Faculty of Medicine

University of Dhaka

COMMON MUSCULOSKELETAL COMPLAINS ARISING AMONG WOMEN AFTER CESAREAN SECTION DELIVERY: A PATIENT BASED STUDY AT CRP

By

Srabonti Saha

M. Sc. in Rehabilitation Science

Session: 2016-2017

Registration No: 3467

Department of Rehabilitation Science

Bangladesh Health Professions Institute (BHPI)

May 2018

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We the undersigned certify that we have carefully read and recommended to the Faculty of Medicine, University of Dhaka, for acceptance of this thesis entitled,

"COMMON MUSCULOSKELETAL COMPLAINS ARISING AMONG WOMEN AFTER CESAREAN SECTION DELIVERY: A PATIENT BASED STUDY AT CRP".

Submitted by Srabonti Saha, for the partial fulfillment of the requirements for the degree of M.Sc in Rehabilitation Science.

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SUPERVISOR STATEMENT

As the supervisor of Ms Srabonti Saha's Thesis work, I certify that I consider her thesis "COMMON MUSCULOSKELETAL COMPLAIN ARISING AMONG WOMEN AFTER CESAREAN SECTION DELIVERY: A PATIENT BASED STUDY AT CRP" to be suitable for examination.

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DECLERATION

- This work has not previously been accepted in substance for any degree and is not concurrently submitted in candidature for any degree.
- This dissertation is being submitted in partial fulfillment of the requirements for the degree of MSc in Rehabilitation Science.
- This dissertation is the result of my own independent work/investigation, except where otherwise stated. Other sources are acknowledged by giving explicit references. A Bibliography is appended.
- I confirm that if anything identified in my work that I have done plagiarism or any form of cheating that will directly awarded me fail and I am subject to disciplinary actions of authority.
- I confirm that the electronic copy is identical to the bound copy of the Thesis.

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DEDICATION

Dedicated to

My Parents,

who accelerate me from behind.

CONTENTS

LIST OF TABLES

ABBREVIATIONS

ADL	Activities of Daily Living
ANC	Ante Natal Care
BDHS	Bangladesh Demographic Health Survey
BHPI	Bangladesh Health Professions Institute
CDC	Centers for Diseases Control and Prevention
CI	Confidence Interval
CRP	Centre for the Rehabilitation of the Paralysed
C-Section	Cesarean Section
EA	Epidural Anesthesia
FIGO	International Federation of Gynecologists and Obstetricians
ICS	International Continence Society
LBP	Low Back Pain
NHIRD	National Health Insurance Research Database
NVD	Normal Vaginal Delivery
OR	Odds Ratio
P value	Probability Value
QAR	Quality Assurance in Research
SA	Spinal Anesthesia
SD	Standard Deviation
SPSS	Statistical Package of Social Sciences
UI	Urinary Incontinence
VBAC	Vaginal Birth after Cesarean Section
WHO	World Health Organizations

ABSTRACT

Objective: Identify the common musculoskeletal complains after cesarean section delivery.

Methodology: A Quantitative cross-sectional study was conducted for women with cesarean section delivery, who come at CRP out door for different treatment purpose in-between January 2018 to March, 2018. For identify the sample purposive sampling procedure was chosen and data was collected by semi structured & face to face interview process.

Data analysis: The estimated sample size was 272 but collected sample was 154 due to time limitation. The data from the questionnaire was analyzed using SPSS version 16.0. Chi-square test was used to identify the association and Binary logistic regression was used to calculate the association pattern. $P<0.05$ was considered to indicate a statistically significant relationship.

Result: Mean age of the participant was 28.25 years. Study results shown that 81.2% women had musculoskeletal complain after cesarean section delivery among them 75.3% suffered by low back pain. There was another finding 59.7% LBP occurred 0-1years post partum period. In chi-square and logistic regression analysis there was association between MS problems after C Section delivery with living area (P=0.010, OR 2.949, 95%CI 1.265-6.878), Economical status (P=0.011, OR 3.988, 95% CI: 1.226-12.975) and co morbidity (P=0.007, OR 0.205, 95% CI: 0.059-0.716). LBP after C Section mostly persist in between 0-1years (P=0.000, OR 4.941, 95% CI: 0.650-37.551).

Conclusion: Musculoskeletal problems during and after pregnancy was really a concerning issue. This study try to focus about musculoskeletal complains after cesarean section delivery and it revealed that LBP commonly occurred in the postpartum period and these are strongly related to impairment of maternal performance of daily tasks.

Key words: Cesarean section Delivery, Musculoskeletal complains, Low back pain

CHAPTER-I INTRODUCTION

Musculoskeletal disorders have become most common problem worldwide during the past decades and increasing day by day. Musculoskeletal problems during and after pregnancy was very common among women in the South Asia perspectives (D. Ansara et al. 2005). These problems also happened in case of cesarean section delivery. Cesarean section delivery was needed during medical emergency or for safe motherhood and there may be influenced by other socioeconomic condition (Chia et al. 2016). But it was needed to be ensuring that the proportion of births delivered in a safe, clean environment and under the supervision of health professionals. But there is several health problems occur after delivery either cesarean or vaginal. Several studies show that health problems consequent of delivery occur in mostly just after delivery and long term (Mannion et al. 2015).

Postnatal care is a crucial component of safe motherhood and neonatal health. Postnatal checkups provide an opportunity to assess and treat delivery but there also no opportunity to assess their musculoskeletal complains and also they are not aware about the devastating condition (Joshi & Joshi 2015). The 2014 BDHS data show that 39 percent of mothers and 36 percent of children in Bangladesh received postnatal care from a medically trained provider within 42 days after delivery, the vast majority within the crucial first two days of delivery. On the other hand, 61 percent of mothers and 64 percent of children did not receive a postnatal checkup from a medically trained provider. Those who continue the post natal checkup which also last just few days too few months after delivery (BDHS 2014). But different study shows that there chance to develop different musculoskeletal complain due to unaware about their posture and bodily change. Different study shows that the mostly occurred musculoskeletal complain was low back pain after cesarean section delivery. There also chance to develop urinary incontinence and perineal pain. Caesarean section delivery is considered to be a life-saving procedure to overcome several complains but it is need to care about the musculoskeletal complains which arise after delivery (Hansen et al. 2008).

1.1 Justification of the study

Musculoskeletal complains during and after pregnancy was very common among women. Some complains persist long time after pregnancy. There was an evidence that musculoskeletal complains like low back pain, neck pain, perineal pain, urinary incontinence etc. arisen after both type of delivery either cesarean or normal vaginal delivery. Ante natal care was needed in pregnancy period. Sometimes caesarean section also needed in medical emergency. According to Bangladesh Demographic Health Survey (2014) institutional delivery service is increase than before. Institutional delivery includes public sector and private sector. Caesarean section rate were increase in private sector than public sector. Antenatal care (ANC) from a medically trained provider was important to monitor the status of a pregnancy, identify the complications associated with the pregnancy, and prevent adverse pregnancy outcomes. To be most effective, there should be regular ANC throughout pregnancy. BDHS 2014 showed that ANC was increased and it's about 78%.

Postnatal care was a crucial component of safe motherhood and neonatal health. In the BDHS 36 percent of women received postnatal care for their last birth from a medically trained provider within two days of their delivery, up from 27 percent in 2011. But there was no long term follow up. There was no exact study about long term complication which arisen after delivery and also there was no exact idea about musculoskeletal complains. Sometimes cesarean section without medical indication was leads to several complications. The percentage of C-section births was sometimes considered to be a proxy indicator of women's access to skilled care for complicated deliveries. In 2014, 23 percent of live births in the three years preceding the survey were delivered by C-section, which implies that 6 in every 10 births in a health facility are delivered by C-section. Urban women were twice as likely as rural women to deliver by C-section (38 percent in urban areas and 18 percent in rural areas). Among women with secondary or higher education and women in the highest wealth quintile, half of births were delivered by C-section.

Though C-section was necessary but it had some adverse effect, sometimes unnecessary caesarean section creates health problem and also financial problems also. The International Federation of Gynecologists and Obstetricians (FIGO) issued a statement regarding the rising CS rates: 'FIGO considers surgical intervention without a medical rationale to fall outside the bounds of best professional practice. Caesarean delivery should be undertaken only when indicated to enhance the well-being of mothers and babies and improve outcomes' (FIGO 2007). Cesarean section was needed for favored of baby and mother but after delivery mother faced several musculoskeletal problems. Sometimes these problems last for few months to years.

Different study showed that musculoskeletal complains after cesarean section delivery very common among women. They were not aware about their posture during take care of their baby these lead to different musculoskeletal complain after delivery. Sometimes mother didn't take any type of treatment for this complain. For this reason problems became chronic and mothers suffered a lot. A Cochrane review conducted in 2007 looked at interventions for preventing and treating back and pelvic pain in pregnant women, and found evidence for strengthening exercises, pelvic exercises, and water gymnastics reducing lower back pain intensity better than standard prenatal care. Physiotherapy not only works for the prenatal pain but it had also the effect on post natal pain which arise after cesarean section delivery. In 2005 the Canadian Physiotherapy Association and the Society of Obstetricians and Gynecologists of Canada issued a joint policy statement on Postural Health for Women and the Role of Physiotherapy. With respect to pregnant women, the joint policy statement recommends: Physiotherapist directed pelvic floor muscle training to prevent urinary incontinence during pregnancy and after delivery, and Physiotherapist directed core stability training to prevent and treat back and pelvic pain during and following pregnancy.

The study aim was to identify the common musculoskeletal complains arising among women after cesarean section delivery. When we identify the factors regarding this issue then it can help to prevent musculoskeletal complains. We also can make aware women about health status, method of delivery& musculoskeletal complain.

1.2 Research Question:

What are the common musculoskeletal complains arising among women after cesarean section delivery?

1.3 Operational definition:

Caesarean section delivery:

Cesarean delivery — also known as a C-section — is a surgical procedure used to deliver a baby through incisions in the mother's abdomen and uterus. A C-section might be planned ahead of time if someone develop pregnancy complications or had a previous C-section and aren't considering vaginal birth after cesarean (VBAC). A Caesarean section is often performed when a vaginal delivery would put the baby or mother at risk. This may include obstructed labour, twin pregnancy, high blood pressure in the mother, breech birth, problems with the placenta, umbilical cord or shape of the pelvis, and previous C-section. Sometimes planned cesarean delivery is also occurring. Most influential factor for planned cesarean section delivery is socio-economic condition, fear for mother and baby and also some known medical condition.

Musculoskeletal problems:

Health problems after delivery are very common among women. Some problems occur just after delivery but some problems are become a long term issue. The study focuses long term issue among them Low back pain, neck pain, Perenial pain, urinary incontinence, sexual dysfunction and weak abdominals are important. This arises after cesarean section delivery due to lack of knowledge about this issue, physical causes, maintain poor posture during take care of their baby etc.

