Pattern of Household Activities and Its Effects on Low Back Pain among Housewives Attended for Physiotherapy Treatment at CRP, Savar.

ASMA ARJU

Part – II, M.Sc. in Rehabilitation Science

BHPI, CRP, Savar, Dhaka-1343

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DU Registration No.: 3472

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Bangladesh Health Professions
Institute (BHPI)

Faculty of Medicine

University of Dhaka

SUPERVISOR'S STATEMENT

As the supervisor of **Asma Arju's** Thesis work, I certify that I consider her thesis **"PATTERN OF HOUSEHOLD ACTIVITIES AND IT'S EFFECTS ON LOW BACK PAIN AMONG HOUSEWIVES ATTENDED FOR PHYSIOTHERAPY TREATMENT AT CRP, SAVAR."** to be suitable for examination.

……

Prof. Dr. Alamgir Kabir

Professor of Statistics

Jahangirnagar University, Savar Date: ……2018

(Supervisor)

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 **"PATTERN OF HOUSEHOLD ACTIVITIES AND IT'S EFFECTS ON LOW BACK PAIN AMONG HOUSEWIVES ATTENDED FOR PHYSIOTHERAPY TREATMENT AT CRP, SAVAR"** submitted by Ms **Asma Arju**, for the partial fulfillment of the requirements for the degree of M. Sc. in Rehabilitation Science.

…….

Prof. Dr. Alamgir Kabir

Professor, Department of Statistics

Jahangirnagar University, Savar, Dhaka-1343, Bangladesh

…….

Md. Habibur Rahman

Associate Professor, Department of Physiotherapy

BHPI, CRP, Savar, Dhaka-1343, Bangladesh

…….

Dr Kamal Ahmed

Associate Professor, Institute of Health Technology

Mohakhali, Dhaka-1243, Bangladesh

…….

Muhammad MillatHossain

Assistant Professor and Co-ordinator

Department of Rehabilitation Science

BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Date of approval: ……, 2018

DECLARATION

• 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.

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• 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.

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Name: Asma Arju

Date: ……., 2018

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Dedication

To My Husband

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LIST OF ABBREVIATIONS AND ACRONYMS

ADL	Activities of Daily Living
BMJ	British Medical Journal
CLBP	Chronic Low Back Pain
COPD	Chronic Obstructive Pulmonary Disease
DALY	Disability-Adjusted Life Years
GBD	Global Burden of Disease
IPAQ	International Physical Activity Questionnaires
LBP	Low Back Pain
NADW	National Arthritis Data Workgroup
NGO	Non-Government Organization
NHRC	National Health Research Council
QOL	Quality of Life
RMD	Rheumatic Musculoskeletal Disease
UN	United Nation
USA	United State of America
VAS	Visual Analog Scale
WHO	World Health Organization

ABSTRACT

Introduction: Housework is traditionally an unpaid labor performed by women. It involves routine and compulsory household maintenance tasks can create musculoskeletal disorder like LBP. The prevalence rate of LBP was estimated to be within 45% to 55% with variation in the type of pain.

Objective: The major objective of the study was to identify the effects of household activities among LBP housewife patients.

Methods: A descriptive cross-sectional study was carried out among 255 respondent of age range 20-65 years.Data was collected through convenience sampling method from musculoskeletal department of CRP, Savar using semi-structured questionnairewhich was the modified question of International Physical Activity Questionnaires (IPAQ). The questionnaire consisted of questions according to Bangladesh perspectives regarding household activities that housewife do at home assessed the severity of pain using Visual Analog Scale (VAS) and data was collected using face to face interview.

Result: Study found thathousehold activities like cooking & chopping ($p<.0001$), washing dish and cloth ($p<.0001$), sweeping floor/cleaning toilet ($p<.0001$) were significantly associated and positively correlated with LBP. Binary Logistic Regression found that the probability of having LBP compare with the time duration of cooking (OR 11.184 95% CI=2.622-47.731), chopping (OR 2.667 95% CI=1.444-4.927), washing dish (OR 3.33 95% CI=1.503-7.387), washing cloth (OR 5.709 95% CI=2.938-11.097), sweeping floor (OR 4.712 95% CI=2.331-9.525)was significantly higher among housewife.

Conclusion: This study reveals that all of married women have to do their household activities regularly after marriage for a long period in prolong sitting, standing or bending posture from early morning to night of time at home. Therefore elder housewife develop LBP more as the duration of married life and duration of doing household activities are high among them. According to the finding of the study it is needed to change the agronomical setting at home to prevent poor posture and provide proper guideline about the posture and way during work which may help to prevent social and economical burden for LBP.

CHAPTER I INTRODUCTION

1.1 Background

Low back pain is a common musculoskeletal symptom that may be either acute or chronic. It may be caused by a condition of diseases and disorders that affect the lumbar spine. It can be defined as pain localized below the line of the twelfth rib and above the inferior gluteal folds, with or without leg pain and it can be classified as "specific" or "non-specific" (Anderson, 1986). At there, Specific Low back pain included the suspected pathological causes. However, about 90% cases of back pain are nonspecific.

Back pain is usually defined as acute, sub-acute and chronic. If pain stays for less than six weeks; then it is called acute pain. Pain in between six weeks to three months is called sub-acute pain whereas pain lasts more than three months is called chronic pain (Frymoyer, 1988). Low back pain is a common problem that causes economic, social and psychological stresses for both the community and the individual (Wilde et al., 2007). Most episodes of low back pain resolve within several weeks, but maximum LBP have a recurrent episode. In the working population, about 20–44% of patients are affecting with further acute episodes within one year and lifetime recurrences of low back pain up to 84% (walker, 2000).

Different literature shows that, there is a significant interaction between the low back pain and environmental factors among housewife (Fazli et al., 2016). 'Make up the physical, social and attitudinal environment in which people live and conduct their lives' called Environmental factors (WHO, 2001). Every one of us works in a different and individual working environment. It is the surrounding conditions in which we complete our work. Human social environments encompass the immediate physical surroundings, social relationships and cultural milieus within which defined groups of people function and interact (Casper, 2001). Therefore LBP is associated with occupational workload such as carrying heavy items, bending or kneeling and body height (Shiri, Lallukka, Karppinen & Viikari-Juntura, 2014).

In many countries, the urban cleaning activity is performed manually. According to British Labour Statistics (BLS) monthly review (2009) showed that women spent more time on household activities which is 15.5 hours per week on average. UN studies of 31 countries show women working 10 to 30 per cent more hours than men. Where two thirds of women's work is unpaid, unvalued and has traditionally been invisible (UN, 1995). These activities expose the housewife to develop various occupational risks. Especially those related to physical work overload as in the case of musculoskeletal impairment. Physical work caused by frequent trunk flexion and rotation, lifting and/or carrying load, whole body vibration play a great role to develop LBP (Pataro and Fernandes, 2014).

1.1.1 Low Back Pain in Developed Country

Low back pain (LBP) is the most frequent work related musculoskeletal complain. It is one of the leading causes of health related problems in developed world (Balagué, Mannion, Pellisé, & Cedraschi, 2012). LBP is a major public health problem in the USA. More than 34 million (17%) adults report LBP (Biglarian et al., 2012). On any given day, an estimated 6.5 million people in the United States are bedridden because of back pain and approximately 1.5 million new cases of back pain seek medical attention in each month (Koley, Singh & Sandhu, 2008).

The yearly prevalence of LBP varies from 5% to as 65% and lifetime prevalence from 35% to 80% (Jenkins, 2002). It develops chronic and disabling symptoms which is responsible for large social costs and loss of quality of life. It also damage time and taken off from work (Punnett et al., 2005). Low back pain is not a life threatening condition. In Western industrialized society, it is a major non communicable public health problem and exhibits epidemic proportions. Recent surveys also indicate that it is limited the activity and restricted social participation which has substantial impact on the life style of those affected (Maniadakis & Gray, 2000).

Low back pain can affect all age groups and both genders. Most people suffer unbearable back pain at some stages in their lives. Many people have their 1st episodes of low back pain in their teen age. The episode of pain frequently reoccurs throughout adult life which leading to a chronic condition (Jenkins, 2002). Pain in the soft tissues of the back is extremely common among adults. In the United States, the National Arthritis Data Workgroup (NADW) reviewed national survey data showing that each year some 15% of adults report frequent back pain or pain lasting more than 2 weeks. In Canada, Finland and

the United States, more people are disabled from working as a result of musculoskeletal disorders, especially back pain than from any other group of diseases (Punnett et al., 2005).

