months training improve women's energetic level and well-being in daily life. Managing in daily routines becomes easier as pregnant women get peer support in 9Months class and muscle strength is gained through physical strength exercises. Information about the delivery and concrete PFM exercises in pushing positions help women to prepare for the delivery and be more confident towards the actual childbirth. Women gained more knowledge of PFM functioning and recognition of PFM improved strongly. Due to those results it can be said that Bailamama® 9Months class help women to find and locate their PFM. Bailamama® 9Months training is great opportunity for pregnant women to prepare to the delivery, and gain fundamental knowledge according to the delivery and health physical exercising during pregnancy.

## 11.2 Reliability and Ethicality

The topic of the thesis itself is an ethical issue. When choosing the topic idea, it is important to consider possible benefits of the chosen topic (Hirsjärvi, Remes & Sajavaara 2009, 26). The goal of the thesis was to promote pregnant women's health with Bailamama® 9Months classes. The thesis topic is a current; Bailamama® is becoming increasingly popular and the media is interested in Bailamama®. Bailamama® was awarded as the best Finnish sport product 2014. The goal of every research is to avoid mistakes (Tuomi & Sarajärvi 2013, 138 - 139). The fact that thesis was written by two authors strengthens the reliability and minimizes possible mistakes of the research. Both thesis authors were able to give and obtain critical comments to each other's opinions and deductions during thesis process.

According to Tuomi and Sarajärvi (2013), "the measurements tools of qualitative researches are reliability, credibility, transferability, dependability and confirmability" (138 - 139). The credibility of the research means that the research group is described and the results are expressed as honestly as possible (Remes, Hirsjärvi & Sajavaara 2009). For readers of the thesis it is more reliable to know all essential information about the research groups. This is the reason why thesis authors gathered various facts about the women in hope to offer more reliable information about the research groups.

Transferability describes that the results of research can be generalized or transferred to other contexts (Tuomi & Sarajärvi 2013, 138 - 139). The research might be used in many contexts, especially among people who work with pregnant women. Dependability means

that research has been done by following the general principles of scientific research (Tuomi & Sarajärvi 2013, 138 - 139). In the description of thesis (chapter 8.3), it can be noticed that the process has evaluated by using general principles of scientific research and ethicality. According to Tuomi and Sarajärvi (2013), “the last criterion of reliability is conformability, meaning that the results of research are described honestly and as precisely as possible. This allows following the researcher’s reasoning. Conformability means that if the other researcher would repeat the research, results would be the same (138 - 139). Because of the fact that there were working two thesis authors, mistakes of data calculations were minimized and data was analyzed and calculated several times.

The reliability of qualitative research is improved when the process of research is described as exactly as possible. The data collecting method should be described clearly and in an honest way. It is essential to explain how and where the data of research were collected (Hirsjärvi et al. 2009, 217 - 218). That was the reason why thesis authors wanted to clarify the thesis process as clearly as possible: the reader would be able to understand how the research was completed.

The estimation tools of qualitative research are reliability and validity. The reliability means that the results of the research would be similar on repeated trials. The reliability of research increases by choosing the correct method for collecting the data (Vilkkä 2014, 149). Thesis is written by two authors and that minimizes the risk of miscalculations. Bailamama® organization guarantees that Bailamama instructors are qualified by asking the written feedback from the customers after 1<sup>st</sup> and 6<sup>th</sup> meeting. That fact increases the reliability of the research. However, the role of 9Months instructor was big in the research. For instance, the personality of instructor can effect on gathered results. By having various research groups around Finland, the instructors’ role of the research would not be so remarkable. The content and practices of 9Months classes during the research period were similar in Espoo and Rovaniemi: that increases the reliability.

The validity of research means that the measurement tool of research measures the phenomenon that it was meant to be investigated. The validity of research can be estimated for instance by questions: “how well the given answering options and questions are formed in the questionnaire”, “can the research group understand questions in a similar way”, and “how suitable is the used scale of give options (Likert’s scale)” (Vilkkä 2014, 150). The validity of research is increased as thesis authors tested the questionnaire forms with a group of

people. That gave feedback that the questionnaires are suitable and the scale of given options work. The questionnaire form is a fast and an easy way to collect data as it allows to see possible changes of research questions by comparing of gathered results.