CHAPTER II: LITERATURE REVIEW

According to Dorland illustrated medical dictionary (1994), pregnancy is the condition of having developing embryo or fetus in the body after successful conception. The average duration of pregnancy is about 280 days. Estimation of the date on which delivery may occur is calculated from the first day of the last menstrual period. Alexander & McCormick (1993) illustrated that, pregnancy is the state of carrying a developing embryo or fetus into the female body and indicated by positive results of urine test and confirmed through a blood test, ultrasound, and detection of fetal heartbeat or an X-ray. Pregnancy lasts for about nine months, measured from the date of the women's last menstrual period (LMP) and conveniently divided into three trimesters, each roughly three months long. Physiological changes during pregnancy facilitate the adaptation of the cardiovascular system to increased metabolic needs of the mother, so delivery of oxygenated blood to peripheral tissues and the fetus is enabled (Silversides & Colman 2012). Amenorrhea is the first sign of pregnancy following the fertilization of the ovum. As the pregnancy progresses, muscle fiber lengthens and thickens with the growing of the uterus. Enlargement of uterus occurs within 12 weeks of pregnancy. Gestational ages can be determined with the levels of the uterus, which continues to rise until the later weeks of pregnancy. At the end of the pregnancy, a woman have to make many adjustment to compensate for the increased weight due to enlarged pregnant uterus, baby, amniotic fluid, placenta and breasts, so two third or most women experiences musculoskeletal problem, most frequently low back pain (Ansara et al. 2005).

Weight gain during pregnancy can cause to gain as much as a quarter of the body weight, adding stress to the back and other weight bearing structures (Aminu et al. 2014). According to Sabino & Grauer (2008), it is normal to gain between 20 to 40 pounds during pregnancy. The prenatal period is a time of great change for a woman. As the fetus grows, the overall musculoskeletal system is challenged by altered posture, shortened muscles, potential muscle imbalances, and changes in spinal mobility. Postural changes include increased spinal curves, rounded shoulders, hyper extended knees, flattened feet, and widened base of support. Because of the postural

changes associated with pregnancy, some muscles become tight to support the changing posture, while others are stretched and become weak. This results in muscle imbalance and a potential for decreased stabilization. Fluctuating hormone levels in both the prenatal and postpartum period may cause excessive joint laxity. If not corrected these changes may cause pain and dysfunction (Aminu et al. 2014).

After completion of pregnancy life then time to give birth of baby. It is either vaginal delivery or in case of emergency C-section delivery. A cesarean section is the delivery of a baby through a cut (incision) in the mother's belly and uterus. It is often called a C-section. In most cases, a woman can be awake during the birth and be with her newborn soon afterward. A C-section may be planned or unplanned. In most cases, doctors do cesarean sections because of problems that arise during labor. Reasons that might need an unplanned C-section include: Labor is slow and hard or stops completely, The baby shows signs of distress, such as a very fast or slow heart rate, problem with the placenta or umbilical cord puts the baby at risk & The baby is too big to be delivered vaginally, (Lydon-Rochelle M et al. 2000).

When doctors know about a problem ahead of time, they may schedule a C-section. Reasons that might have a planned C-section include: the baby is not in a head-down position close to the due date, there have a problem such as heart disease that could be made worse by the stress of labor, there have an infection that could pass to the baby during a vaginal birth, and also for multiple pregnancies. Sometime for the second time pregnancies there might be chance to uterine rupture, so C-section is needed. But in some cases, a woman who had a C-section in the past may be able to deliver her next baby through the birth canal and this is called vaginal birth after cesarean (VBAC) (Annibale et al. 1995).

In the past 40 years, the rate of cesarean deliveries has jumped from about 1 out of 20 births to about 1 out of 3 births. This trend has caused experts to worry that C-section is being done more often than it is needed. Because of the risks, experts feel that C-section should only be done for medical reasons, (Shearer 1993). In November of 2005, the Centers for Disease Control and Prevention (CDC) reported the national cesarean birth rate was the highest ever at 29.1%, which is over a quarter of all deliveries. This means that more than 1 in 4 women are likely to experience a cesarean delivery.

During the past several decades, cesarean section has become a common operative procedure. The proportion of women giving birth by C-Section increasing over time in all developed countries. In 1998 the caesarean section rate among women was 21% in Australia, but at 2007 these number was increased and became 30.9 %.(Laws & Sullivan 2009). Similar feature was shown in USA, where 20.7% caesarean section rate was at 1996 but it increased in 31.1% at 2006, (Martin et al. 2006). In the UK, the overall rate of cesarean birth is lower, accounting for nearly 25% of all births from 2007 to 2008; however, this rate has increased by approximately 50% from 1995–1996, (NHS maternity statistics 2009). In Europe, the rates vary considerably, with rates of 15% in Norway and The Netherlands, approximately 17% in Sweden and Finland, and 37.8% in Italy, (Zeitlin et al. 2013). In Saudi Arabia, the C-section rate accounts for approximately 10% of all births, reaching 20% in tertiary centers, (Khashoggi et al. 1995).

In the last decade, population-based rates of caesarean deliveries have increased beyond the WHO recommended level of 15% in Bangladesh where the rate increased from 9% in 2007 to 17% in 2011, (Gibbons et al. 2012). The observed increase in cesarean birth has been attributed to a number of factors, including advanced maternal age, particularly with the first birth, multiple pregnancies, breech presentation, suspected low infant birth weight, private hospital status (Nassar & Sullivan 2001) and an increasing maternal BMI (Naftalin & Paterson-Brown 2008). Other factors include organizational factors, the woman's choice regarding childbirth and preferences for care, and the obstetrician's characteristics and care practices (Thomas 2001).

Previous studies conducted in Bangladesh have shown that there are several factor associated with the caesarean section delivery. There are two type influencing factor that is provider driven and patient driven decision in the favor of caesarean section. Sometimes without medical indication as well as increase financial benefit for performing caesarean sections could be an explanation for increasing rates (Utz & Halim 2015). Many factors may support the decision to perform a caesarean section, including the rapidity and the possibility of planning the intervention, a perceived lower health risk, and financial benefits for the practitioner and the institution, the fear of litigation or women's demand resulting in, protocols and evidence-based guidelines regarding indications not being followed by the health providers, (Aminu et al. 2014).

Cesarean section delivery is needed for different emergency situation and also there might be planned caesarean delivery. Both have the long term effect on mother and baby. Several studies shows that after cesarean section there might be chance to develop secondary complication. Some of them are long term and some are short term. There might be chance to develop musculoskeletal complain like low back pain, neck pain, perineal pain, urinary incontinence, sexual dysfunction, weak abdominalis and so on (Gibbons et al. 2012). Pain, both from the surgical site, and from other sources such as musculoskeletal backache, can persist after caesarean section. Back and pelvic pain during pregnancy is a common occurrence. It is known to affect maternal functioning and well-being during pregnancy and can persist postnatal and beyond (Miovech et al. 1994). However, there has been little examination of the impact upon birth outcomes such as birth mode, duration of labour and pain experience. Mothers who experience high levels of pain during pregnancy may be at increased risk of complications during labour (Martin et al. 2006).

Low back and pelvic pain (LBPP) is very common during pregnancy and post-partum in women of childbearing age group. It can account for around half of the women of childbearing age (Mogren & Pohjanen 2005). The aetiology of LBPP during pregnancy is still poorly understood. There are many pathophysiological mechanisms implicated in its occurrence. Sudden weight loss of 4-5 kilos postpartum is a common cause of LBPP. Postpartum LBPP occur in most women due to positional changes in the body due to expanding uterus which weakens the abdominal muscles. Hormonal changes in pregnancy loosen the joints and ligaments of pelvic girdle which leads to unstable walking and ADLs (activities of daily livings) aggravated by more weight. The spinal integrity is compromised by repetitive stress to hold and lift the child. This leads to repetitive injury to the disc, zygapophyseal joints, muscles and ligaments of the spine resulting from chronic lifting, twisting and torquing, and poor posture (Kristiansson et.al.1996). During pregnancy the release of estrogen, progesterone and relaxin, hormones are essential for the growth and development of the embryo and fetus. These essential hormones during the pregnancy lead to generalized relaxation to the ligaments and muscles in women. The anatomical changes created by the generalized laxity of muscles and ligaments compromises the stability of the spine. Many patients develop a transient cervical curve reversal, a posterior shift of the center of gravity to the heels of the feet, a hyperlordosis, hyperextension of the knees

and a hyperkyphosis. With advancing pregnancy as abdominal girth increases, more strain is placed on the lumbar spine and the zygapophyseal joints (Joshi & Joshi 2016).

Low back pain (LBP) is common during pregnancy and also after delivery. According to most studies, at least half of the pregnant population is affected (Mogren & Pohjanen, 2005). Persistence of LBP for at 6 months after delivery has been reported in 5% to 40% of patients (Turgut et al. 1998).The etiology is poorly understood. Many parturient and their obstetricians believe that spinal anesthesia will cause LBP (Wang et al. 1994). A common complaint after a C-section is the sensitivity of the scar itself. For instance, it may hurt to lean over to pick up baby or may cause pain with lifting or other positional changes. Standing up straight may be painful as well as reaching over the head. In addition, the scar may cause a slight postural change, a sort of “pulling forward” that along with a decrease in the support of the back from the abdominal muscles could result in back pain. Many women enter pregnancy with a previous history of BP possibly associated with occupational hazards or a chronic health condition. The reported prevalence of BP at one year postpartum ranged from 33.7% to 64.7% (Cheng & Li 2008).

C-Section with EA may be a risk factor for subsequent LBP. There are several possible explanations for this. First, as MacArthur et al proposed, the most plausible hypothesis is that the origin of the problem is postural. Stressed positions can occur in normal labor and independently give rise to subsequent backache. Such postural problems can be aggravated by muscular relaxation and abolition of pain associated with epidural anesthesia (MacArthur et.al. 1990).The nonselective nerve block induced by the epidural administration of a local anesthetic causes muscular relaxation in the lower back and legs, leading to immobility and long periods in stressed positions. In addition, movement under EA generally requires assistance, and a woman can remain in a potentially damaging position for several hours without complaining of any discomfort. Thus, epidural-related back pain could be initiated by the loss of normal joint protective reflexes due to anesthesia, leading to prolonged maintenance of poor posture and stressed positions during labor (MacEvilly & Buggy 1996). Such stressed positions under EA may damage the back and lead to chronic LBP. The authors also found that many symptoms began in the first week after delivery, but in some women, LBP did not appear until several weeks after delivery,

although it was still associated with EA. This implicates initial stresses in the development of LBP, with some cases requiring additional postpartum triggers to precipitate symptoms (MacArthur, Lewis & Knox 1992). A prospective cohort study with follow-up at different time after delivery analyzing women who underwent EA during labor and delivery found that the association between EA and new onset postpartum LBP was inconsistent over time: the relative risk for LBP (epidural vs nonepidural) only on day 1 (52% vs 39%, adjusted relative risk 2.05) and at 6 weeks (15% vs 7%, adjusted relative risk 3.17) with parity, delivery, ethnicity, and weight adjusted. It suggested that women underwent EA during delivery had an increased incidence of LBP on the first day possibly because of local musculo-ligamentous trauma associated with insertion of the needle, (Macarthur, Macarthur & Weeks 1995).