1.1.2 Low Back Pain in Developing Country

In India, occurrence of low back pain is also alarming. Nearly 60% of women in India have significant back pain at some time in their lives (Koley, Singh & Sandhu, 2008).

Epidemiological studies provide important information regarding various risk factors like age, sex, occupation, life style, socio-economic status & smoking habit. Few studies report that female patients experience more pain. The reason may be their more physical activities in workplaces and greater muscular effort (Koley, Singh & Sandhu, 2008). A common finding was found that the prevalence of pain was higher in women. Prevalence of back pain of was 24.3% in women (Jiménez-Sánchez et al., 2012).

Low back pain receives little attention and research in low-income countries compared to industrialized countries. Many studies have been done in urban areas which show a high prevalence of LBP in housewives (Gupta & Tiwari, 2014). As the working, living and social architecture in the rural areas significantly differ from urban area (Hoy, Toole, Morgan & Morgan, 2003).

In Nepal the prevalence of low back pain among females were 74.3%. Low Back pain is a very common complaint among the adult female population in the community. The overall annual prevalence was 71%. The highest prevalence of back pain was found in the age group of 31-40 years that is adult group. Age, married status and occupation were significantly related to low back pain. They found the ratio of low back pain among housewife was 72.8%. The total duration of back pain in one year was less than 15 days in 73%. The number of workdays lost was upto 5 in 81% of people with back pain (Shrestha et al., 2012).

1.1.3 Low Back Pain in Bangladesh

Female or housewives are more prone to develop LBP but there is very few evidence. The prevalence of LBP is 58.6% among housewives in Bangladesh. More than half housewives were suffering from LBP (Akter, 2014). One study (2008) titled 'Women's contribution to national economy' revealed that in Bangladesh 81 percent women are

directly involved in household activities .The study also revealed that a housewife spends 16 to 20 hours a day for household works on an average by engaging herself in 45 types of work. The finding of the research was they have no holiday and even no leisure time. Rather they take care of both the children and elderly people of the family whenever they get time to take little rest. The village women have to do more works than the women living in urban areas. As the rural women are involved in agricultural activities, cattle and poultry farming, handicrafts, cooking, water fetching, cleaning the house, take care of family members and many more (The daily star, 2008). Another one study (2015) done among slum women at Dhaka city, where they found 65% housewives had LBP. Regular household work is responsible for developing low back pain among women living in slum area. Posture like bending activities aggravating the pain in the lower back during work (Barua & Sultana, 2015).

1.2 Problem Statement

Rurality is commonly assumed to represent a barrier to health care access and therefore is expected to result in lower health resource utilization. Compared to urban ones, rural residents were more prone to develop low back pain (Joines, Taylor, Garrett, Ricketts & Carey, 1994). Women work every day for about 8–9 hrs in household activities. The daily work schedule of rural women is very demanding and hard. In addition to agriculture, family members, relatives and neighbours play important roles in one's life. Relationships with those people form a basis for their mental health (Gupta & Nandini, 2015).

The result is that rural women are overburdened as well as continuously struggling to meet their family and social demands. The household, agriculture and animal care jobs are not only strenuous but also repetitive. The rural women are exposed to continuous non-neutral postures. The repetitive or prolonged exertion causes pain in the muscles, resulting in muscular weakness or spasms. Long hours of work, continuous attention, precision, job diversity, extreme postures, scanty nutrition and poor health apparently indicate that the women, whether tribal or non-tribal are under serious physical stress (Suthar, 2011). Apart from other medical problems, pregnancy and childbearing aggravate the complications in females (Koley, Singh & Sandhu, 2008). Rural women rarely report their musculoskeletal problems at the right time. They naturally learned to live with pain from which they commonly develop physical disability. In later life this musculoskeletal disorders can result in lifelong pain and permanent disability (Gupta & Nandini, 2015).

It ranks fifth among reasons of consulting a physician (Dundar, Ozmen, Ilgun, Cakmakci & Alkis, 2010). Eighty percent of the active population suffers low back pain at a certain period of their lives (Jenkins, 2002). Risk factors affecting low back pain vary based on the structures of societies, income levels and conditions of living.

CLBP is a serious medical and social problem which is one of the most common causes of disability (Bener, Dafeeah & Alnaqbi, 2014). It is the leading cause of activity limitation and work absence and it causes enormous economic burden on individuals, families, communities, industry and governments. In the past, it was documented that LBP is a common complaint in general practice in primary care settings. The exact cause of pain cannot be identified in most instances. Recent studies continue to confirm that LBP is a common disorder in western and developing nations. The intercultural differences between nationalities in pain perception or pain reporting may be an explanation for the variation in prevalence rates among countries. It was largely thought of as a problem confined to western countries but at the moment due to the extensive amount of research on this problem, it has been demonstrated that LBP is also a major problem in low and middle income countries. One study in Qatar reported that LBP can have a substantial negative impact on the QOL (Bener, Dafeeah & Alnaqbi, 2014). They found Risk factors of LBP are multi-factorial and include physical factors, social demographic characteristics, habits and psychological factors.

The housewives form the core that nurtures the society. They perform a multitude of tasks that cause ergonomic stress as well as exhaustion of muscle groups that result in Musculoskeletal pain. Deviations from the optimum body composition are likely to precipitate and exacerbate Musculoskeletal pain from various causes (Bihari et al., 2013). Available study according to our country perspectives is very less to find out how much or what factors are affecting Female or housewives LBP patients.

Thus the purpose of the present study is to evaluate the effects of household activities on low back pain in housewives to determine the effect of social environment on LBP. However, this study would enhance the evidence based practice in Physiotherapy profession and the rehabilitation field as well. Moreover, the preventive aspects of treatment session would ensure throughout the proper rehabilitation for patients with Low Back Pain which would be helpful to lead a good quality of life (QOL).

1.3 Research Questions

What are the Effects of household activities on LBP among housewife patients who are attending for physiotherapy treatment at CRP, Savar?

1.4 Operational Definition

Low Back Pain

LBP is a symptom which is caused by several problem of lumbar spine. It can be disease or disorder of lumbar spine. It can be specific or non-specific problem which leads acute, sub-acute or chronic LBP.

Housewife

Housewife means a married woman, whose main occupation is caring for her family, managing household affairs and doing housework while her husband earns the family income.

Household activities

Household has been defined as 'the bundle of relationships in a society through which reproductive activities are organised' (Kaaber, 1991). The term 'reproductive' includes not just biological but also social reproduction that is the maintenance of the well-being of those individuals located within the boundaries of the household.

Household work can be grouped into four main activity categories: Household activities which includes a wide range of activities done to maintain one's household such as food and drink preparation, laundry and lawn care; Caring for and helping household members; Purchasing groceries and services and Travel related to household work (Krantz-Kent, 2009).

1.5 Outline of the Study

The rest of the thesis is outlined as follows. **Chapter 2** reviews the current and past literature, mostly on household activities; prevalence, causes and risk factors of LBP. **Chapter 3** provides an overview of different sets of data used in this study, their sampling procedure and the variables used. This chapter also provides the conceptual framework along with a brief explanation of the statistical technique. **Chapter 4** provides the empirical findings on household activities among housewife LBP patients. The analysis covers the suitable techniques for household activities. **Chapter 5** explores an elaborate discussion about the effects of household activities among the housewives along with the comparison of other studies. Finally **Chapter 6** provides a brief summary, limitations of the study and recommendations. In addition this chapter also includes suggestions for future research.

CHAPTER II LITERATURE REVIEW

2.1 Introduction

A literature review is an evaluative report of information found in the literature related to a selected area of study. The review should describe, summarise, evaluate and clarify this literature. It should give a theoretical base for the research and help the author to determine the nature of his/her research. Therefore we reviewed the literature in some component for better understanding the research objectives which are in divided into several sections. **Section 2.2** reviews the theories related to household activities. **Section 2.3** and **2.4** reviews the literature for LBP and prevalence of LBP. **Section 2.5, 2.6** and **2.7** reviews the literature for function, causes and risk factors of LBP respectively. **Section 2.8** and **2.9** reviews the literature for diagnosis and treatment of LBP.

2.2 Household Activities

Housework is traditionally an unpaid labour performed by women. It involves routine and compulsory household maintenance tasks (cleaning, cooking, washing, lifting, purchasing, etc.) and family care duties (child rearing and other care-giving responsibilities) that require substantial physical, emotional and intellectual labour (Shelton and John, 1996). Studies have found that housework can be more energy intensive than some types of paid work (Sujatha et al., 2003). It is a source of hazards comparable to other occupational settings. Research has also found associations between housework and upper-extremity and lower back disorders (Habib, El Zein, & Hojeij, 2012).