Researchers' own expectations of the results should not lead the research. Expectations weaken the reliability of the research especially when analyzing the results (Kankkunen & Vehviläinen-Julkunen 2010, 165 - 166). Thesis authors' hypotheses are presented in the chapter 8. Thesis authors had to clear their mind about those hypotheses and work as outside researchers. The hypothesis did not lead the research at any point of the thesis process and neither did they effect on achieved results.

The results of Espoo and Rovaniemi research groups are separated; the length of research period was different. That improves the quality of the research. In Espoo the research period was five week and in Rovaniemi eight weeks. The three weeks longer research period in Rovaniemi may effect on benefits which women have gained during the research period.

The results should be described in a way which allows everyone to understand them (Tuomi & Sarajärvi 2013, 138 - 139). By showing the results as figures and in text format, the results are easy to comprehend. Thesis authors wanted to use straight quotations from the research groups; the woman's expressions would remain similar. The theoretical background was researched deeply and it was evaluated critically. In the thesis were mainly used researches and academic writings but also articles and literature by experts of pregnancy and health. The target was to use fresh and recently researched sources. That increases the reliability of the research.

Based on the research ethics, the research permission was asked from participants and participation to the research was voluntary (Donnelly & Trochim 2007). All participants were aware of the meaning of the research because it was described in the cover letter of questionnaires. Bailamama® 9Months instructors also mentioned the research to their clients. The meaning of the research was properly highlighted in the cover letter. It was clearly mentioned that the research and the information by the research group would be used confidentially. Phone numbers and email addresses of authors were included in the cover letter if there would appear any questions.

The research group consisted of ten (N=10) women. One criteria of the reliability is that the participants remain anonymous to the reader of research. In the questionnaires were not

asked the names of participants; it was not compulsory and thesis authors did not need to know the names of women.

The questionnaire forms were similar to every participant. The questions were aimed to be structured in a systematic way without leading questions. That way the answers of research groups are based on their own knowledge and experience, and do not prompt the respondent to answer in a particular way. The research groups filled out the questionnaires during their leisure time without rush. That offered reliable results because participants of the survey were able to think their opinions deeply.

The questionnaires were written in Finnish, because all participants of the research were Finnish women. The reliability of research is increased as all women of the survey were able to understand questions clearly. Before sending the questionnaires to research groups, a group of people were testing the questionnaires to be well-working. That increases the reliability of questionnaires and results of the research.

### 11.3 Professional Development

By choosing the interesting topic of thesis, the process has been rewarding time. Looking for sources and choosing the best and most reliable resources was interesting. There are many sources available about pelvic floor muscles and pregnancy: it took time to find the most recent information and data. During thesis process thesis authors gained new knowledge about physical exercising during pregnancy, pelvic floor muscles and about the whole pregnancy. Especially the mood fluctuations connected to the pregnancy opened thesis authors a whole new perspective to understand the causes behind them and impacts that mood changes have.

It was a quite challenging to concentrate fully to the thesis process, because of other school courses, hobbies and work. Thesis authors have different classes and schedules: finding time to work together was challenging. When working with the thesis, the time was definitely used effectively. The scheduling of thesis made possible to complete the thesis within a given time. The interesting topic of the thesis kept thesis authors motivated, as being extremely interested about physical exercising and pregnancy. Because thesis was interesting and important for thesis writers, it was done comprehensively and in a reliable way.

In the beginning the plan was to organize Bailamama® 9Months classes by thesis authors in Kajaani. As thesis authors were not able to get enough participants to the course, it was cleverer to look for research group from somewhere else. The reason not to get enough participants to the course was thesis authors' mistake. The marketing was done at late and not in a good way. Marketing of 9Months class was done in maternity clinics, KAMK (Kajaani University of Applied Sciences) and shopping centers by posters. The principals of KAMK and maternity clinics officials were contacted and asked to introduce the Bailamama® 9Months class to their clients. Finding a research group in a short time period was difficult. Thesis authors learned that marketing need to be started earlier than; marketing of the 9Months class one to two months in advance would have given a chance to find a research group.