The association between EA and LBP has been hypothesized that poor posture during labor and delivery because of effective analgesia, muscular relaxation, immobility, and stressed posture results in primarily postural pain, (MacArthur et.al.1990). But it could be arguable that the analgesia with EA usually lasts <12 hours, other more possible risk factors shall be considered. The etiology is multifactorial. Enormously physical and physiological changes during pregnancy and after delivery such as lumbar lordosis, center of gravity rise and fall, loss of abdominal muscle support resulted in intense stretch on the lower back. Maternal workload such as repetitively lifting baby in bent forward and twisted positions,(Alexander & McCormick 1993) heavy physical work and even tedious housework, subjective perception of physical strains, and physical exertion are, particularly, regarded as the assumed cause by patients with LBP compared to patients with other origin chronic pain(Wolter et al. 2011); these all contribute to trigger LBP after delivery. For most women, pain resolves spontaneously, or gets improved with medical attention and simple treatment, very few of patients with sciatica and neurologic claudication might need timely surgical intervention, (Russell et al. 1993). Other conditions like antenatal complaints of headaches or abdominal pain, endurance of back flexors, musculoskeletal subsystem imbalance, hormonal and vascular factors, and predisposing factors like greater weight and shorter stature, age, marital state, and socioeconomic status are also recognized as risk factors of parturients LBP thus shall be analysed,(Green 1970). Back pain is the usual presenting symptom in cases of epidural hematomas,

either spontaneous in origin or associated with spinal or epidural procedures, (Schmidt & Nolte, 1992). Specific nociceptors are found in intramuscular and periosteal tissues, and one cause of epidural-related back pain may be the activation of these nociceptors by the small hematomas associated with epidural needle insertion (Mense 1993).

Neck pain was also a widely reported complaint after cesarean section delivery. Gestational postural changes and adoption of antalgic postures during labor, delivery and postpartum period, such as positions adopted during breastfeeding and newborn care, are some factors that could have influenced the occurrence of the women's complaints. The prevalence of neck pain in postpartum women was very high. The factors which affect neck were the mental states, breastfeeding, past history of PMS, and anemia during pregnancy. The prevalence of neck pain was 73.1%, one-fourth of which occurred after birth. The most common area was the superior part of the trapezium muscles, (Koyasu et al. 2015)

There have another important issue after delivery is urinary incontinence. It was also common during pregnancy. Incontinence reported by pregnant women usually in the second and third trimester and the absence of incontinence in the first trimester suggests that the physiological and anatomical changes in pregnancy that predispose to incontinence occur later in the pregnancy (Adaji et al. 2011). Pelvic floor muscle strengthening exercise or kegel exercise helps to strengthen the muscles especially levator ani that supports the bladder, uterus and bowels. Intensive training of the pelvic floor muscles facilitate during pregnancy rather that obstruct labour (Koyasu et al. 2015). Many women experiences urinary incontinence during pregnancy as distressing and disabling symptom. It may occur due to anatomical and physiological changes affecting the lower urinary tract and also due to hormonal changes during pregnancy. The increasing level of estrogen and progesterone make the bladder more squamous, the detrusor muscles undergoes hypertrophy and hypotonia with an increasing bladder capacity. The bladder also undergoes anatomical changes such as upward and anterior displacement of bladder, making it to become abdominal, its base also enlarged and the trigone become more convex then concave. In radiological investigations, distortion of the bladder by the fundus of the uterus also occurs (Adaji et al. 2011).

Due to some adaptive modifications during pregnancy, female body undergoes increase the number of micturition and worsens urinary urgency and any preexisting stress urinary incontinence. The prevalence of urinary incontinence ranges from 23% to 67% during gestation and 6% to 29% after delivery (Gamerio et al. 2011). The increased potential for urinary incontinence in antepartum women needs early identification (Abrams et al, 2009). It is a common condition among women and etiology is multifactorial, but pregnancy and delivery may the major risk factors, especially in young and middle-aged women (Wesnes et al. 2010). It was also common after cesarean section delivery. Normally it is resolve after few days but if there any wrong procedure during cesarean delivery then it is persist.

Urinary incontinence is defined by the International Continence Society (ICS) as any involuntary urine loss (Abrams et al. 2009). The prevalence of urinary incontinence varies much, according especially to the type of population and the different age groups investigated. It is more frequent in women than men, and it is estimated that one in every four women have some type of urinary loss (Contreras 2004). Childbearing is an established risk factor for urinary incontinence among young and middle-aged women, (Rortveit et al. 2001). It has been suggested that vaginal delivery is the main contributing factor, possibly because of damage to important muscle tissue or nerves. However, pregnancy itself may cause mechanical changes, hormonal changes, or both that can lead to urinary incontinence. Results of epidemiologic and path physiological studies assessing the relation between the mode of delivery and incontinence have been inconclusive, (Farrell, Allen & Baskett 2001). Women who had delivered by cesarean section were at higher risk for any incontinence than were nulliparous women. Vaginal delivery was associated with a greater increase in risk. The risk of moderate or severe incontinence was also higher in the vaginal-delivery group than in the cesarean-section group. As compared with nulliparous status, cesarean section was associated with stress incontinence and mixed-type incontinence, whereas vaginal delivery further increased the risk of stress incontinence only (Rortveit et al. 2003). The arguments used to justify the lack of protection caused by a C-section include physiological alterations brought by pregnancy, such as changes to anatomical relations between the bladder and the uterus, reduced strength of the fascia that anchors the bladder neck, high levels of progesterone and bladder instability (King & Freeman 1998). On the contrary,

other findings point to meaningless incontinence rates in patients with a history of a C-section when compared to those who underwent vaginal delivery (Guarisi et al. 2001).

Current evidence indicates that urinary incontinence (UI) and back pain (BP) following pregnancy and childbirth are associated with functional impairment and lifestyle alterations for postpartum women. In addition, UI is embarrassing, debilitating, and threatens women's self-esteem, body image, and sexual activities (Wohlrab & Rardin 2008). The prevalence of UI varies widely with reports from 6 to 43% and most recently to affect 18.6 to 60% of postpartum women (Haddow et al. 2005). Similarly, the prevalence of BP in postpartum has been reported between 3.9 and 89.9% .Several large epidemiologic studies have reported on the relationship between UI and mode of delivery (MacLennan et al. 2000). Vaginal delivery has been shown to be an independent risk factor for the persistence of UI in the first three postpartum months. Several other studies support increased risk of UI with vaginal delivery and imply that C-section may be protective of UI (Torrisi et al. 2012). Obstetrical management of labour and delivery resulting in trauma, severe tearing and episiotomy have been reported to contribute to development of UI after childbirth. Other UI predictors included age at delivery, parity, obesity, maternal smoking and infant birth weight > 4000 g (Robinson & Cardozo 2003).

BP and UI are common occurrences after childbirth, for most women the symptoms are mild and do not impair performance of daily chores, being these related or not to the childrearing. However, women who do report impaired functionality may undergo lifestyle changes with impact on general health. To improve the level of functionality and further the effects on quality of life for mothers and their families, health care professionals may inform pregnant women about potential UI and recurrent BP and treatment options following pregnancy (Mannion et al. 2015).

There have another problems associated with cesarean section delivery is sexual dysfunction. Sexual dysfunction is defined as continuous or repetitive decrease of sexual desire, arousal and pain during intercourse and failure in achieving sexual orgasm (Bahl et al. 2005). This common problem is thought to be age related and progressive (Khajehei et al. 2009). Studies have shown that sexual dysfunction has an important effect on women's life quality as well as life after marriage. In a most

recent study in our region, the prevalence of female sexual dysfunction was reported to be approximately 62% in healthy women (Jafarzadeh et al. 2016). Various factors can affect sexual function. Pregnancy and child birth are two important and common factors which are reported to have controversial effects on sexual function (Brubaker et al. 2008). Sexual function fluctuates within 6 months after delivery and will gradually improve (Yeniel & Petri 2014). Both pregnancy and delivery are known risk factors of pelvic floor dysfunction. Pelvic floor dysfunction can be manifested as urinary or fecal incontinence, female reproductive organ prolapsed, and pleasure and sexuality disturbances. Hormonal changes, as well as mechanical forces during pregnancy and also the pressure of labor process on pelvic floor muscles, can provide neural and muscular damage to pelvic floor organs; leading to further sexual dysfunction (Jundt et al.2015).

In our country, the rate of C-Section with no medical indication is growing, and women show tendency toward C-Section because of personal beliefs including fear of pain and injury during child birth, and complications of Normal Vaginal Delivery (NVD) (Faisal et al. 2014). According to the rise in tendency toward C- section and because of antithesis about the long-term effects of type of delivery on female sexual function, a study evaluate the long-term effect of delivery type on female sexual function in an Iranian population. One study shows that there are no relation between type of delivery and female sexual dysfunction. This could be a document to prove the fallacy of the common belief in our region that C-Section could prevent sexual problems (Ghorat et al. 2017).

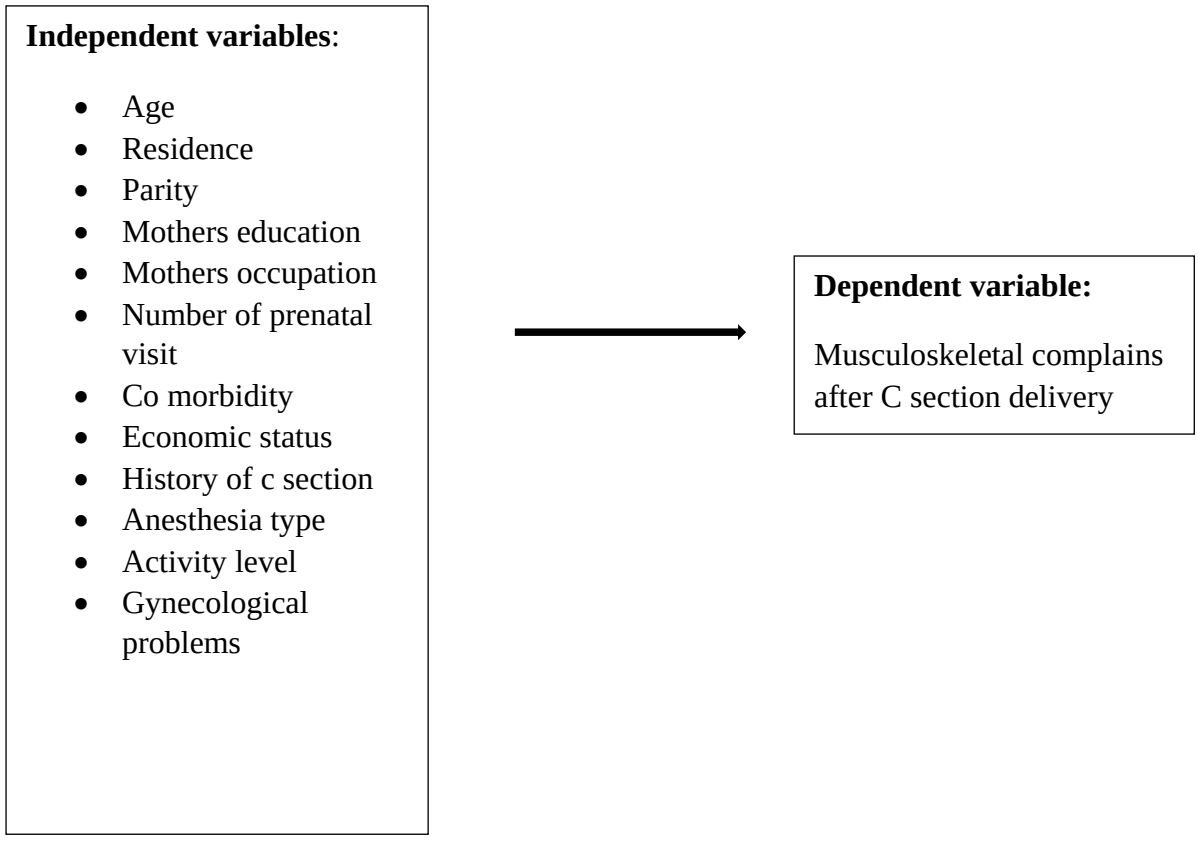
Weak abdominals is another factor associated with cesarean section delivery. During a C-section, an incision is made through the abdominal muscles. After C-section, there might be chance to increase excess midsection weight and weak abdominal muscles. There may be possibility to reduce muscle tone for a few periods. There are many reasons a woman may need a Cesarean section, whether planned or unplanned. Regardless of the reason for the surgery, a C-section requires a different recovery than a regular vaginal birth. Understanding the importance of keeping the stomach muscles safe after a C-section can help recovery (Jacques 2013). C-sections are usually performed in one of two ways, depending on the needs of both mother and baby. Most C-sections are performed with a bikini line incision, which is a low horizontal cut just above the pubic bone. However, in some instances the doctor may choose to perform

a vertical incision. According to the Mayo Clinic, a vertical incision may be necessary if the delivery is urgent, or if other complications require a different approach to access the baby. A vertical C-section cut stretches long ways, from the navel down to the pubic bone. In both cases, the skin of the abdomen is cut, and the abdominal muscles are spread apart in order to expose the uterus (Howell 2016).