Women in many countries do carry heavy loads like as in farm work, caring for children, lifting heavy objects etc. Women's working conditions also include other less visible stressors like highly repetitive work and prolonged sitting or standing work. Sometimes women have to do long and repeated movements many thousands of times in a day. These movements can individually make significant demands on the human body. A chair the wrong height or a counter the wrong width may cause constant overuse of the same tendons

or joints yet the observer may see no problem. This explains why sewing machine operation is associated with a very high probability of disability though it classed as light work (Vezina, Tierney & Messing, 1992). When analysing the effects of repetitive work, it is therefore important to separate out moderately repetitive work from the highly repetitive work done by many women (Punnett & Wegman, 2004). Many women's require static effort during their activities where muscles are contracted for long periods. This type of effort creates musculoskeletal and circulatory problems due to interference with circulation (Tissot, Messing, & Stock, 2005). Cleaning activities like dusting high surfaces, bending over toilets often require prolong static posture for long periods of time which results in back and other musculoskeletal problems (Messing, 1997).

2.3 Low Back Pain

The term LBP refers to pain in the lumbosacral area of the spine encompassing the distance from the 1st lumbar vertebra to the 1st sacral vertebra. This is the area of the spine where the lordotic curve forms. The most frequent site of LBP is in the 4th and 5th lumbar segment (Kravitz and Andrews, 1984).

2.4 Prevalence of LBP

2.4.1 Developed Countries

Low back pain is the most prevalent musculoskeletal condition and the most common cause of disability by limiting activity and work absence throughout the world (Woolf & pfleger, 2003). The lifetime prevalence of non-specific low back pain is estimated at 60–70% in industrialized countries and most common reason for medical consultations in high-income countries (Duthey, 2013). A literature review reported that the prevalence of CLBP is 5.91% in Italy , 6.3-11.1% in UK and 75% people were absent on their work in Germany (Juniper, Le & Mladsi, 2009).

Portuguese researchers found that the prevalence of active CLBP is 10.4 % among there population. It is significantly associated with disability with a high consumption of healthcare resources. Female gender, older age, anxiety symptoms, overweight/obesity, the

presence of other rheumatic musculoskeletal disease (RMD) and the number of co morbidities are significantly and independently associated with the presence of active CLBP (Gouveia, 2016).

2.4.2 Developing Countries

The Global Burden of Disease (GBD) 2010 estimated that LBP is amongst the top ten DALYs (disability-adjusted life years) causing diseases and injuries which is higher than HIV, road injuries, tuberculosis, lung cancer, chronic obstructive pulmonary Disease and preterm birth complications. The prevalence of LBP is 28.5% found in an Asian country (Tomita et al., 2010). According to WHO (2015) LBP is an extremely common disabling health problem and major problem in low and middle-income countries for major portion of people staying away from work which create problem for individuals, families and societies (Williams et al., 2015).

In low- and middle-income countries, LBP is highest in the Russian Federation (56%) and lowest in China (22%) which is associated with female sex, lower wealth, lower education and multiple chronic morbidities (Williams et al., 2015). The prevalence of CLBP is increased from 4.2% to 9.6% among Brazilian population. They found that CLBP is higher among female. Low education level, married life, changes in the labor market, smoking, obesity has considered as a risk factors. Repetitive movements and awkward postures during work have positive linear association with CLBP (Meucci, Fassa, Paniz, Silva & Wegman, 2013). In Iran one study (Mirsalimi, 2016) found that Age, weight, body mass index, physical activity hours, number of pregnancy and parity and level of education were significantly associated with the severity of LBP ($P < 0.05$). Another study found that the prevalence of back pain was respectively 64.8%, 19.8%, 69.5%, 40.6% and 36.2% in Bangladesh, India, Nepal, Pakistan and Sri Lanka (Bishwajit, Tang & Sanni Yaya, 2017)

2.4.3 Bangladesh

In Bangladesh about 85 percent of women live in rural areas. One study showed that the prevalence of LBP is 58.6% among housewives and more than half housewives were suffering from LBP in Bangladesh (Akter 2014).

Most of the household activities were done by women. Study found that, the women's participation rate was higher in cleaning house, child care, cooking and preparation of meal and lowest in case of tree plantation, dairy farming and poultry rearing etc (Asaduzzaman, Kabir, & Radović-Marković, 2015). Women work more hours as unpaid labourers. Their activities are quasi-economic in natures such as food-processing and preparation of meals for the family members, care of the child, old and sick members of the household and tutoring of children (Hossain, Bose, & Ahmad, 2004). Maximum women were agreeing that their home environment is not supportive enough to maintain the proper postures which make them more prone to develop LBP. Another one study found that both psychosocial and physical factors were significantly associated with musculoskeletal symptoms like LBP. Related psychosocial factors included feelings of stress associated with number of children and self-rated health. The physical factors associated with musculoskeletal pain which were feeling fatigued at the end of a housework day due to working long hours and working in awkward postures or frequently engaging in repetitive movements (Habib, El Zein, & Hojeij, 2012).

Women are compel to working for prolong time with a poor posture like bending, low sitting, twisting and squatting due to the such type of settings of our social environment. Study (Park et al., 2018) found that the duration of sitting time positively associated with LBP. They found sitting time more than 7 hours/day are significantly associated with LBP (odds ratio 1.33, $p<.001$). Ergonomic factors which are component of social environment were also associated with pain in the back. It affects on body structure (Lumbar spine) and impaired body function like decrease lumbar lordosis, lumbar range of motion, decrease muscle power, muscle spasm which limited activity and restricted participation. Women describe most of their household tasks as monotonous, boring and repetitive (Borrell, Muntaner, Benach & Artazcoz, 2004).

2.5 Function of Lower Back

The function of the structures of the lumbar spine is to provide structural support, movement and protection of certain body tissues like the spinal cord and spinal nerves.

During standing, function of the lower back is to support the weight of the upper body. In bending, extending or rotating of the waist, the lower back is also involved in the movement.

Therefore the bony spine, muscles, tendons and ligaments are more injurious structures during weight bearing. Often can be detected when the body is standing erect or used in various movements.

Protecting the soft tissues of the nervous system and spinal cord as well as nearby organs of the pelvis and abdomen is a critical function the lumbar spine and its adjacent muscles (Schmidler, 2017).

2.6 Causes of LBP

The vast majority (80-90%) of low back pain is mechanical in nature. Low back pain is associated with spondylosis in most cases. It is the general degeneration of the spine associated with normal wear and tear that occurs in the joints, discs, and bones of the spine as people get older. There are following types of mechanical causes of low back pain:

- **Sprains and strains-** account for most acute back pain. Sprains are caused by overstretching or tearing ligaments, and strains are tears in tendon or muscle. Both can occur from twisting or lifting something improperly, lifting something too heavy, or overstretching. Such movements may also trigger spasms in back muscles, which can also be painful.

- **Intervertebral disc degeneration-** One of the most common mechanical causes of low back pain, and it occurs when the usually rubbery discs lose integrity as a normal process of aging. In a healthy back, intervertebral discs provide height and allow bending, flexion, and torsion of the lower back. As the discs deteriorate, they lose their cushioning ability.

- **Prolapsed Lumbar Intervertebral Disc (PLID) -** can occur when the intervertebral discs become compressed and bulge outward (herniation) or rupture, causing pressure on the nerve root results in pain, numbness or a tingling sensation that travels or radiates to other areas of the body that are served by that nerve.

- **Sciatica-** It is a form of radiculopathy caused by compression of the sciatic nerve. It is the large nerve that travels through the buttocks and extends down the back of the leg. This compression causes shock-like or burning low back pain combined with pain through the buttocks and down one leg, occasionally reaching the foot. In the most extreme cases, when the nerve is pinched between the disc and the adjacent bone, the symptoms may involve not

only pain but numbness and muscle weakness in the leg because of interrupted nerve signaling.

- **A Traumatic injury**- It can happen from playing sports, car accidents, or a fall can injure tendons, ligaments or muscle resulting in low back pain. Traumatic injury may also cause the spine to become overly compressed, which in turn can cause an intervertebral disc to rupture or herniate, exerting pressure on any of the nerves rooted to the spinal cord. When spinal nerves become compressed and irritated, back pain and sciatica may result.

2.7 Risk factors of LBP

In (2015) WHO reported on world ageing and health that the prevalence and impact of musculoskeletal conditions increase with aging. Musculoskeletal diseases are like an inherent burden which exists in developed and developing nations. This burden exceeds service capacity, Population growth, aging and sedentary lifestyles create a crisis for population health in developing countries. A strong relationship exists between painful musculoskeletal conditions and a reduced capacity to engage in physical activity which results decrease functional capacity, frailty, reduced well-being and loss of independence (Briggs et al., 2016).