The thesis was written by two thesis authors. That was a positive issue, because many views and ideas would not have showed up without other researcher. Thesis authors were able to evaluate critically each other's point of views but still be open-minded to other writer's differentiating opinions. Being critical but still encouraging towards each other enabled many good conclusions. During thesis process, there was no any problem between thesis authors and working together was enjoyable. Authors were open-minded for new ideas and able to express their own opinions.

During thesis process authors' own knowledge increased and deepened as hoped. In the future, thesis authors believe that gained knowledge about pregnancy help to work with pregnant women. All in all, thesis authors are really happy and satisfied with the thesis by doing their best. It was an honor to work with this topic.

#### VISION

Physical education is a growing industry worldwide. As sport instructors we have the responsibility of overall health of the person. People face more and more diseases concerning their lifestyle and mental health. This is why the person should be always advised as comprehensively as possible. The overall health should be improved or maintained in every stage of the life. In each stage of life there should be taken into account different kind of issues which improve person's physical, mental and social well-being. Pregnancy is one of the most important phases that women face during her life. This phase should be valued and given a special attention since its one of a kind.

FIGURE 34. The vision of thesis authors' future working image

### 11.3.1 Competences of Self-Development

The Universities of Applied Sciences have determined the skills together with representatives from working life which graduated students are expected to have. Competences include comprehensive areas of knowledge and skills that express student's level of qualification, abilities and achievement potential (Kajaani University of Applied Sciences 2014 - 2015).

Based on the competences of the study program (Sports and Leisure management) thesis authors improved many skills during the thesis process. Competences of learning include the ability to gather and analyze new information critically. During thesis process thesis authors learned to analyze information critically: it is important to use reliable sources and recent researched knowledge according to thesis. Authors faced some conflicts between different researches: the most reliable source with the newest knowledge was chosen to the thesis.

Thesis writers worked as a team and shared their opinions and knowledge. This way thesis authors were able to have interesting discussions and find conclusions which would have not found otherwise. When working as a pair thesis authors needed to take other person's opinions into account and that strengthened the capabilities to work in collaboration with another person. Thesis authors learned to think about others feelings better and encourage one another in different situations. Successful and goal aimed collaboration between the thesis pair and working life co-operator is one learning objective of working life collaboration skill competences. Thesis authors worked in open-minded and well-working collaboration with the working life coordinator helped them to gain more capabilities to work in successful collaboration with their future employees. .

The cooperation with Bailamama® developed the working community skills. As getting feedback of the research and thesis from the teacher supervisor and Bailamama®, thesis authors developed their skills to receive feedback. Thesis authors learned from their own mistakes and were able to improve their knowledge based on feedback and comments from the supervisor and commissioner. Also the skills of giving feedback were improved, since thesis authors were giving feedback to each other during the thesis process.

A research strengthened the skills to take responsibility of the work. In the ethical part of the competences, taking the responsibility of one's own learning and doing, is emphasized. In thesis process the writers of the thesis are in the main role; thesis writers learned to take responsibility, hand in needed forms and give presentations on time. In every project it is important to plan the schedule the project clearly that it can be done within a given time. During the thesis process, the scheduling helped thesis authors a lot and allowed to do the research without any rush. By making the schedule and timetable of the thesis process, thesis authors learned a lot about time usage for their future. Thesis authors are now more confident to plan and schedule instructions, academic works or other work tasks in the future. The thesis process was especially a teaching experience of a scheduling.

During the thesis process, thesis authors faced problems which needed skills of problem-solving and getting over of disappointments. The disappointments are part of the thesis process and writers learned from them. Thesis authors learned that everything does not always go as planned. It was great to have a pair of thesis when facing disappointments; it was easier to find a solution for the misfortunes together. The first plan was to arrange Bailamama® 9Months classes by thesis authors but as the plan did not succeed; the other plan had to be planned. It taught that there always must be the plan B, in the case of non-succeeded first plan. This kind of problem-solving strengthened thesis writers capabilities to work under a pressure and to adapt quickly to changing situations.