Evidence of scientific studies points to the essential role of physiotherapy and physical activities in health promotion, improve quality of life, prevention and control of various problems in pregnant women. Until a few decades ago, pregnant women were advised to reduce their activities and also interrupt their occupational work especially in the final stage of the pregnancy. But now a day, positive effects of regular exercise and physical activity during gestation are encouraged for the better quality of prenatal and postnatal life of pregnant women and this is explained by fact that physical activities causes a thermal response and circulatory redistribution, shifting the blood concentration from the uterus and placenta to other extremities thus helps to prevent low back pain, reduce cardiovascular stress, prevents thrombosis and varicose vein and many other physical problems (Schlussel et al. 2008).

CHAPTER III: RESEARCH METHODOLOGY

3.1. Conceptual framework



3.2 Study Objectives

3.2.1 General Objectives:

Identify the Common Musculoskeletal complains arising among women following Cesarean Section Delivery.

3.2.2 Specific Objectives:

1. Identify specific socio-economic characteristics and health status of women who undergo cesarean section delivery.
2. To identify the common musculoskeletal complains and most occurring complains after C- section delivery
3. To identify the long term effect after C-section delivery
4. To identify if there exists any association between study variables with the musculoskeletal complain after C section delivery.

3.3 Study design:

The research design is the overall "blueprint" that guides the researcher in the data collection stages. It is used to systematically collect the data needed for research purposes and to maximize the reliability and validity of research findings (Gratton & Jones, 2004). Quantitative methodological research designs were used in the study. Quantitative research can be used to measure and analyze behavior numerically and objectively. Variables are directly measurable and easily converted to numerical forms, which can then be statistically analyzed (Gratton & Jones, 2004). Cross sectional studies also known cross sectional analyses, transversal studies, prevalence study which are one type of observational study that involves data collection from a population, or a representative subset, at one specific point at time. The study was conducted by using cross sectional study design to meet the study objectives. Because the cross sectional study is the simplest variety of descriptive or observational epidemiological study that can be conducted on representative samples of a population. This design involved identifying group of people and then collecting the information that required when they use the particular service. Cross sectional studies gather information about the prevalence of health related states and conditions and

measure the frequency of conditions and demonstrate associations. The researcher was choose the quantitative survey method to carry out the research aim and objectives because the quantitative methods are appropriate if the issue is known about, relatively simple and unambiguous. The purpose of quantitative research is theory testing to establish facts, show causal explanations and relationships between variables, allow prediction. Quantitative research designs are predetermined and structured and do not change during the study. Quantitative research studies answered specific research questions by producing statistical evidence to prove a point.

A Quantitative design, a cross sectional study was conducted for women with cesarean section delivery who come at CRP out door for different treatment purpose in-between January 2018 to March, 2018. The researcher will try to identify the correlation between the dependent variable and independent variable. To find these questions answer cross sectional study is the best to collect information from large data.

3.4 Study population:

A population refers to the members of a clearly defined set or class of people, objects or events that are the focus of the investigation. The criteria of study populations were determined from a literature review and the goals for the study. Selection criteria were established gradually, as the assumptions and theoretical base of the study unfold. The women who had at least one cesarean section delivery in between two years and come at CRP outdoor for different treatment purpose. According to Bangladesh Demographic Health Survey 2014 the cesarean section rate among women is about 23%. The researcher collected data from January 2018 to March 2018 among the cesarean section women who come at CRP Savar & Mirpur.

3.5 Study area:

CRP Outdoor, Outpatient physiotherapy department CRP Savar, Pediatric unit CRP Savar & Mirpur, Gynecological unit of CRP Mirpur.

3.6 Study period:

The study was done, as a part of the academic education and it was going on from October 2017 to May 2018. The study will be started with protocol acceptance and finish with final report submission. Work schedule is annexed.

3.7 Sample size:

It is very difficult to establishing the best size of sample since this decision depends very largely on the investigator which is being undertaken. Statistical studies are always better when they are carefully planned. In the study, sample must be adequate in size, relative to the goals of the study. Study sample must be "big enough" that an effect of such magnitude as to be of scientific significance will also be statistically significant.

Sample size estimation: $n= \{\frac{Z\left(1-\frac{\alpha}{2}\right)}{d}\}^2 \times pq$

$=(\frac{1.96}{0.05})^2 \times 0.23 \times 0.77$

$=1536.64 \times 0.1771 \approx 272$

Here, Z $(1-\frac{\alpha}{2})$ = 1.96, d= 0.05, P=0.23, q= 1-p =1-0.23, = 0.77

So estimated sample size is 272.

There is no exact idea that how many cesarean section women are come into CRP. So the researcher takes help from the BDHS 2014 for calculating the sample size. But as the study was performed as a part of academic research project and there were some time limitations. So 154 women who undergo cesarean section delivery were selected as the sample of this study.

3.8 Inclusion & exclusion criteria:

3.8.1 Inclusion criteria:

- Women with at least one cesarean section delivery in between two years
- Women who was willing to participate
- Age range was 15-49 years,(BDHS 2014)
- The patient has better understanding the given commands

3.8.2 Exclusion criteria:

- Women with instrumental, induced or assisted vaginal delivery
- Women who are not willing to perform

3.9 Sampling technique:

Purposive sampling is used for easy to access a particular subset of people from large population. Researcher chooses this sampling method as it is the ability to gather large amounts of information by using a range of different techniques. This variety will, in turn, give a better cross-section of information. Beside this it is less time consuming compared to many other sampling methods because only suitable candidates are targeted. And results of purposive sampling are usually more representative of target population compared to other sampling methods.

3.10 Data collection tool:

Data was collected by semi structured questionnaire. Researcher was developing a questionnaire for the study based on the literature review. For linguistic validation of a questionnaire the questionnaire was translated into Bengali. The developed questionnaires tool was reviewed by panels of experts in BHPI in order to ensure content comprehensiveness, clarity, relevancy, and applicability. The test-retest reliability coefficient was calculated. Pilot study was carried out on 10 patients to test feasibility, objectivity, and applicability of the study tools. Based on the results of the pilot study, the needed refinements and modifications were made. Data was collected by face to face interview method.

Data collection procedure:

Step 1

Pilot study:

A pilot study was conducted to increase the reliability of the instrument for data collection. Secondly, it was necessary for the author to learn how to administer the instrumentation from which unnecessary errors during the administration could be identified and resolved. This study involved women with cesarean section. The result of the pilot study was used to make changes to the structure of the questionnaire to correct some of the challenges encountered such as language and grammar used. The time taken to complete the questionnaire was also reduced from 15 minutes to 10 minutes.

Step 2

After completion of pilot study the instrument were refined and finally collected the data. The questionnaire had three parts. First part was demographic data, second part was information during pregnancy to delivery, third part information after cesarean section delivery.

3.11 Data management and analysis:

The data from the questionnaire was analyzed using the Statistical Package for Social Sciences (SPSS) version 16.0 and was reflected as descriptive statistics of frequency, mean, standard deviation, and percentages as appropriate. Continuous data were presented as means (standard deviation). Categorical data were presented as numbers and percentages. Chi-square test was used to identify if there is any association between dependent variable and independent variable. Binary logistic regression was used to calculate the association pattern. $P<0.05$ was considered to indicate a statistically significant relationship.

3.12 Quality Control & Quality assurance:

Quality control and quality assurance were implemented throughout the data life cycle, but researcher specially focused on measures that can be taken during collection. Quality assurance and quality control was maintained to describe activities that prevent errors from entering or staying in a data set. These activities ensured the quality of the data before it was collected, entered, or analyzed, and monitoring and maintaining the quality of data throughout the study. Researcher ensured the Quality Assurance in Research (QAR) comprising all the techniques, systems and resources that are deployed to give assurance about the care and control with which research has been conducted. The researcher took the responsibilities to plan a transparent research project. Data collector got the training about questionnaire to ensure the competence of data collection. Researcher maintained the proper documentation of procedures and methods and maintains the research records according to supervisor guideline. The samples and materials were handled carefully by researcher.

3.13 Ethical consideration:

The proposal was reviewed by the ethical board/committee of CRP and it was approved by BHPI, the academic institute of Dhaka University. Permission was attained the patient records for participant contact address. A written information sheet was shared to participants informing them about the aims and significance of the study and if the participants agree to participate in the study then his or her consent was taken. On the day of data collection, participants were informed about their rights and assured that all information provided will be treated as confidential material and used strictly only for the study. In addition, participants were informed that they had the right to withdraw any time for personal reasons. They were also informed about their right not to respond to questions that in their view were sensitive. No patients name and address was identified to the public domain and the entire document was being confidential. All data and relevant documents were stored in a secured file cabinet.

3.14 Inform consent

The participants identified to participate in the study received consent forms verbally prior collecting of data. The consent forms explained the purpose of the study, stressed the importance of their participation and rights. It also indicated the researcher’s contact information.

CHAPTER IV: RESULT

The aim of the study was to find out the common musculoskeletal complaints arising among women after cesarean section delivery. Study sample was collected from the Center for the Rehabilitation of the Paralysed (CRP). 154 participants were taken for the study. The data were analyzed with SPSS 16.0 version. All the variables were defined and put their values in SPSS spreadsheet and data were input there. Data were analyzed based on the objectives of the study and presented below accordingly.

4.1 Demographic Data

Characteristics	Total N	n%
Age range in years		
15-25	53	34.4
25-35	91	59.1
35-45	10	6.5
Total	100.0	100.0
Age (Mean) SD		28.25(5.12)
Living area		
Rural	40	26.0
Urban	114	74.0
Educational status		
Primary	7	4.5
Secondary	29	18.8
Higher Secondary	40	26.0
Graduate	51	33.1
Post Graduate	26	16.9
Occupational Status		
Housewife	93	60.4
Teacher	8	5.2
Service	51	33.1
Others	1	0.6
Economical Status		
Higher	11	7.1
Middle	130	84.4
Lower	13	8.4

Table 4.1 is showing that among 154 participants common age group were 25-35 and the percentage was 59.1%. Mean age of the participants was 28.25 with 5.12 standard deviation. The study found that participants were mostly living in urban area (74.0%).