Woolf (2003) found some factors which is related with low back pain that are age, physical fitness, smoking, excess body weight and strength of back and abdominal muscles. Psychological factors associated with LBP were anxiety, depression, Job dissatisfaction emotional instability and pain behaviour. Occupational factors such as heavy work, lifting, bending, twisting, pulling and pushing significantly play a role (Woolf & Pfleger , 2003). Another study by reviewing the current literature also found that LBP is significantly associated with body weight, lack of physical activity, poor posture, heredity, low level of education, low socioeconomic background, reduce protein intake, alcohol intake and pregnancy (Lione, 2014). According to global health risk report of WHO (2009), about 37% Recurrent LBP occur due to occupational risk factor that leads functional disability (Hoy, Brooks, Blyth & Buchbinder, 2010). Hussey (2016) found work related mental ill health was highest among highest socio economic group. Problems like a heavy work load and

workplace settings were associated with this. Another research also found that work related mechanical factors significantly contribute to the social grade in LBP among women. The impact of psychosocial factors was high among women (Hussey, Money, Gittins & Agius, 2016).

Another research found that LBP is high (>90%) and a common problem for community-based women and seven percent of women have a high level of disability (Urquhart et al., 2009). Household Work Related Musculoskeletal Disorders in lower back were high (36%) among housewives in Sri Lanka also and household like cooking related activities, washing cloth, ironing, sweeping indoor and outdoor, cleaning toilet/bathroom, shopping and carrying children was associated with LBP (Ranasinghe et al., 2016).

A study was found that Patient's experiences were most frequently linked to psychological, sensory, neuromusculoskeletal and movement related body function. The most frequently linked categories of activity and participation were mobility, domestic activities, family relationships, work, recreation and leisure. Environmental factors frequently linked were the use of analgesics, walking aids, family support, social security systems, health care systems and labour market employment services (Abbott, Hedlund & Tyni-lennÉ, 2011).

Recently, public health researcher and practitioners are doing research on social environment and trying to find out its influence on population health. They are trying to Linking Biological and Behavioural Mechanisms with Social and Physical Environments. Several researchers found that there is a relationship between social environment and LBP. Components of the social environment are built infrastructure; industrial and occupational structure; labour markets; social and economic processes; wealth; social, human, and health services; power relations; government; race relations; social inequality; cultural practices; the arts; religious institutions and practices; and beliefs about place and community (Casper, 2001).

2.8 Diagnosis of LBP

A thorough physical and neurologic assessment needed to reveal the cause LBP. Only 10% of those suffering from acute back pain will require any special diagnostic testing. These tests are not performed unless pain persists for more than four to six weeks (Slowik, 2012).

The results of the physical and neurologic examinations combined with test results like x-rays, MRIs, and/or any lab tests are carefully evaluated to confirm a diagnosis the underlying spinal condition which causing LBP (Richard & Fessler, 2017).

2.9 Intervention

The principles of treatment of LBP are to relieve pain in both acute and chronic case, restore normal movement in chronic cases, improve functional ability and prevent the recurrences of LBP (Ebnezar, 2003).

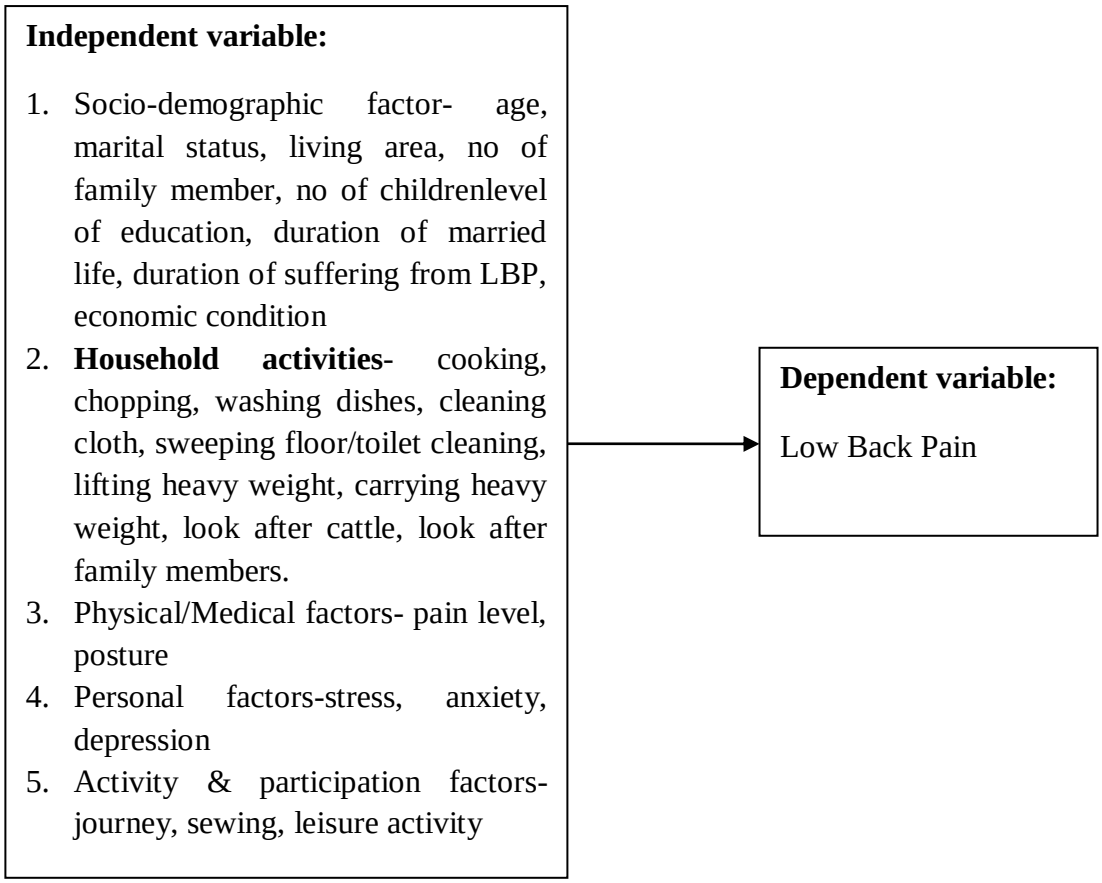
Management of LBP with physiotherapy (PT), chemotherapy and surgery has been well established (Sikiru and Hanifa, 2010). A systematic review and Meta analysis found that physiotherapy treatment with patient education is more effective for prevention of LBP (Steffens et al., 2016).

CHAPTER III METHODOLOGY

3.1 Introduction

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. It is necessary for the researcher to know not only the research methods/techniques but also the methodology (Kothari, 2004). Therefore, this chapter provides a discussion about the data sources and their methodologies as following. **Section 3.2** provides the conceptual framework. **Section 3.3** provides the study objectives. **Section 3.4, 3.5, 3.6** and **3.7** gives a brief explanation about the study design, study population, site and period and sample size respectively. Criteria of the sample and sampling technique are explained in **Section 3.8** and **3.9** respectively. Data collection tools, procedure and data management and analysis procedure are explained in **Section 3.10, 3.11** and **3.12** respectively.

3.2 Conceptual Framework



3.3 Study Objectives

3.3.1 General Objective- The general objective of this study is to identify the effects of household activities among Low back pain housewife patients who attended at CRP.

3.3.2Specific Objective of the Study- the specific objectives of this study are:

1. To identify the socio-demographic condition of the patient which are associated with LBP
2. To identify the association between the household activities and pain level at lower back during household work
3. To identify the probability of having LBP compare with different household activities
4. To enhance evidence practice on the area of prevention as a part treatment for LBP patient

3.4 Study Design

A research design is the arrangement of conditions for collection and analysis of data in a manner. The aims of study design are to combine relevance to the research purpose with economy in procedure. The study design is the conceptual structure within which research is conducted. It constitutes the blueprint for the collection, measurement and analysis of data (Kothari, 2004). In this study Quantitative methodological cross sectional research design were used. Quantitative methods emphasize objective measurements and the statistical, mathematical or numerical analysis of data collected through polls, questionnaires and surveys or by manipulating pre-existing statistical data using computational techniques. Quantitative research focuses on gathering numerical data and generalizing it across groups of people or to explain a particular phenomenon(Labaree, 2009).Cross-sectional study is also known as a prevalence study. It measures the cause and effect at the same time, but does not tell the relationship. Generally this is the commonest study design used in general practice and research. These studies are relatively easy to do, inexpensive and can be carried out in a short time frame (Parab&Bhalerao, 2010).Therefore as a limited time period, a Quantitative method, cross sectional study was conducted for those patients who were continuing

physiotherapy treatmentsin the musculoskeletal unit of physiotherapy department from January, 2018 to April, 2018. Here researcher tried to find out the effect of household activities on LBP for which cross sectional study design is the best to collect information in short period of time

3.5 Study Population

Study population was female patient with Mechanical LBP with or without radiculopathy who were attending in musculoskeltal unit at physiotherapy department for physiotherapy treatment. Researcher collected information through face to face interview by fill up the questionnaire when patient came at first time to the physiotherapy department or continuing treatment to different physiotherapist.