Thesis writers deepened their knowledge of safe physical exercising during the pregnancy. During the thesis process, thesis authors were able to use the gathered knowledge of 9Months education but there was still need to have information from other reliable sources. Bailamama® 9Months education offered to thesis authors a unique and new knowledge which the education of KUAS has not offered until this. Thesis authors deepened their knowledge and develop the skills to give advice and instruct pregnant women in the future. Thesis authors feel to be more confident to give advice and instruct pregnant women and women who are recovering from the labor. This kind of gained, unique knowledge will be an advantage in the future.

Competences include the know-how of international potential on the student's field of study. The language of thesis is English which is perfect for this study; Bailamama® has spread to six countries around Europe, and this study can be understood around Europe.

Bailamama® has the opportunity to spread even further because its uniqueness in the field of physical education.

#### 11.4 Further Studies

The purpose of the thesis was to study the benefits which Bailamama® 9Months classes offer to pregnant women and women recovering from labor. If thinking about the future studies, there is possibility to make a deeper research with a bigger sample group or arrange interviews and make face to face discussions to gather exact information. The face to face interviews offer more specific information and more accurate results could be found.

Bailamama® 9 Months class is organized mainly to meet the needs of pregnant women, but it is also suitable for women recovering from labor. In the research two women (N=2) were recovering from the delivery. With a bigger sample group the investigation how women recover from labor could be the next interesting survey to be done. Also interesting research would be to do comparison between first-time mothers and women who already have kids before the research period. The research questions could include tasks like how gained benefits difference between those two groups.

Longer research period in future studies could give different results in some questions. By using longer research period, women get more familiar with each other, connect and create relationship to one another. One interesting research would be to conduct how women feel that Bailamama® 9Months classes helped them in the actual childbirth. The research could be done as an interview or by collecting the data by questionnaires after a woman has given a birth.

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THE LIST OF APPENDICES

The first questionnaire

The second questionnaire



### KYSELYLOMAKE: BAILAMAMA® 9MONTHS

Kiitos, että otat osaa kaksi kuukautta kestäväään Bailamama® 9 Months–tuntiin pohjautuvaan opinnäytetyö tutkimukseen. Opinnäytetyö tullaan tekemään Kajaanin Ammattikorkeakoulussa liikunnanohjaajan koulutusohjelmassa.

Aluksi pyydämme sinua vastaamaan kyselylomakkeeseen. Kahden kuukauden kuluttua tulet täyttämään uudelleen toisen kyselylomakkeen. Toivomme, että tämän tutkimuksen aikana osallistut kerran viikossa Bailamama® 9Months-tunneille LadyLine Rovaniemen keskuksella.

Antamasi vastaukset tullaan käsittelemään luottamuksellisesti ja analysoinnin jälkeen ne tullaan hävittämään asianmukaisella tavalla.

Tämän tutkimuksen avulla haluamme selvittää Bailamama® 9 Months- tunneilta saadut hyödyt asiakkaan näkökulmasta.

Yhteystietomme:

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**BAILAMAMA® 9 MONTHS KYSELY**

Ikä: \_\_\_\_\_

1. Olen/ minulla on:

 ensisynnyttäjää 1-2 lasta 3-5 lasta tai enemmän

2. Onko raskautesi edennyt normaalisti?

 Kyllä Ei

Jos vastasit ei, millä tavalla poikennut?

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3. Millaisena koet liikunnan harrastamisen?

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4. Kuinka usein harrastit liikuntaa ennen raskautta (väh. 30min yhtäjaksoisesti)?

- En ollenkaan
- 1-2 krt/vko
- 3-5 krt/vko
- 6 krt tai useammin

5. Kuinka usein harrastat liikuntaa tällä hetkellä (väh. 30min yhtäjaksoisesti)?

- En ollenkaan
- 1-2 krt/vko
- 3-5 krt/vko
- 6 krt tai useammin

Jos harrastat liikuntaa, kuinka monta kertaa harjoituksesi sisältää lihaskuntoa edesauttavaa harjoittelua?