Study also found that most participants were graduate (33.1%) and most of them were housewife (60.4%). Table is also showing that large number of participants was from the middle class group (84.4%).

4.2 Information about maternal health status before present cesarean delivery

Characteristics	Total N	n%
Multiple Parity		
Yes	97	63.0
No	57	37.0
No of Pregnancy		
1	57	37.0
2	65	42.2
3	25	16.2
4	6	3.9
7	1	0.6
Miscarriage/Abortion		
Yes	47	30.5
No	107	69.5
No of miscarriage/abortion		
1	38	24.7
2	5	3.2
No of Ceasure		49.4
1	76	48.1
2	74	2.6
3	4	
Year of last ceasure		
2016	51	33.1
2017	95	61.7
2018	8	5.2
Anesthesia type		
Spinal Anesthesia	154	100.0

Table 4.2 is showing the information about mother's previous pregnancy and cesarean status. Among 154 participants 63.0% had multiple parity and mostly (42.2%) have two children. Only 30.5% participants had miscarriage or abortion and among that single time miscarriage was higher (24.7%). Among the participants 49.4% have 1st time cesarean section and 48.1% have second time cesarean section delivery. The study had sampling criteria that the participant must have last cesarean section in between two years. So the investigator collected data only from those women who had last cesarean in between 2016 to 2018. Result showed that 61.7% participant had last cesarean delivery on 2017 and 33.1% on 2016. The entire participants (100.0%) have undergone surgery by spinal anesthesia.

4.3 Information about Co morbidity and other health problems

Characteristics	Total N	%
Diseases present in antenatal period		
Yes	48	31.2
No	106	68.8
Type of Co-morbidity		
Hypertension	23	14.9
Diabetics	16	10.4
Heart diseases	1	0.6
Thyroid disorder	2	1.3
Others	6	3.9
Antenatal care		
Yes	152	98.7
No	2	1.3
No of antenatal visit		
1-4	8	5.2
5-9	89	57.8
9+	55	35.7
Gynecological problems before pregnancy		
Yes	24	15.6
No	130	84.4
Type of Gyenocological problems		
Dysmenorrhea	5	3.2
Ovarian cyst	4	2.6
Fibroid in the uterus	10	6.5
Poly cyst ovarian syndrome	1	0.6
Others	4	2.6
Complication during delivery		
Yes	61	39.6
No	93	60.4
Type of complications		
Preterm labor & premature delivery	19	12.3
Prolong labor	12	7.8
Breech presentation	4	2.6
Amniotic fluid lickage	19	12.3
Others	7	4.5

Table 4.3 is showing that 31.2% have previous illness during antenatal period among those 14.9% have hypertension and 10.4% have diabetics. The tendency to seek antenatal care among the study sample were evident and 98.7% women took antenatal

care from different hospitals. Result showed that 57.8% women took 5-9 times antenatal visit,Only 15.6% reported that they have suffered from gynecological problem before pregnancy and among those fibroid in the uterus was common (6.5%). During delivery 39.6% participants have complications and most common complications were pre-term labor & premature delivery and amniotic fluid lickage and percentage was 12.3% for both.

4.4 Information about musculoskeletal complain and seeking advice

Characteristics	Total N	N%
Musculoskeletal complain during pregnancy		
Yes	78	50.6
No	76	49.4
Type of problems		
Diastesis of rectus abdominis	3	1.9
Low back pain	66	42.9
Pelvic pain	3	1.9
Hip pain	5	3.2
Seeking physiotherapy advice		
Yes	17	11.0
No	137	89.0
Getting advice from PT		
Yes	15	9.7
No	139	90.3
Follow any exercise at home		
Yes	16	10.4
No	138	89.6
Walk 30mins daily		
Yes	136	88.3
No	18	11.7

Table 4.4 is showing the data about musculoskeletal complain during pregnancy and also the type of the problems. Study found that 50.6% participants have suffered by musculoskeletal problems during pregnancy and most common problem was low back pain (42.9%). This table is also showing the data about physiotherapy advice and the

life style of participants. The result was only 11.0% women were seeking for physiotherapy advice during the pregnancy period and among those only 9.7% got physiotherapy advice from physiotherapist. Though most participants didn't get any advice for physiotherapy, 88.3% women have walked at-least 30mins per day.

4.5 Musculoskeletal complain after cesarean section delivery

Characteristics		Total N%
Musculoskeletal problems after C-section		
Yes	125	81.2
No	29	18.8
Type of problems		
Low Back pain	116	75.3
Neck pain	6	3.9
Perineal pain	2	1.3
Urinary incontinence	3	1.9
Weak abdominalis	7	4.5
Low back pain		
Yes	116	75.3
No	38	24.7
Duration of LBP		
0-1year	92	59.7
1-2years	24	15.6
Problems persist		
Yes	105	68.2
No	49	31.8
Duration of persist problems		
0-1year	86	55.8
1-2years	19	12.3

Table 4.5 is showing that 81.2% participants have different type of musculoskeletal problems after cesarean section delivery and low back pain were mostly (75.3%) occurring symptoms. Among them 59.7% participant reported that they suffered from LBP in between 0-1 year. A large number of data (68.2%) showed that the problems have arisen just after the cesarean section delivery and were still persisting, 55.8% participants reported that their problems have persisted in between 0-1 year. So there

is findings that complain were arising more in between 0-1 year and also they were persisting in between 0-1year. So author got a crucial point that is more musculoskeletal problems after cesarean section usually happens in the 1year.

Association between variables

4.6 Association between Musculoskeletal complain after cesarean section delivery with Age range, Living area, Educational status, Occupation, Economical status, Co-morbidity and others.

Variables	Chi-square value	P value
Age range	0.640	0.726
Living area	6.605	0.010**
Educational status	14.085	0.015**
Economical status	9.012	0.011**
Co-morbidity	7.222	0.007***
Gynecological problems before pregnancy	0.746	0.571
Problems during delivery	2.159	0.142
Musculoskeletal problems during pregnancy	3.736	0.053

***Significance at the level of *P* <0.05**

From the previous table it was shown that there were relationships in between some of the variables. So the author wanted to see if there were any associations existing between the study variables. The result has shown in the previous table. Study findings indicated that there was association between musculoskeletal complain after cesarean section delivery with Living area (P<0.010), Educational status (0.015), Economical status (0.011) and Co-morbidity (0.007). In case of Age range,

Occupation, gynecological problems before pregnancy, problems during delivery and Musculoskeletal problems during pregnancy author didn't found any association.

From the above mentioned result it has shown that Low Back Pain was the most common musculoskeletal complain. So the author wanted to find out if there was any association between LBP with the some specific study variables.

4.7 Association between LBP with other Study Variables

Variables	Chi-square value	P value
Living area	9.237	0.002***
Education	13.523	0.019*
Co morbidity	7.628	0.006***
Musculoskeletal problems during pregnancy	5.454	0.020*
Duration of persist LBP	77.864	0.000***

***Significance at the level of *P* <0.05**

This section is showing the association between LBP with the other study variables. Result showed that there was strong association between the LBP with Living area (0.002), Co morbidity (0.006), and duration of persistence LBP (0.000). There was also association between LBP with Education (0.019), and Musculoskeletal problems during pregnancy (0.020).

Logistic regression:

4.8 Logistic regression of musculoskeletal problems after cesarean section with selected characteristics:

	Sig.	Odd Ratio (OR)	95.0% C.I.for EXP(B)	
			lower	upper
Living area				
Rural(RC)				
Urban	.012	2.949	1.265	6.878
Comorbidity				
Yes (RC)				
No	.013	0.205	.059	.716
Economical status				
Higher				
Middle	.999	1.385E9	.000	
Lower (RC)	.022	3.988	1.226	12.975

RC indicates the reference group in each category.

Table 4.8 is showing, logistic regression of musculoskeletal complains after cesarean section delivery with respondents selected characteristics. A binary logistic regression was run to examine the relationship of musculoskeletal complains after cesarean section delivery with living area, co-morbidity and economical status as predictors. All the predictors were entered into the logistic regression model one by one to determine the significant individual contributions. Living area and economical status was found to be statistically significant with P value. Respondents living area those were living in urban area 2.9 (p=.012, 95% CI: 1.265-6.878) times higher to have musculoskeletal complains after cesarean section delivery compare to respondents those were living in rural area. Respondents economical status those were middle class group showed 3.9 (p=.022, 95% CI: 1.226-12.975) times higher than the lower class group. Respondents who weren't suffered by co-morbidity were less likely to

having musculoskeletal complained after cesarean section delivery (P=0.007, 95% CI: 0.059-0.716).

4.9 Logistic regression of LBP after cesarean section with selected characteristics

	Sig	Odd Ratio (OR)	95.0% C.I.for EXP(B)	
			lower	upper
Living area				
Rural (RC)				
Urban	0.003	3.273	1.492	7.181
Co- morbidity				
Yes (RC)				
No	0.009	.257	.093	.709
MS problems during pregnancy				
Yes (RC)				
No	0.021	.408	.190	.876
Duration of Problems	.000			
0	0.000	.052	.011	.254
0-1	.012	4.941	.650	37.551
1-2(RC)				

RC indicates the reference group in each category.

Table 4.9 is showing the logistic regression of LBP with Living area, co-morbidity, MS problems during pregnancy and duration of persist problem. All the predictors have entered into the logistic regression model one by one to determine the significant individual contributions. Living area and duration of persisting problems were found to be statistically significant with P value. Respondents living area those were living in urban area shows 3.2 (p=0.003, 95% CI: 1.492-7.181) times higher to have LBP than those were living in rural area. From the frequency and association table it has shown that LBP was persisting after cesarean section delivery. From the logistic regression table it has also shown that LBP persist 0-1 year from the cesarean delivery which was 4.9 (p=.012, 95% CI: 0.650-37.55) time higher than the 1-2 years. The

respondents who didn’t suffered by any type of co-morbidity were less likely to suffered by LBP after cesarean section delivery (OR: 0.257, 95% CI: 0.093-0.709). Also the respondents those didn’t suffered by musculoskeletal problems during pregnancy were less likely to had LBP after cesarean section delivery (OR: 0.408, 95% CI: 0.190-0.876).

CHAPTER V: DISCUSSION

The result of this study supported that the women who undergone by cesarean section delivery suffered by different musculoskeletal problems. Among them the rate of low back pain was higher than others. There another finding was that women suffered by musculoskeletal problems from just after cesarean section to more than one years. But from cesarean time to one year time was more vulnerable. Several factors have been proposed associating with LBP after cesarean section delivery including demographic factors (age, living area & occupation), parity, musculoskeletal complain during pregnancy. From this study the most vulnerable age group suffered by musculoskeletal complain was 25-35 years (59.1%) and mean age was 28.25 years with 5.12(SD). Chia et al. (2016) conducted a study among the women with cesarean section delivery with spinal anesthesia and found that the most vulnerable mean age was (29.89 years). So it was revealed that a woman in between 25-35 years age was mostly prone to suffered by musculoskeletal problems. The main cause behind that this age is child bearing age.