3.6 Study Area/Site and Period

The study was conducted from January, 2018- April, 2018 in Physiotherapy Musculoskeletal unit, outdoor of CRP, Savar.

3.7 Sample Size

Cross sectional studies are done to estimate a population parameter like prevalence of some disease in a community or finding the average value of some quantitative variable in a population (Charan&Biswas, 2013). In this research, researcher also tried to find out effects of household activities on LBP housewife patients in a selected population. Sample size was calculated according to the cross sectional design formula which is given below:

$$n=\{\frac{Z\left(1-\frac{\alpha}{2}\right)}{d}\}^2 \times pq$$
$$=(\frac{1.96}{0.05})^2 \times 0.586 \times 0.414$$
$$=1536.64\times 0.242604 \approx 372$$

Here, Z $(1-\frac{\alpha}{2})$ = 1.96

d= 0.05

P=0.586

q= 1-p

=1-0.586

= 0.414

3.8 Inclusion and Exclusion Criteria

3.8.1 Inclusion Criteria

- Female Subjects who have mechanical low back pain
- Age – 20-65 years (McKenzie, 1995)
- Participant who Willingly interest
- Only female participants who are housewife
- No serious organic pathology present
- No history of psychiatric illness

3.8.2 Exclusion Criteria

- Subject who have severe neurological problem
- Osteoporosis
- Previously history of CVD or Heart disease
- Female subjects who are pregnant
- Female subjects who are doing job or service
- Subjects who has severe general illness

3.9 Sampling Technique

According to target population researcher used convenience purposive sampling method. Convenience sampling also known as Haphazard Sampling or Accidental Sampling is a type of nonprobability or nonrandom sampling where members of the target population that meet certain practical criteria such as easy accessibility, geographical proximity, availability at a given time or the willingness to participate are included for the purpose of the study (Etikan, Musa &Alkassim, 2016).As the time limitation and availability of the sample, it was easier for the researcher to collect the sample through convenience sampling. The purposive sampling technique, also called judgment sampling, is the deliberate choice of a participant due to the qualities the participant possesses. It is a nonrandom technique that does not need underlying theories or a set number of participants. This involves identification and selection of individuals or groups of individuals that are proficient and well-informed with a phenomenon of interest. Therefore sometimes during data collection it was needed to use

purposive sampling technique also to easily get the data. Sometimes participants cannot explain according to needs of the questionnaire or needs. Therefore sometimes it is needed to judge the participant that who can explain or give the correct data easily and collect it from them.

3.10 Data Collection Tools/ Materials

Following method were selected for data collection

- Structured questionnaire was used for descriptive information
- Modified IPAQ questionnaire for physical activity measurement
- VAS Scale for pain measurement
- Pilot study
- Collected data through face to face interview

3.11 Data Collection Procedure

3.11.1 Structured Questionnaire Development

To ensure and improve the quality of the study, first of all questionnaire will be translated according to WHO guidelines i.e. first in the national language that is Bengali language following the standard procedure of linguistic validation.

For translation, two individuals who were fluent in both languages were assigned for forward translation. They were prepared two versions of questionnaires then were sitting together and discuss to come up with one first version of translated questionnaire. Then this translated version was provided to another person who is fluent in both languages and who had not seen the original copy of questionnaire for backward translation. Then all three translators was sit together and consensus was drawn with final version of translated questionnaires in Bengali language.

Before starting data collection procedures, pilot study was conducted for the questionnaire to ensure the face validity of the questionnaire with 5 LBP patients. Filled questionnaire was safely kept. The data collected was reviewed, recorded and enter into the SPSS program to reduce the human errors that are likely to occur while entering and analysis of the data collected.

3.11.2 IPAQ Questionnaire on Physical Activity

The International Physical Activity Questionnaires (IPAQ) comprises a set of 4 questionnaires. Long (5 activity domains asked independently) and short (4 generic items) versions for use by either telephone or self-administered methods are available. The purpose of the questionnaires is to provide common instruments that can be used to obtain internationally comparable data on health–related physical activity. This questionnaire is used for young and middle aged adults in between 15-69 years. The development of an international measure for physical activity commenced in Geneva in 1998 and was followed by extensive reliability and validity testing undertaken across 12 countries (14 sites) during 2000. The final results suggest that these measures have acceptable measurement properties for use in many settings and in different languages and are suitable for national population-based prevalence studies of participation in physical activity. According to this questionnaire some elements doesn't match with the procedure of activity of housewife in Bangladesh. Therefore researcher modified it according to the Bangladesh perspective for easy access of the data.

3.11.3 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 LBP housewife patients from musculoskeletal unit, CRP who were not selected in the main study. 5 persons with LBP were selected conveniently to participate in the pilot study. 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 and to add one more question in the socio-demographic part which was not written before. The time taken to complete the questionnaire was also extended from 10 minutes to 15 minutes.

3.11.4 Face to Face Interview

The interview consisted of structured close-ended questions. Close-ended questions were focused at getting demographic data and household activity related information which were

divided in 12 individual domain such as cooking part, chopping part, washing dishes part etc and 1 personal domain. Each of the questions was designed to provide short and easy answers. The 6 data collectors were involved in taking the face to face interview. The interviews occurred in a private setting within the musculoskeletal unit; the suitable time was 8 am to 5 pm as the data collectors feel comfortable within this time. The interview process did not last more than 15 minutes. Prior to the commencement of the interview, the participants were consented to the interview by sharing the consent form verbally and written.

3.12 Data Management and Analysis Process

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. Investigator used Chi-sqaure (χ^2) test and Pearson correlation test to see the association between some descriptive variable (socio-demographic and household activity related) with the LBP. Then Binary Logistic Regression used to find out probability of having the dependent variable (LBP) in compare with independent variable (household activities).

3.13 Quality Control and 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 was maintained the proper documentation of procedures and methods and maintain the research records

according to supervisor guideline. The samples and materials were handled carefully by researcher.

3.14 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.

3.15 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 RESULTS

4.1 Introduction

After collecting and analysing the data, the researcher has to accomplish the task of drawing inferences followed by result of the study. Therefore two hundred fifty five data from the housewife patients with LBP were collected in the study. The data were analysed with SPSS 16 version. All the variables were defined and put their values in the SPSS spread sheet and data were input there. Data were analysed according to the objectives of the study and presented below where **Section 4.2** explain the percentage distribution of the socio-demographic characteristics of the participants. **Section 4.3** gives the percentage of doing different household activities and their association with LBP. **Section 4.4** provides a brief explanation about the position of doing household activities and their association with LBP, Where, **Section 4.5** provides the percentage of time duration about different household work. **Section 4.6** gives the percentage of pain intensity during house hold work. **Section 4.7** provides the percentage of psychological condition of the housewife due to household activities. **Section 4.8** gives the information about the association of socio-demographic characteristics with LBP. Lastly **Section 4.9** explain Odds ratio of household activities by logistic regression analysis.

Table 4.1: Percentage Distribution of Socio-demographic Characteristics of the Participants (n=255)

Characteristics		Characteristics	
Age in Years		**Have you any Disabled Child or Person**	
20-30	23.1		
30-40	28.6	No	
40-50	30.2	Yes	91.8
50+	18.0		8.2
Marital Status		**Place of residence**	
Married	94.1	Rural	43.5
Widow	5.5	Urban	17.3
Separate	0.4	Semi-urban	39.2
Duration of Married Life		**Educational Status**	
1d-10y			
10y-20y	16.5	0	19.6
20y-30y	25.9	1-5	25.9
30y-40y	27.8	6-10	37.6
40y-more	23.1	11-12	11.4
	6.7	More	5.5
Family Structure		**Duration of doing Household Activities**	
Nuclear	92.9	1d-10y	16.1
Joint	7.1	10y-20y	25.9
		20y-30y	27.8
		30y-40y	23.9
		40y-more	6.3
Number of Family Member		**Duration of suffering from LBP**	
1-3			
4-6	25.5	1d-24m	44.7
7-9	57.6	24m-48m	15.3
10-more	12.2	48m-72m	12.2
	4.7	72m-96m	11.4
		96m-more	16.5
Number of Children			
0	6.7		
1-2	54.1		
3-5	37.6		
6-More	1.6		

Result from **(Table 4.1)** showed that the common age group of the housewife was 30-50 that was 60% and the second highest was laid in between 20-30 years which was 23.1%. This result indicates that adult housewives are more affected due to household activities at home.