- Ei ollenkaan
- 1-2 krt/vko
- 3-5 krt/vko
- 6 krt tai useammin

6. Esiintyykö sinulla niska-hartiaseudun kipuja?

- Päivittäin
- Viikoittain
- Erittäin harvoin
- Ei ollenkaan

7. Esiintyykö sinulla alaselänkipuja?

- Päivittäin
- Viikoittain
- Erittäin harvoin
- Ei ollenkaan

8. Onko sinun haasteellisempaa hahmottaa omaa kehoasi kasvavan vatsan ansiosta?

- Erittäin haastavaa
- Melko haastavaa
- Hieman haastavaa
- Ei ollenkaan haastavaa

9. Koetko jäykkyyttä rintarangassa?

- Päivittäin
- Viikoittain
- Erittäin harvoin
- En ollenkaan

10. Esiintyykö sinulla virtsankarkailua?

- Päivittäin
- Viikoittain
- Erittäin harvoin
- Ei ollenkaan

Jos kyllä, millaisissa tilanteissa?

- juostessa tai virtsaa pidättäessä
- aivastaessa tai naurahtaessa
- nostotilanteissa tai hypähtäessä

## LANTIONPOHJALIHAKSET

11. Tiedätkö, missä lantionpohjalihakset sijaitsevat?

- Erittäin hyvin
- Hyvin
- Melko hyvin
- En kovin hyvin
- En tiedä

12. Tiedätkö, että lantionpohjalihaksia tulisi harjoittaa monipuolisesti?

- Erittäin hyvin
- Hyvin
- Melko hyvin
- En kovin hyvin
- En tiedä

13. Kuinka usein teet lantionpohjalihasten harjoituksia?

- En ollenkaan
- 1-2 krt/vko
- 3-5 krt/vko

- 6 krt tai useammin

14. Tunnistatko lantionpohjalihasten jännityksen?

- Erittäin hyvin
- Hyvin
- Melko hyvin
- En kovin hyvin
- En ollenkaan

15. Tunnistatko lantionpohjalihasten rentouden?

- Erittäin hyvin
- Hyvin
- Melko hyvin
- En kovin hyvin
- En ollenkaan

16. Tiedätkö, että hyvät lantionpohjalihakset parantavat...

- Ryhtiä?
- Virtsanpidätyskykyä?
- Seksuaalista nautintoa?
- Synnytyksestä palautumista?

17. Tiedätkö miksi raskausaikana on tärkeää harjoittaa lantionpohjalihaksia?

- Erittäin hyvin

- Hyvin
- Melko hyvin
- En kovin hyvin
- En ollenkaan

## SYNNYTYS

18. Tiedätkö, millaisia eri ponnistusasettoja on?

- Erittäin hyvin
- Hyvin
- Melko hyvin
- En kovin hyvin
- En tiedä

19. Oletko saanut opastusta erilaisiin ponnistusasettoihin?

- Erittäin hyvin
- Hyvin
- Melko hyvin
- En kovin hyvin

20. Koetko ponnistusasettojen harjoittelun tärkeäksi synnytystä ajatellen?

- Koen erittäin tärkeäksi
- Hyvin tärkeäksi
- Melko tärkeäksi

En kovin tärkeäksi

21. Tiedätkö, mitä lihaksia erityisesti tulisi vahvistaa synnytystä ajatellen?

Erittäin hyvin

Hyvin

Melko hyvin

En kovin hyvin

22. Oletko saanut riittävästi opastusta neuvolasta tulevaa synnytystä varten?

Erittäin hyvin

Hyvin

Melko hyvin

En kovin hyvin

En tiedä

23. Tiedätkö millä hengitystekniikalla ilokaasua tulisi hengittää kivunlievitystilanteessa?

Erittäin hyvin

Hyvin

Melko hyvin

En kovin hyvin

En tiedä

24. Tiedätkö millainen hengitystekniikka auttaa sinua avautumisvaiheen supistuskivuissa?

- Erittäin hyvin
- Hyvin
- Melko hyvin
- En kovin hyvin
- En tiedä

**BAILAMAMA® 9 MONTHS**

25. Oletko osallistunut Bailamama® tunneille aikaisemmin?

- Kyllä
- En

26. Millaisia odotuksia sinulla on Bailamama® 9Months-tunnille?

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**ISO KIITOS VASTAUKSISTANNE KAUNIIT NAISET! 😊**



### KYSELYLOMAKE: BAILAMAMA® 9MONTHS

Kiitos, että otat osaa Bailamama® 9 Months- tuntiin pohjautuvaan opinnäytetyön loppukyselyyn. Opinnäytetyö tullaan tekemään Kajaanin Ammattikorkeakoulussa liikunnanohjaajan koulutusohjelmassa.