The study found that the women who was living in urban area was mostly (74%) suffered by musculoskeletal complain after cesarean section delivery. The study found the association between two study variables that living area with musculoskeletal problems after cesarean section delivery and P value was 0.010. Also in logistic regression it was shown that urban women are more likely to having chance musculoskeletal complain than rural women (OR:2.949 & 95% CI:1.265-6.878). According to BDHS 2014 the rate of cesarean section delivery who was lived in urban area was 38.1%. Urban women were mostly interested to undergo cesarean section delivery than rural and musculoskeletal complain rate was also higher among urban women.

Study showed that the women who were graduate show more have higher percentage (50%) to have musculoskeletal complains. Also there was association between educational status and musculoskeletal complain after cesarean section delivery and P value was 0.015. In BDHS (2014), also shared that cesarean section rate was higher (51.2%) among those women who were graduated or more. The study also found that

cesarean section rate was higher among higher education so it indicated that there was a relation between musculoskeletal complain and higher education.

In case of occupation housewife shown higher percentage (60.4%) for having musculoskeletal problems than other occupations. It was due to the agronomical setting. Housewife done their activities in awkward position which was not good for their health. But statistical interference was not significant for the study group.

In economical status the mostly vulnerable group was middle income group and that was 84.4%. Study found the association between the variables and P value was 0.011. In logistic regression analysis middle class group suffered more than the lower class group (OR: 3.988, 95% CI: 1.226-12.975). These was because several study shown that cesarean section done mostly in middle and higher economy class. In (BDHS 2014) the cesarean section rate among women with middle to higher class group and it was 51.4%. So the musculoskeletal complain rate was also higher in that group.

The women with who has multiple parity mostly (63%) suffered by musculoskeletal problems after cesarean section delivery. Different study shown that during pregnancy there was several biomechanical change in mothers body and sometimes these change lead to musculoskeletal problems during pregnancy. Women with multi parie had larger (21%) chance to develop musculoskeletal complain after pregnancy (BDHS, 2014). Number of cesarean section was also responsible for musculoskeletal complain after cesarean section delivery. This was because some study shown that due to cesarean section delivery there was huge change in mothers body. Main responsible factors for these change was spinal anesthesia and incision for cesarean section delivery. From the study group the entire subject (100%) undergo surgery by spinal anesthesia. Several study shown that there was adverse effect of spinal anesthesia and it caused post pertum low back pain after cesarean section delivery. Chia et al. (2016) done a nationwide population based cohort study From the Taiwan National Health Insurance Research Database (NHIRD), among the population who undergoing cesarean delivery with neuraxial anesthesia (NA). They study over 40057 women among them 12960 was undergo cesarean section delivery with spinal anesthesia. In this study 31.82% suffered by low back pain.

There was another responsible factor was co-morbidity. The women who suffered by different risk factors such as diabetics, hypertension, heart diseases etc. were prone to had musculoskeletal complain and it was 36%. The study also find the association between variables and P value was 0.007. in logistic regression analysis result shown that the study group who had no history of co morbidity were less likely to having musculoskeletal complains after cesarean section delivery (OR: 0.205, 95% CI: 0.059-0.716). Sabino and Grauer (2008) stated that there are so many problems arising in pregnancy period including hypertension, sleeplessness, diabetes mellitus, tenosynovitis, general weakness and fatigue. During pregnancy the female body has so many hormonal and anatomical changes that affect the musculoskeletal system. These changes may cause various musculoskeletal complaints, predispose to injury or other physical and physiological problems (Irelands &Otts 2011).

The study shown that around 50.6% women suffered by musculoskeletal complains during pregnancy among them 42.9% women suffered by LBP. As a study of Swedish women, almost 69% of the participants reported suffered from low back pain during their pregnancy (Koirala et al. 2011). According to Chia et al. (2015), 50-90% women suffered from low back pain in the prenatal period. In a study, 59% of Iranian women suffered from low back pain during their pregnancy (Cheng & Lee 2008). Low back pain during pregnancy was very common because there was several causative factor which leads to low back pain such as hormonal imbalance, body biomechanical change, ligaments laxity.

Lower back pain after cesarean section delivery was also common. From the study participants 81.2% women suffered by musculoskeletal complain after cesarean section delivery. Among them 75.3% suffered by low back pain. Another study shown that women who undergo cesarean section delivery suffered by low back pain around 77%. It was based on the study a secondary analysis from the All Our Babies Study, a prospective, community-based pregnancy cohort in Calgary, Alberta. Done by Mannion et al. 2015. There was another study which shown that after cesarean section delivery a women facing various difficulties among them the rate of low back pain was 54.5%. So it is mandatory to give more concentration on LBP (Ansara et al. 2005). Low back pain after cesarean section delivery mostly happen due to body biomechanical change during pregnancy and also after cesarean section delivery. Spinal anesthesia also one of concerning factor. Lack of awareness about the posture

and position also creates low back pain after pregnancy. So it was need to give proper attention on above issue.

Those participants who were suffered by different musculoskeletal complain among them 68.2% problem persist. Mostly persist problems were in between 0-1 years post surgical period. Postpartum backache at 1 month incidence was 49%. Remission of pain occurred in 51% at 1 month and 78% at 6 months in caesarean section group (Joshi & Joshi 2016). There was another study revealed that 47.4% women suffered by LBP at 5month after cesarean section and 64.7% suffered at 12 month after cesarean section delivery in France. There was another statistics that 40.4% suffered at 5 month and 50.9% at 12 month by LBP in Italy (Saurel-Cubizolles et al. 2000). Other studies report a much lower prevalence of BP at one year postpartum (Thompson et al. 2002). For example, Schytt et al. 2004, found 33.7% prevalence at 12 months in Swedish women, higher than at 2 months after childbirth (28%). In a large Australian study, BP affected more than half of the sample in the first 8 weeks (53%), with the rates declining slightly over the first 6 months postpartum (45%) (Thompson et al. 2002). This was because the effect of surgical procedure is main considering factors for having back pain just after cesarean section delivery. Low back pain became very concerning issue during post natal period. It hampered their daily activities including take care of their baby. It creates a long term effect which affects their personal, family and social life also.

Sometimes others associated factors such as physiologic, emotional, and life-style changes of pregnancy and the puerperium, including fatigue, mood swings, body image changes, and assumption of the parental role play an important role on mother's life (Berry 1983). Cesarean birth adds additional stress, including the stress of surgery. Women who experience cesarean delivery have reported feelings of depression, anxiety, guilt, less satisfaction with the birth experience, loss of control, and loss of self-esteem (Cox & Smith, 1982). These also hamper their lifestyle.

The researcher found in this study that among the women, very few of them received physiotherapy treatment for musculoskeletal complaints during prenatal period. They were not aware about the role of physiotherapy in gynecological area. Gameiro et al. (2011) had shown in his research that exercise training during pregnancy is effective

in pregnant women to reduce the chance of musculoskeletal disorder. There was a proper guideline about gynecological physiotherapy. In Bangladesh, obstetric physiotherapy is a very new concept and is not well established. People were not aware about the physiotherapy treatment, so it needs to organize awareness program of gynecological physiotherapy and its effectiveness in Bangladesh.

CHAPTER: VI CONCLUSION

6.1: Conclusion

Cesarean sections sometimes save the lives of mothers and babies; however, they are excessively used compared to medical necessity, which is influenced by various factors. Since, in most cases the risks of cesarean sections are greater than the benefits, particularly in cesareans that are not medically indicated, it is astonishing that cesarean surgery is the most common surgical procedure, taking away resources from medically necessary care. Musculoskeletal problems during and after pregnancy was really a concerning issue. This study tried to focus about musculoskeletal complains after cesarean section delivery. Although physical problems such as LBP and others are commonly associated with the postpartum period and often regarded as transient, they are strongly related to impairment of maternal performance of daily tasks. Raising awareness of health professionals about these debilitating conditions may change attitudes towards these patients to receive the care they need. Sometimes socioeconomic condition was not so much positive about the maternal health issue. But it was also considered that cesarean section delivery was mostly popular among the middle to higher socioeconomic situation and also it was very common among the educated population. But they also gave less priority these maternal health issue. Now-a-days cesarean delivery rate increased and also increase the rate of musculoskeletal complain especially low back pain. These also hampering their daily activities which are making the person less productive. So for the better future it is needed to give focus on the mentioned issues and make the awarenessamong mothers and family members about those issues and also needed to take necessary steps. Health professional also need to give proper attention on this musculoskeletal problems which are related to pregnancy and delivery. By the combined effort of health professionals and mothers and family members it is possible to reduce the rate of unexpected cesarean delivery rate as well as also the musculoskeletal complains after caesarean section. And at the end this will help to make maternal life better.

6.2: Recommendation

1. It is needed to be included long term musculoskeletal complain in the nationwide survey.
2. More study is needed to explore the musculoskeletal complain and its adverse effect after cesarean section delivery.
3. More study is needed to explore the psychosocial effect after cesarean section delivery.
4. It is needed to do qualitative study with in-depth interview to identify the actual causes which are creating the problems after cesarean section delivery.
5. It is needed to do further study with large sample size and also including the maternity hospital.
6. Study should be needed for identify the issue related with cesarean section delivery.
7. It is need to do comparative study to identify the management process of musculoskeletal complain after cesarean section delivery.

6.3: limitations

1. Lack of prior research studies on the topic in the Bangladesh. So there is no valid information about musculoskeletal complain after cesarean section delivery in Bangladesh which has affected in the sample size selection.
2. As it is a center based study, data were collected only from those women who come at Centre for the Rehabilitation of the Paralysed (CRP) for different treatment purpose but this research does not reach the women treated in other hospitals.
3. There was also time limitation so investigator didn't reach the target sample size.
4. Though CRP is not a maternity hospital so there may be chance to develop some confounding variables.
5. Sample size was not big enough, so it creates problems in case of generalisability.
6. Study has only focused on the musculoskeletal complain after cesarean section delivery and didn't make any comparison with other type of delivery.
7. Another limitation of the study is that researcher could not conduct an in-depth study to find out the reason of occurring musculoskeletal complain after cesarean section delivery and other psycho-social issues.
8. Researcher collected data different place from the place of delivery so there may be chance to miss the relevant information.

CHAPTER VII: REFERRENCE

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APPENDIX

1. Consent Form (English)
2. Questionnaire (English)
3. Consent Form (Bengali)
4. Questionnaire(Bengali)
5. Permission Letter from IRB
6. Permission Letter for Data Collection

Information Sheet

I am Srabonti Saha, Clinical Physiotherapist of Physiotherapy Department of the Centre for the Rehabilitation of the Paralyzed (CRP), Savar, and Dhaka. Currently I am studing M Sc. in Rehabilitation Science under Dhaka University of Bangladesh. Towards fulfillment of the course module it is obligatory to conduct a research study. In this regard, I would like to invite you to take part in the research study, titled "Common musculoskeletal complain arising among women after cesarean section delivery-A patient based study at CRP." The aim of the study is to identify the common musculoskeletal complain arising among women after cesarean section delivery.