According to marital status 94.1% were married; widow and separated were 5.9%. Therefore 53.8% housewives were married for 10-30 years which was the maximum ratio and 30% housewives were married for more than 30 years. Among them 53.7% doing their household activities for 10-30 years and 30.2% housewives were doing their household activities for more than 30 years.The prevalence of LBP was 45% for 1d-24 month which was the highest ratio and 39% for 24m-96m which was the second highest ratio. However 16.5% were suffering from LBP for more than 96 month.

In family structure 92.9% family were nuclear and only 7.1% family was joint family. This means in our country maximum people have nuclear family. Among them 4-6 family member ratio was 57.6% which was the maximum ratio among the participants. The second highest ratio was 25.5% who had 1-3 family members and only 16.9% had more than 7 family members. Among the participants 54.1% has 1-2 no of children which was the maximum ratio, 37.6% has 3-5no of children which was the second highest ratio and only 6.7% has no children. Among them 91.8% has no disable child and only 8.2% has disable child or person at their home to whom they had to take care.

Maximum participants live in the rural area which was 43.5%. In semi-urban area 39.2% participants were lived and only 17.3% lived in the urban area. This means maximum housewives lived in the rural and semi-urban area. Rural women have to do more manual work.The educational status among the housewives was higher in secondary school level which was 37.6% and then primary level which was 25.9%. Among them 19.6% were illiterate and 16.9% completed their higher secondary and more.

Table 4.2: Association between Household Activities and LBP (n=255)

Characteristics	Response	(%)	χ^2value	r -value
Cook	Yes	93.3	66.23***	.407
	No	6.7		
Chop	Yes	90.2	102.7***	.483
	No	9.8		
Wash dish	Yes	77.6	89.36***	.525
	No	22.4		
Wash cloth	Yes	76.5	152.48***	.654
	No	23.5		
Sweep floor/cleaning toilet	Yes	72.5	133.45***	.643
	No	27.5		
Lift heavy objects	Yes	40.8	191.73***	.801
	No	59.2		
Carry heavy objects	Yes	36.1	210.31***	.836
	No	63.9		
Look after cattle	Yes	22.4	136.27***	.683
	No	77.6		
Caring for family members	Yes	29	16.04***	.630
	No	71		
Travel for groceries	Yes	26.3	153.32***	.724
	No	73.7		
Pass leisure time	Yes	97.6	6.097*	.138
	No	2.4		

Percentage Distribution of Activities during Leisure Time

Activities during Leisure time	Pray	16.9
	Sew	16.5
	Gardening	4.7
	Read books	9.8
	Watch TV	33.3
	Gossiping	23.1
	Others	14.1

p value (p<0.05*, p<0.01**, p<0.001***); Pearson correlation(r value)

Among 225 participants 93.3% did cook and 90.2% did chop which was significantly associated at the significant level of (p<.0001) and positively correlated with LBP. Among the participants77.6% and 76.5% wash their dish and cloth respectively at home which was also significantly associated at the significant level of (p<.0001) and positively correlated with LBP **(Table 4.2)**. The percentage of the sweep the floor and cleaning toilet, lift heavy objects, carry heavy objects, look after cattle, caring for family members, travel for groceries and pass leisure time was 72.5%, 40.8%, 36.1%, 22.4%, 29%, 26.3% and 97.6% respectivelywas significantly associated and positively correlated with LBP at the significance level of p value (p<0.001). Among the participant maximum passed their leisure time by watching TV (33.3%) following gossiping (23.1%), praying (17%) and sewing (16.5%).

Table 4.3: Association between Position of Doing Household Activities and LBP (n=255)

Characteristics	**Position of the activities**						
	Low sitting	Bending	Standing	Sitting in a chair	Others	χ^2value	r-value
Cooking	38.0	3.1	41.2	2.0	7.8	89.36***	0.153
Chopping	62.4	10.6	3.9	4.3	9.4	13.25*	0.045
Washing dish	34.1	10.6	20.8	5.9	6.3	103.95***	0.197
Washing cloth	38.4	30.6	2.0	.4	5.9	24.73***	0.196
Sweeping/cleaning toilet	14.1	47.5	11.0	-	-	145.28***	0.518
Look after cattle	10.2	3.5	6.7	1.6	.4	146.66***	0.638
Caring for family members	5.9	5.5	11.8	2.0	3.9	154.27***	0.509
Leisure time	8.6	5.1	10.6	22.7	50.6	28.79***	-.106

p value (p<0.05*, p<0.01**, p<0.001***); Pearson correlation(r value)

Maximum participants did their cooking in standing and low sitting position which was 41.2% and 38.0% respectively. Only 7.8% used others option like use a tool during cooking **(Table 4.3)**. However 62.4% participants did their chopping in low sitting position where 10.6% participants did in bending, 9.4% did in others way and only 3.9% did in standing position during chopping. Among them 34.1% wash their dish in low sitting position, 20.8%

wash in standing position, 10.6% in bending position and only 12.2% wash their dish in others way and sit in a chair. Maximum participants wash their cloth in low sitting position (38.4%) and then in bending position which were 30.6%. Only 7.9% wash their cloth in standing and others position. In case of sweeping the floor and cleaning the toilet maximum participants (47.5%) did in bending position and then in low sitting position (14.1%). Only 11.0% participants did it in standing position. Maximum participants look after their cattle in low sitting and standing position which was 10.2% and 6.7% respectively. Participants take care their family members maximum time in standing position (11.8%) and then in low sitting and bending position (11.4%).In all of participants 50.6% passed their leisure time in various positions like lying in a bed or gossiping in bed or watching TV in lying position. Among them 22.7% passed their leisure time in sitting position and 8.6% passed in low sitting position when they did pray, reading books, gossiping and watching TV. The position of doing activities were also significantly associated and positively correlated with LBP at the significance level of p value ($p<0.001$) in every activity they did at home except chopping at p value ($p<0.05$) level.

Table 4.4: Percentage Distribution of the Time Duration of Doing Household Activities (n=255)

Characteristics	**Time duration of Household activities (%)**	
	Less than 30 min	More than 30 min
Cooking	14.5	85.5
Chopping	71.8	28.2
Wash dish	88.2	11.8
Wash cloth	80.8	19.2
Sweeping	83.9	16.1
Look after Cattle	96.1	3.9
Take care of family member	82	18
Leisure time	18.4	81.6

Among 255 participants **(Table 4.4)** showed that, maximum participants (85.5%) needed more than 30 min and only 14.5% needed less than 30 minfor cooking. Maximum participants (71.8%) did their chopping within 30 min where only 28.2% needed more than 30 min. In case of wash dish and cloth 84.5% participants needed less than 30 min and only 15.5% needed more than 30 min. however for sweeping (83.9%), look after cattle (96.1%) and take care of family member (82%) participants needed less than 30 min. in case of leisure time, 81.6% participants passes their leisure timefor more than 30 min.

Table 4.5: Percentage Distribution of the Pain Level of Doing Household Activities (n=255)

Characteristics	Pain level of doing Household activities %		
	Mild pain (0-3)	Moderate pain (4-6)	Severe pain (7-10)
Cook	21.6	47.5	31
Chop	19.6	53.7	26.7
Wash dish	45.1	39.2	15.7
Wash cloth	31.8	41.2	27.1
Sweep floor/cleaning toilet	42.0	29.4	28.6
Lift heavy objects	65.9	17.6	16.5
Carry heavy objects	68.2	19.2	12.5
Look after cattle	86.7	9.0	4.3
Caring for family members	84.3	10.6	5.1
Travel for groceries	82.4	12.9	4.7
Pass leisure time	50.2	35.3	14.5

Maximum participants felt mild to moderate pain during their various household activities showed in the **(Table 4.5)**.Among them during cooking (47.5%) and chopping (53.7%) maximum participants felt moderate LBP where during wash dish (45.1%) and cloth (41.2%) maximum participants felt mild to moderate pain. However in case of sweep floor, lift heavy

objects and carry heavy objects, look after cattle, caring family members, travel for groceries and pass leisure time participants felt mild pain 42.0%, 65.9%, 68.2%, 86.7%, 84.3%, 82.4% and 50.2% respectively.