Antamasi vastaukset tullaan käsittelemään luottamuksellisesti ja analysoinnin jälkeen ne tullaan hävittämään asianmukaisella tavalla.

Tämän tutkimuksen avulla haluamme selvittää Bailamama® 9 Months- tunneilta saadut hyödyt asiakkaan näkökulmasta.

Toivomme, että olet nauttinut Bailamama® 9Months tunneista LadyLine Nihtisillan keskuksella.

Ihanaa odotusaikaa Kaunis Nainen! 😊

Yhteystietomme:

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Ikä: \_\_\_\_\_

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ensisynnyttäjää

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3-5 lasta tai enemmän

2. Onko raskautesi edennyt normaalisti?

Kyllä

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Jos vastasit ei, millä tavalla poikennut?

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3. Millaisena koet liikunnan harrastamisen tällä hetkellä?

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4. Kuinka usein harrastat liikuntaa tällä hetkellä (väh. 30min yhtäjaksoisesti)?

- En ollenkaan
- 1-2 krt/vko
- 3-5 krt/vko
- 6 krt tai useammin

Jos harrastat liikuntaa, kuinka monta kertaa harjoituksesi sisältää lihaskuntoa edesauttavaa harjoittelua?

- Ei ollenkaan
- 1-2 krt/vko
- 3-5 krt/vko
- 6 krt tai useammin

5. Koetko Bailamama® 9Months- tuntien auttaneen sinua jaksamaan arjessa paremmin?

- Erittäin paljon
- Paljon
- Jonkin verran
- En ollenkaan

6. Esiintyykö sinulla niska-hartiaseudun kipuja?

- Päivittäin
- Viikoittain
- Erittäin harvoin
- Ei ollenkaan

7. Esiintyykö sinulla alaselänkipuja?

- Päivittäin
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- Melko haastavaa
- Hieman haastavaa
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15. Tunnistatko lantionpohjalihasten rentouden?

- Erittäin hyvin
- Hyvin
- Melko hyvin
- En kovin hyvin
- En ollenkaan

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- Virtsanpidätyskykyä?
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- Synnytyksestä palautumista?

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- Erittäin hyvin
- Hyvin
- Melko hyvin
- En kovin hyvin
- En ollenkaan

## **SYNNYTYS**

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- En tiedä

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- Koen erittäin tärkeäksi

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- En kovin hyvin
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23. Tiedätkö millainen hengitystekniikka auttaa sinua avautumisvaiheen supistuskivuissa?

- Erittäin hyvin
- Hyvin
- Melko hyvin
- En kovin hyvin
- En tiedä

24. Koetko lantionavaus- (tärinäharjoitus) harjoituksen hyödyllisenä harjoitteena synnytystä ajatellen?

- Koen erittäin tärkeäksi
- Hyvin tärkeäksi
- Melko tärkeäksi
- En kovin tärkeäksi

### **BAILAMAMA® 9 MONTHS**

25. Koetko Bailamama® 9Months- tuntien auttaneen sinua synnytykseen liittyneiden pelkojen suhteen?

- Erittäin paljon
- Paljon
- Jonkin verran
- En ollenkaan

Jos tunsit synnytyspelkojesi vähentyneen, millaisissa asioissa erityisesti?

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26. Oletko tutustunut Bailamama® 9Months- tunneilla uusiin ystäviin?

- Kyllä
- En

27. Koetko saaneesi Bailamama® 9Months- tunneilta vertaistukea muilta raskaana olevilta naisilta?

- Erittäin paljon
- Paljon
- Jonkin verran
- En ollenkaan

Jos tunnet saaneesi vertaistukea, millaisiin asioihin erityisesti?

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28. Minkälaisia hyötyjä koet saaneesi Bailamama® 9Months- tunneilta?

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29. Suositteletko Bailamama® 9Months- tuntia myös muille raskaana oleville naisille?

- Kyllä
- En

**ISO KIITOS VASTAUKSISTANNE KAUNIIT NAISET! 😊**