Your participation in this study is voluntary. If you do not agree to participate at all you can withdraw your support to the study anytime you want, despite consenting to take part earlier. There will be no change in this regard to participate or not to participate in this study. Your answer will be recorded in this questionnaire which will take approximately 20 minutes and will be kept highly confidential and private. You will not be paid for your participation. Participation in this study might not benefit you directly. This study will not the cause any risk or harm to you. Confidentiality of all documents will be highly maintained. Collected data will never be used in such a way that you could be identified in any presentation or publication without your permission. If you have any question now or later regarding the study, please feel free to ask the person stated below.

SrabontiSaha

Clinical Physiotherapist

Physiotherapy Department

CRP-Chapain, Savar, Dhaka-1343

Cell Phone: 01714033615

Consent Form

I have read or have been explained to me the information sheet and I am informed about the topic of the research. I have got opportunity to ask any query and discuss about the study with the data collector, I rendered satisfactory answer. I have informed about the risk and benefit of the research. I have understood that I am free to withdraw from the study at any time, without having any reason and without affecting present and future medical care. I am informed that all my answer will remain highly confidential.

I agree to take part in this study.

Participant's signature…….Date:……..

Data collector's signature…….Date:……..

Questionnaire

Data collection sheet

Title:"Common musculoskeletal complain arising among women after cesarean section delivery- A patient based study at CRP."

Case no:

Part-1: Socio-demographic information

1. Age of participant	…..years
2. Residence	i. Rural (1) ii. Urban (2)
3. Educational level	i. Illiterate (1) ii. Primary (2) iii. Secondary (3) iv. Higher secondary (4) v. Graduation (5) vi. Post-graduation (6)
4. Occupation	i. Housewife (1) ii. Teacher (2) iii. Service holder (3) iv. Farmer (4) v. Laborer (5) vi. Business (6) vii. Unemployed (7) viii. Retired (8) ix. Others (9)
5. Economic Status	i. Higher (1) ii. Middle (2) iii. Lower (3)

Part 2- Health information during antenatal period

6. Multiple parity	i. Yes (1) ii. No (2)
7. Birth order (in numbers)	
8. Have you ever terminated your pregnancy?	i. Yes (1) ii. No (2)
If yes, how many times…	
9. Number of cesarean section	
10. Mention the year of last C section	
11. Anesthesia type	i. General anesthesia (1) ii. Spinal anesthesia (2)
12. Do you have any illness at antenatal period?	i. Yes (1) ii. No (2)
If yes, please specify	i. Hypertension (1) ii. Diabetics (2) iii. Heart diseases (3) iv. Thyroid disorder (4) v. Others (5)
13. Sought prenatal treatment	i. Yes (1) ii. No (2)
If yes, Frequency of prenatal visit	
14. Do you have any gynecological problems before pregnancy?	i. Yes ii. No
If yes, please mention it….	i. Dysmenorrhea (1) ii. Ovarian cyst (2) iii. Fibroid in the uterus (3) iv. Endometriosis (4) v. Poly cyst ovarian syndrome (5) vi. Others (6)
15. Complication during delivery	i. Yes (1) ii. No (2)
If yes, specify the complications	i. Preterm labor & premature delivery (1) ii. Prolong labor (2) iii. Breech presentation (3) iv. Amniotic fluid lickage (4)

	v. Others (5)
16. Do you visit any physiotherapist during antenatal period?	i. Yes (1) ii. No (2)
17. Do you get advice about exercise from physiotherapist in the pregnancy period?	i. Yes (1) ii. No (2)
18. Do you continued any exercise at home?	i. Yes (1) ii. No (2)
19. Do you continued at least 30 minutes walking during pregnancy period?	i. Yes (1) ii. No (2)
20. Do you have any musculoskeletal complication during pregnancy?	i. Yes (1) ii. No (2)
If yes, mention it…..	i. Diastesis of rectus abdominis (1) ii. Low back pain (2) iii. Pelvic pain (3) iv. Hip pain (4) v. Dequerveins tenosynovitis(5) vi. Carpal tunnel syndrome(6) vii. Others (7)

Part 3- Health information after cesarean section

21. Did you ever face musculoskeletal problems after cesarean delivery?	i. Yes(1) ii. No (2)
If yes, Please mention it……	i. Lower back pain(1) ii. Neck pain (2) iii. Perineal pain (3) iv. Urinary incontinence (4) v. Sexual Dysfunction (5) vi. Weak abdominals(6) vii. Others (7)
22. Did you have lower back pain?	i. Yes (1) ii. No (2)

If yes then mention the time period	i. less than 1 year (1) ii. more than 1 year (2)
23. Did you feel neck pain?	i. Yes (1) ii. No (2)
If yes mention the time period	i. less than 1 year (1) ii. more than 1 year (2)
24. Did you feel perineal pain?	i. Yes (1) ii. No (2)
If yes mention the time period	i. less than 1 year (1) ii. more than 1 year (2)
25. Did you suffered by urinary incontinence?	i. Yes (1) ii. No (2)
If yes mention the time period	i. less than 1 year (1) ii. more than 1 year (2)
26. Did you suffered by sexual problem?	i. Yes ii. No
If yes, mention the time period	i. less than 1 year (1) ii. more than 1 year (2)
27. Did you suffered by weak abdominals?	i. Yes (1) ii. No (2)
If yes mention the time period	i. less than 1 year (1) ii. more than 1 year (2)
28. Among them any complications still persists?	i. Yes (1) ii. No (2)
If yes, mention it…	

Thank you for your kind cooperation.

তথ্য সংগ্রহের শিট

আমি শ্রাবন্তী সাহা, পক্ষাঘাত গ্রস্থদের পূনর্বাসন কেন্দ্র (সিআরপি), সাভার, ঢাকা তে ক্লিনিক্যাল ফিজিওথেরাপিস্ট হিসেবে। বর্তমানে আমি ঢাকা বিশ্ববিদ্যালয়ের অধীনে এম. এস. সি ইন রিহ্যাবিলিটেশন সাইন্সে অধ্যয়ন করছি। এই কোর্সটি সম্পুর্ণ করতে আমাকে একটি গবেষণা সম্পন্ন করতে হবে। এই জন্যে আমি আপনাকে **সিজার অপারেশনের কারণে মহিলাদের মধ্যে পেশী ও কংকালতন্ত্রে যেসকল সাধারণ সমস্যা দেখা দেয় – সিআরপিতে চিকিৎসা নিতে আসা রোগীদের নিয়ে একটি গবেষণা** "- এই গবেষণায় অংশগ্রহণ করতে আমন্ত্রণ জানাচ্ছি। এই গবেষণার মূল উদ্দেশ্য হচ্ছে সিজার অপারেশনের কারণে ভুক্তভোগী মহিলাদের মধ্যে যে ধরণের মাস্কুলো স্কেলেটাল সমস্যা হচ্ছে তা নিরুপণ করা।

এই গবেষণায় আপনার অংশগ্রহণ সম্পূর্ণ ঐচ্ছিক। আপনি যদি এই গবেষণায় অংশ নিতে না চান তাহলে আপনি যে কোন মূহুর্তে আপনার নাম প্রত্যাহার করতে পারবেন, যদি না আপনি স্বেচ্ছায় হ্যাঁ বলে থাকেন। এজন্য আপনি অংশগ্রহণ করুন বা না করুন তাহলেও কোন কিছুর পরিবর্তন হবে না। এই প্রশ্নাবলী অনুযায়ী আপনার দেয়া মতামত গুলো দ্বারা সম্পন্ন করতে সর্বোচ্চ ২০ মিনিট লাগতে পারে এবং আপনার দেয়া মতামত গুলো সম্পূর্ণ গোপণ রাখা হবে। এই অংশগ্রহণের জন্য আপনাকে কোন পারিশ্রমিক প্রদান করা হবে না। এই গবেষণায় অংশগ্রহণের জন্য আপনার হয়তো কোন সরাসরি লাভবান হবেন না। এই গবেষণায় অংশগ্রহণ করলে আপনার কোন ক্ষতি হবে না। আপনার তথ্য গুলো সর্বোচ্চ গোপণীয়তাঁর সাথে সংরক্ষণ করা হবে। আপনার তথ্যগুলো আপনার অনুমতি ব্যতিত কোন প্রকাশনায় প্রকাশ করা হবে না। আপনার যদি এরপরেও কোন জিজ্ঞাসা থাকে তাহলে আপনি বিনা দ্বিধায় যে কোন সময় আমার সাথে যোগাযোগ করতে পারেন।

শ্রাবন্তী সাহা

ক্লিনিক্যাল ফিজিওথেরাপিস্ট

ফিজিওথেরাপি বিভাগ

সিআরপি- চাপাইন সাভার ঢাকা- ১৩৪৩

মোবাইল নংঃ ০১৭১৪০৩৩৬১৫

সম্মতি পত্র

আমি সম্পুর্ণ বর্ননা পড়েছি বা আমাকে পড়ে শুনানো হয়েছে এবং আমি গবেষণার বিষয়টি সম্পর্কে অবগত হয়েছি। আমি তথ্য সংগ্রাহকের সাথে যে কোন সময় গবেষণার বিষয়টি নিয়ে আলোচনা করতে পারবো, আমি সন্তোষজঙ্ক মতামত দেয়ার চেষ্টা করবো। আমি এই গবেষণার প্রতিবন্ধকতা এবং উপকারিতা বিষয়ে ওয়াকিফহাল আছি। আমি বুঝতে পেরেছি, আমি যে কোন সময় উক্ত গবেষণা থেকে আমার অংশগ্রহণ প্রত্যাহার করতে পারবো এবং আমার বর্তমান ও ভবিষ্যত চিকিৎসা সেবার উপর কোন রূপ প্রভাব পরবে না। আমার দেয়া তথ্য গুলো গোপণীয়তাঁর সাথে সংরক্ষণ করা হবে এই বিষয়েও আমি অবগত হয়েছি।

আমি এই গবেষণায় অংশগ্রহণ করতে সম্মতি জ্ঞাপন করছি।

অংশগ্রহণকারীর স্বাক্ষর_____ তারিখঃ_____

তথ্য সংগ্রহণকারীর স্বাক্ষর_____ তারিখঃ_____

প্রশ্নাবলী

তথ্যসংগ্রহেরশিট

বিষয়ঃ "সিজার অপারেশনের কারণে মহিলাদের মধ্যে পেশী ও কংকালতন্ত্রে যেসকল সাধারণ সমস্যা দেখা দেয় সিআরপিতে চিকিৎসা নিতে আসা রোগীদের নিয়ে একটি গবেষণা।"

প্রথম অংশঃ ব্যক্তিগত এবং সামাজিক তথ্যাবলী

১. অংশগ্রহণকারীর বয়স	..... বছর
২. বাসস্থান	iii. গ্রাম (১) iv. শহর (২)
৩. শিক্ষাগত যোগ্যতা	vii. অশিক্ষিত (১) viii. প্রাথমিক (২) ix. মাধ্যমিক (৩) x. উচ্চমাধ্যমিক (৪) xi. স্নাতক (৫) xii. স্নাতকোত্তর (৬)
৪. পেশা	x. গৃহিণী (১) xi. শিক্ষিকা (২) xii. চাকুরী (৩) xiii. কৃষাণী (৪) xiv. দিনমজুর (৫) xv. ব্যবসায়ী (৬) xvi. বেকার (৭) xvii. অবসরপ্রাপ্ত (৮) xviii. অন্যান্য (৯)
৫. অর্থনৈতিক অবস্থা	iv. উচ্চবিত্ত (১) v. মধ্যবিত্ত (২) vi. নিম্নবিত্ত (৩)