Table 4.6: Percentage Distribution of the Psychological Condition of the Housewife

Characteristics	Response	%
Feel Monotonous	Yes	68.2
	No	31.8
Feel exhausted due to Household activities	Yes	70.6
	No	29.4

As the participants doing their household activities for a long period of time therefore **(Table 4.6)** showed maximum (68.2%) participants felt monotonous and 70.6% felt exhausted at the end of the day.

Table 4.7: Association between Socio-demographic Variables and LBP

Variables	χ^2value	r -value
Age	40.42***	.328
Place of residence	15.65*	.004
Duration of Married life	41.47***	.357
Duration of doing household activities	41.47***	.357

p value (<0.05*, <0.01**, <0.001***); Pearson Correlation (r-value)

Results from **(Table 4.7)** showed Age, Place of residence, Duration of married life and Duration of suffering LBP were significantly associated and positively correlated with LBP.

Table 4.8: Odds Ratio and 95% CI of the Predictors by LBP

Predictors	OR (95% CI)	Predictors	OR (95% CI)
Age		**Duration of Time during Cooking**	
20-30	9.059*** (3.508-23.393)	>30 min	11.184** (2.622-47.731)
30-40	2.156* (1.017-4.570)	<30min(RC)	-
40-50	1.385 (.662-2.895)		
50+ (RC)	-		
Duration of Time during Chopping		**Washing cloth**	
>30 min	2.667** (1.444-4.927)	No	0.069*** (0.016-0.291)
<30min(RC)	-	Yes(RC)	-
Duration of Time during Wash Dish		**Sweep floor/cleaning toilet**	
>30 min	3.33** (1.503-7.387)	No	0.031** (0.004-0.228)
<30min(RC)	-	Yes(RC)	-
Duration of Time during Wash Cloth		**Lift heavy objects at home**	
>30 min	5.709*** (2.938-11.097)	No	0.049*** (.017-0.144)
<30min(RC)	-	Yes (RC)	-
Duration of Time during Sweeping Floor		**Duration of household activities**	
>30 min	4.712*** (2.331-9.525)	>10years	3.64*** (1.845-7.219)
<30min(RC)	-	<10years(RC)	-
Chopping		**Wash dishes**	
No	0.126* (0.017-0.956)	No	0.099** (0.023-0.422)
Yes(RC)	-	Yes(RC)	-

*p<0.05; **p<0.01; ***p<0.001 (p-values);odds ratio (OR); confidence interval (CI); reference category (RC)

The results from the binary logistic regressions analysis in (**Table 4.8)** showed that the probability of having pain was 9.05 (95% CI=3.508-23.393) times significantly higher in

between age range 20-30 years, 2.15 (95% CI=1.017-4.570) times higher in between age range 30-40 years compared with age range over 50 years.The likelihood of having LBP during chopping was 0.126 (95% CI=0.017-0.956) significantly less for who didn't chop than who did chop at home. Significantly less likely of having LBP during washing dishes was 0.099 (95% CI=0.023-0.422) and sweeping floor /cleaning toilet 0.031 (0.004-0.228).However the result was highly significant for the probability of having LBP during washing cloth 0.069 (95% CI=0.016-0.291) and lift heavy objects 0.049 (95% CI=.017-0.144) were less likely for who didn't did this activities at home than who did.

The probability of having LBP was 11.18 (95% CI=2.622-47.731) times significantly higher for who cook more than 30 minutes compared to those who cook for less than 30 minute at home among the housewives. In consequence the probability of having LBP was 2.7(95% CI=1.444-4.927), 3.33(95% CI=1.503-7.387), 5.709(95% CI=2.938-11.097), 4.712(95% CI=2.331-9.525)times significantly higher for who chopping, washing dishes, washing cloth and sweeping floor/clean toilet respectively more than 30 minutes compared to those who did for less than 30 minute at home among the housewives.

Among the participants who did their household activities for more than 10 years, the likelihood of feeling monotonous was 3.64(95% CI=1.845-7.219) times significantly higher compared with who did for less than 10 years.

CHAPTER V DISCUSSION

The purpose of the study was to identify the effects of household activities among 255 housewife LBP patients which were done first time in clinical site at CRP. The findings of the research showed a significant result which were discussed here with the support of different literature.

Prevalence of LBP- The findings of the present study showed that the prevalence of recent episodes of LBP was 45% and 55% respondents had CLBP. The prevalence rate of LBP in Bangladesh was much higher than the rate observed in developed countries like Australia (25.6%), Canada 28.7%, the United Kingdom 36.1% and Sweden 39.2% and was very close to the rate in Qatar 56.5%, Africa 62% and China 64% (Bener, Dafeeah & Alnaqbi, 2014). One study in India found yearly prevalence of LBP was 83% among housewives (Gupta & Nandini, 2015). These observations are consistent with finding of Bridget & dienye (2012) that once back pain occurs; it is likely to continue. Similarly, another one research found that 10–15% of the patients with acute pain develop chronic pain and the chronic state represent the great challenge as it does not improve with time and consumes most resources (Balagué, Mannion, Pellisé & Cedraschi, 2012). Maximum participant from present study felt mild to moderate pain during their household activities except during chopping they felt moderate to severe pain. This finding were parallel with one study done on Bangladesh (2014) where they found the similar result that housewives felt mild to moderate pain during their household activities (Akter, 2014).

Age and Marital Status- Present study found that, the age range in between 30-50 years was a higher ratio of 60% and positively significant correlation (r =.328) with LBP which suggests that LBP happened more among adult housewives and increase with age. Binary regression showed that LBP likely to 9.05 (95% CI=3.508-23.393) times significantly higher among 20-30 years age group, 2.15 (95% CI=1.017-4.570) times higher among 30-40 age group compared to over 50 years. Among the housewives 94.1% were married in the present study. In Turkey, the prevalence of LBP was significantly higher among housewives with a rate of 64.3% and among married one than single. They also found LBP was significantly

higher in elder 41-64 age group (Altinel et al., 2008). In Iran (Fazli et al., 2016), the prevalence of LBP among housewives was 51.33% and they found possible relation with age (mean age 40.1 ±12.5) and LBP (OR=1.06, CI 95%:1.01-1.11).

Place of Residence - Study found that 43.5% housewives lived in the rural area, 39.2% lived in the semi-urban area and only 17.5%lived in the urban area and place of residence had a significantly positive association with LBP. According to the finding of the study it was more clear that rural housewife had more prone to develop LBP as the working, living, and social architecture in the rural areas significantly differ from urban area (Gupta & Nandini, 2015). They have to do more manual work like lifting and carrying heavy objects, look after cattle, gardening etc. Due to traditional method for doing tasks at Iranian homes and not using of mechanical tool like vacuum cleaner, cloth washing machine and dishwasher machine, the women have to do a lot of tasks that involved different movements of their body which may lead to develop LBP (Fazli et al., 2016).

Duration of Married Life and Doing Household Activities- According to participants, 54% housewives were married for 10-30 years and 30% housewives were married for more than 30 years. Among them 53.7% doing their household activities for 10-30 years and 30.2% housewives were doing their household activities for more than 30 years. More marriage duration (OR=1.08, CI 95%:1.01-2.05) was also a possible cause of LBP among Iranian housewives (Fazli et al., 2016). During data collection respondents had reported that they had to start their work from early in the morning and continue till night. They actively participate in household activities which are common in daily chores of the housewives and could be listed as cooking, chopping the vegetables, washing dishes, washing clothes, collecting water, sweeping floor and cleaning toilets, lifting heavy loads (such as full water pitcher or bucket, baby etc) and carrying loads, taking care of domestic animals, take care of family members, gardening and travel for groceries. These all activities require repeated bending, twisting, lifting and pulling movements of the spine. One study in 2007 found heavy physical work (77%), poor posture (8.5%) and prolong standing (4.5%) was the causes of LBP (Bio, Sadhra, Jackson & Burge, 2007). Another one study in 2008 reported that manual handling, poor posture and improper style of lifting objects harm the spine due to abnormal stress and strain forced on spine during activities (Koley, Singh & Sandhu, 2008).