দ্বিতীয় অংশ- বাচ্চা জন্মদানের পূর্বে স্বাস্থ্যগত অবস্থা

৬. একের অধিকবার গর্ভধারণ করেছেন	iii. হ্যাঁ (১) iv. না (২)
৭.কততম গর্ভধারণ (সংখ্যা)	
৮. আপনার কি অনাকাঙ্খিত গর্ভপাত হয়েছে ?	iii. হ্যাঁ (১) iv. না (২)
যদিহ্যাঁ হয়, তাহলে কতবার _____	
৯. আপনার কি এর আগে সিজার অপারেশন হয়েছে	
১০. আপনার কত বছর আগে শেষ সিজার অপারেশন হয়েছে	
১১. কি ধরণের চেতনানাশক ব্যবহার করা হয়েছিল	iii. সাধারণচেতনানাশক (১) iv. স্নায়ু চেতনানাশক (২)
১২. আপনি কি গর্ভধারণের পূর্বে অসুস্থ হয়েছিলেন ?	iii. হ্যাঁ (১) iv. না (২)
যদিহ্যাঁহয়, তাহলেউল্লেখকরুন	vi. উচ্চরক্তচাপ (১) vii. ডায়াবেটিকস (২) viii. হৃদরোগ (৩) ix. থাইরয়েডগ্রন্থিররোগ (৪) x. অন্যান্য (৫)
১৩. প্রসূতীঅবস্থায়চিকিৎসানিয়েছেন ?	i. হ্যাঁ (১) ii. না (২)
যদিহ্যাঁহয়, তাহলেকতদিনপরপরচিকিৎসকেরশরণাপন্নহয়েছেন	
১৪. গর্ভধারণের পূর্বে আপনার গর্ভধারণ জনিত অঙ্গের কোন সমস্যা হয়েছিল ?	vii. পিরিয়ডের সময় ব্যথা (১) viii. গর্ভাশয়ে পূজ (২) ix. গর্ভাশয়ে টিউমার (৩) x. গর্ভাশয়ের বাহিরে অতিরিক্ত মাংসপেশী হওয়া (৪) xi. পলিসিস্টওভারিয়ানসিন্ড্রোম (৫) xii. অন্যান্য (৬)
১৫. বাচ্চাজন্মদেয়ারসময়কিকোনসমস্যাহয়েছিল ?	iii. হ্যাঁ (১) iv. না (২)
যদি উত্তর হ্যাঁ হয়ে থাকে, তাহলে উল্লেখ করুন	vi. প্রিটার্মলেবারবাপ্রিম্যাচিউরলেবারডেলিভারি (১) vii. প্রোলোংলেবার (২) viii. ব্রিচপ্রজেন্টেশন (৩) ix. অ্যামনিউটিকফ্লুইডলিকেজ (৪) x. অন্যান্য (৫)

১৬. আপনি কি এন্টিনেটাল পিরিয়ডে ফিজিওথেরাপিস্টের কাছে শরণাপন্ন হয়েছিলেন ?	iii. হ্যাঁ (১) iv. না (২)
১৭. গর্ভবতী অবস্থায় আপনি কি ফিজিওথেরাপিস্টের কাছ থেকে কোন ব্যায়াম পরামর্শ হিসেবে পেয়েছিলেন ?	iii. হ্যাঁ (১) iv. না (২)
১৮. আপনি কি বাসায় কোন ধরণের ব্যায়াম করতেন ?	iii. হ্যাঁ (১) iv. না (২)
১৯. আপনি কি গর্ভাবতী অবস্থায় কমপক্ষে ৩০ মিনিট হাঁটতেন ?	iii. হ্যাঁ (১) iv. না (২)
২০. গর্ভাবতী অবস্থায় আপনার কি মাস্কুলোস্কেলেটাল সমস্যা হয়েছিল ?	iii. হ্যাঁ (১) iv. না (২)
যদি হ্যাঁ হয়, তাহলে উল্লেখ করুন	viii. ডায়াস্টেসিসঅবরেক্টাসঅ্যাবডুমিনিস (১) ix. কোমড়ব্যথা (২) x. পেলভিকপেইন (৩) xi. হিপপেইন (৪) xii. ডিকিয়োভেনটনেসোসিনোভেইটিস (৫) xiii. কারপাল টানেল সিন্ড্রোম (৬) xiv. অন্যান্য (৭)

তৃতীয় অংশ- সিজার অপারেশনের পরবর্তীতে স্বাস্থ্যগত অবস্থা

২১. সিজার অপারেশনের পরে আপনি কি মাস্কুলোস্কেলেটাল সমস্যায় ভুগছেন ?	iii. হ্যাঁ (১) iv. না (২)
যদি হ্যাঁ হয়, তবে উল্লেখ করুন.....	viii. কোমড়ব্যথা (১) ix. ঘাড় ব্যথা (২) x. পেরিনিয়েল পেইন (৩) xi. ইউরেনারি ইনকন্টিনেন্স (৪) xii. সেক্সুয়্যাল ডিসফাংশন (৫) xiii. ইউক অ্যাবডুমিনালস (৬) xiv. অন্যান্য (৭)
২২. আপনি কি কোমড় ব্যথায় ভুগছেন ?	iii. হ্যাঁ (১) iv. না (২)
যদি হ্যাঁ হয়, তবে কতদিন ধরে ভুগছেন উল্লেখ করুন	iii. এক বছরের কম (১) iv. এক বছরের বেশি (২)
২৩. আপনি কি ঘাড় ব্যথায় ভুগছেন ?	iii. হ্যাঁ (১) iv. না (২)

যদি হ্যাঁ হয়, তবে কতদিন ধরে ভুগছেন উল্লেখ করুন	iii. এক বছরের কম (১) iv. এক বছরের বেশি (২)
২৪. আপনি কি পেরিনিয়াল পেইনে ভুগছেন ?	iii. হ্যাঁ (১) iv. না (২)
যদি হ্যাঁ হয়, তবে কতদিন ধরে ভুগছেন উল্লেখ করুন	iii. এক বছরের কম (১) iv. এক বছরের বেশি (২)
২৫. আপনি কি ইউরেনারি ইনকন্টিনেন্সে ভুগছেন ?	iii. হ্যাঁ (১) iv. না (২)
যদি হ্যাঁ হয়, তবে কতদিন ধরে ভুগছেন উল্লেখ করুন	iii. এক বছরের কম (১) iv. এক বছরের বেশি (২)
২৫. আপনি কি উইক অ্যাবডুমিনালস এ ভুগছেন ?	iii. হ্যাঁ (১) iv. না (২)
যদি হ্যাঁ হয়, তবে কতদিন ধরে ভুগছেন উল্লেখ করুন	iii. এক বছরের কম (১) iv. এক বছরের বেশি (২)
২৬. এই সমস্যাগুলোতে কি এখনও ভুগছেন	iii. হ্যাঁ (১) iv. না (২)
যদি হ্যাঁ হয়, তবে কতদিন ধরে ভুগছেন উল্লেখ করুন…	

আপনার সহযোগীতার জন্য ধন্যবাদ ।

BANGLADESH HEALTH PROFESSIONS INSTITUTE

বাংলাদেশ হেল্‌থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)
Bangladesh Health Professions Institute (BHPI)

(The Academic Institute of CRP)

Ref. CRP-BHPI/IRB/02/18/191

Date: 03/02/2018

To
Srabonti Saha
Part II, M.Sc. in Rehabilitation Science
Session: 2016-17, Student ID: 181160054
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Subject: Approval of the thesis proposal- "**Common musculoskeletal complain arising among women after cesarean section delivery- A patient based study at CRP**" by ethics committee.

Dear Srabonti Saha

Congratulations.
The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application on 06/05/2017 to conduct the above mentioned dissertation, with yourself, as the Principal investigator. The Following documents have been reviewed and approved:

Sr. No.	Name of the Documents
1	Dissertation Proposal
2	Questionnaire (English version)
3	Information sheet & Consent form.

Since the study involves answering a questionnaire that take about 20-30 minutes and have no likelihood of any harm to the participants, the members of the Ethics committee have approved the study to be conducted in the presented form at the meeting held at 9.00 AM on 6th May, 2017 at BHPI.

The institutional Ethics committee expects to be informed about the progress of the study, any changes occurring in the course of the study, any revision in the protocol and patient information or informed consent and ask to be provided a copy of the final report. This Ethics committee is working accordance to Nuremberg Code 1947, World Medical Association Declaration of Helsinki, 1964 - 2013 and other applicable regulation.

Best regards,

Millat Hossain

Muhammad Millat Hossain
Assistant Professor, Dept. of Rehabilitation Science
Member Secretary, Institutional Review Board (IRB)
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

সিআরপি-চাপাইন, সাভার, ঢাকা-১৩৪৩, বাংলাদেশ, ফোন ঃ ৭৭৪৫৪৬৪-৫, ৭৭৪১৪০৪ ফ্যাক্স ঃ ৭৭৪৫০৬৯
CRP-Chapain, Savar, Dhaka-1343, Tel : 7745464-5, 7741404, Fax : 7745069, E-mail : contact@crp-bangladesh.org, www.crp-bangladesh.org

Date: 10.02.2018

To
The Head of Physiotherapy Department,
CRP, Chapain, Savar, Dhaka- 1343

Subject: Application for permission of data collection for master's thesis

Dear Sir,

With due respect, I would like to draw your kind attention that I am a student of Masters in Rehabilitation Science program at Bangladesh Health Professions Institute(BHPI)- an academic institute of Centre of Rehabilitation Science(CRP) under Faculty of Medicine of University of Dhaka(DU). This is 2 year full time course under the project of "Regional Inter-professional Master's program in Rehabilitation Science" funded by SAARC Development Fund (SDF). I have to conduct a thesis entitled, **"Common musculoskeletal complain arising among women after cesarean section delivery-A patient based study at CRP"** honorable supervisor, Dr. Kamal Ahmed, Associate Professor, Institute of Health Technology, Mohakhali.. The purpose of the study is to identify common musculoskeletal complain arising among women after caesarean section delivery. This study will help to enhance the evidence based practice in Physiotherapy profession and the rehabilitation field as well. The questionnaire will be used for data collection and related information will be collected from patients file and it will take about 10 to 15 min and the study have no likelihood of any harm to the participant. Data collector will receive informed consents from all participants. Any data collected will be kept confidential. Ethical approval is received from the Institutional Review Board of Bangladesh Health Professions Institute (BHPI).

Therefore I look forward to having your permission for starting data collection at musculoskeletal unit of Physiotherapy department. I also assure you that I will maintain all the requirements for study.

Sincerely Yours,

Srabonti Saha

Srabonti Saha
Part-II, M.Sc. in Rehabilitation Science (MRS)
Session: 2016-2017, Student ID 181160054
BHPI, CRP-Savar, Dhaka-1343, Bangladesh

Approved
10/02/18
Mohammad Anwar Hossain
Associate Professor & Head
Physiotherapy Dept., CRP
CRP-Chapain, Savar, Dhaka-1343