Household Activities- Present study found that maximum participants did various type of work at home on which participation rate was remarkably higher in cooking (93.3%), chopping (90.2%), washing dishes (77.6%), washing cloth (76.5%) and sweeping floor/cleaning toilet (72.5%). Beside this 41% housewives lift heavy objects like baby, water pot or bucket etc and 36.1% carry heavy objects at home regularly. They also look after their cattle (22.4%), caring for the family members or child (29%), sewing (16.5%), gardening (4.7%) and travel for groceries (26.3%) though the ratio was less. This findings were very equivalent with one study in Bangladesh on which they also found that the housewives participation rate was higher in cleaning house (92%), Washing cloth (81%), child care (80%), cooking and preparation of meal (81%) and lowest in case of Gardening (24%), Look after cattle (52%) and buying groceries (24%) (Asaduzzaman, Kabir, & Radović-Marković, 2015). Similarly one study in Sri Lanka (2016) also found comparable result among Sri Lankan housewives to this study. They found household work has a significant cause of low back disorders particularly in the South Asian settings where work performed manually and labour intensive. They also found that the majority of housewives were performing multiple of household chores like cooking related activities (93.6%), hand washing clothes (73.6%), ironing (88.2%), sweeping indoor and outdoor (33.9%), cleaning bathrooms/toilets (82.8%), buying groceries (65.8%) and carrying children (33.9%) (Ranasinghe et al., 2016).

Pattern and Time duration of Household work- According to our country perspective housewives have to do their work in various postures. During data collection time researcher found that Housewives had to engage in prolonged standing posture and repetitive movements during food preparation and dish-washing. Similarly, housewife frequently performs household tasks such as mopping/cleaning in narrow or difficult to reach spaces that require awkward postures including bending, kneeling and squatting. Participants describe that their surrounding environment on which they did their work or the way to complete their daily activities, compel them to develop LBP. Excessive posture stretches posterior longitudinal ligament, approaching of pedicles which causes compression on the nerve roots as well as desensitizes mechanoreceptors with consequent loss of the reflex, contraction of stabilizing muscles and increased load over the spine which ultimately create LBP (Pope, Goh & Magnusson, 2002). Therefore environment is a vital part in our daily life or daily activities. If there is any trouble in surrounding environment then this can prevent to

fulfill our roles which are appropriate according to our ability (WHO, 2001). However LBP among housewives could be associated with awkward work postures or repetitive movements. According to the findings of the study, maximum participants did their cooking in standing posture (41.2%) following 38% participants in low sitting position. Beside this, maximum participant did their housework in low sitting and bending position like chopping (73%), washing dish (45%), washing cloth (69%), sweeping floor/cleaning toilet (61.6%), look after cattle (13.7%) and caring for family members (14%). During data collection present study also found that housewives did their work without any helping hand or participation of other family members for a long period of time from early morning to night which required more effort during work. These findings were very corresponding with another study where they also found the similar thing among Iranian housewife (Fazli et al., 2016). According to present study, 85.5% and 71.8% need more than one hour for cooking and half an hour for chopping respectively. Beside this they needs near about 30 minutes for each activity whatever they did at home. Therefore according to the variation of the activity, they did work more than 6-7 hours at home. This finding was supported by one study in Bangladesh, where they found 55.7% women work for 1-3 hours per day in sitting position, 15% work for 3-5 hour, 5% work for 5-8 hours and 22% work for > 8huors. Among them 58% women had history of lifting heavy weight (Barua & Sultana, 2015). Binary Logistic Regression from present study found that the housewife felt pain 11.18 (95% CI=2.622-47.731) times, 2.66 (95% CI=1.444-4.927) times, 2.33 (95% CI=1.503-7.387) times, 5.70 (95% CI= 2.938-11.097) times, 4.71 (95% CI=2.331-9.525) times significantly higher if they did cooking, chopping, dish wash, wash cloth and sweeping respectively for more than 30 minutes.

The findings for the activities that participants did at home were highly significant and positively moderate to strongly correlate with LBP. Furthermore, Binary Logistic Regression found that the probability of having LBP was less among who didn't do this activity at home. This finding is in line with some literature discussing work exposures related to LBP. One study in Bangladesh (2015) that Posture and regular household work was responsible for developing low back pain among housewife and Bending activities aggravate this kind of back pain (Barua & Sultana, 2015). LBP was 1.65 times more frequent who were mostly exposed to trunk flexion and rotation (Pataro and Fernandes, 2014). Another study (Fazli et

al., 2016) found that heavy weight lifting (OR=1.07, CI 95%:1.04-2.19) and performing household tasks in awkward postures (bending, kneeling or squatting) was associated with back pain (OR: 2.17; CI = 1.17–4.01). Reid et al., (2010) reported that posture like bending, kneeling and squatting were associated with LBP. One other study also found that household tasks such as tidying, mopping, sweeping, washing the floor and cleaning the bathroom may sometimes require awkward working postures. Housewives regularly had to engage in these tasks, which had potential risk factors for back pain (Habib et al., 2010). Similarly one study in Qatar (2014) also found that LBP among housewife were significantly associated with prolonged standing (49.5% p=0.026), prolonged sitting (45.4% p=0.020), and lifting heavy weights (41.8% p<0.039). According to Binary Logistic Regression they also found that the probability of having pain was significantly higher if women did their work in prolonged standing (OR, 1.70; 95% CI, 1.34-2.16; p<0.001), prolonged sitting (OR, 2.13; 95% CI, 1.62-2.80; p<0.001) and lift heavy weight in bending (OR, 2.36; 95% CI, 1.76-3.17; p<0.001) (Bener, Dafeeah & Alnaqbi, 2014).

Psychological condition of Housewife- Investigator of the present study found that housewives felt monotonous due to prolong and repetitive same activity at home. After marriage every housewife had to do their household activity till elder age. This long period of time and repetitive same work in everyday made them monotonous. According to the findings 68.2% felt monotonous and 70.6% felt exhausted at the end of the day due to household activities at home. Housewives who did their work for more than ten years, the likelihood of having pain was 3.64 (95% CI=1.845-7.219) times significantly higher compared with who did less than ten years. One study in Sri Lanka (2016) supported this result, where they found psychological distress were 1.8 (95% CI=1.3–2.6) times higher among housewives due to household activities at home (Ranasinghe et al., 2016). Iranian housewives also felt exhausted due to hard work at home as more energy consumed on this activities and this factor may affect the women's body posture during work at home (Fazli et al., 2016).

Leisure activities- Surprisingly present study found that 97.6% passed their leisure time. They did various activities at that time such as pray (17%), sewing (16.7%), watch TV (33.3%), gossiping (33.3%) and others (14.1%) were remarkable. They pass their leisure time maximum time in lying position (50.6%) following sitting in a chair (22.7%). During data collection investigator found that they passed more than one hour during their leisure time. Sometimes it took 2-3 hours specially during pray, watching TV and gossiping. Lione (2014) found that LBP correlates with physical inactivity such as time spent on hours watching TV or video which were supported the findings of this study.

CHAPTER VI CONCLUSION & RECOMENDATIONS

7.1. Conclusion

This study reveals that all of married women have to do their household activities for a long period of time at home. They have to do their household activities regularly after marriage. Therefore elder housewife suffer more as the duration of married life and duration of doing household activities are high among them. Study also found that housewife have to do their work maximum time in prolong sitting, standing or bending posture from early morning to night with or without the cooperation of the family members to different household activities. Maximum time they work alone without any support. According to country perspectives, social and religious restrictions from the beginning compel the housewife to doing works like that way at home. Among the activities coking, chopping, washing dish, washing cloth, lift heavy objects and sweeping the floor/cleaning toilet are done by maximum housewife. According to the finding of the study it is needed to change the agronomical setting at home to prevent poor posture and provide proper guideline about the posture and way during work which may help to prevent social and economical burden for LBP and improve psychosocial condition of the housewife. Therefore this study has important contribution to the literature. First, study find out the percentage of different household activities that housewife do at home. Second the association of doing household activities and LBP along with different position during work were find out through the study which was an important finding of the study. This finding will help to think about the preventive measure and educate the patient to do the work in a correct way in the policy. Third, the finding of the psychological status of the housewife was another important finding which will help during counselling the patient. Furthermore the findings study enriched the literature and methodology more by the Odd ratio of household activity which will help to provide a scientific explanation during patient education time.

7.2. Recommendations of the study

- Further a national epidemiological survey can be done with large sample size to identify the total count of effort of housewife that they provide during household activity as unpaid physical labor.
- Furthermore Research can be done to identify the disability ratio during activities of daily living (ADL) at home.
- Study can be done with the inclusion of women with job holder to make a comparison study which may help to find out the more risk group.
- Research should do to identify the preventive measure of the problem and social perspectives to understand the social factors or barrier which is faced by housewife at home.
- Physiotherapy department of the CRP may take steps to make a guideline for the proper education about posture and the procedure to follow during the working time of housewife which may help to prevent LBP.
- Physiotherapy department of the CRP can make awareness programme to change the agronomical setting of the home and counselling session to prevent further injury or recurrences of LBP.
- It is needed to do mixed study (quanti-qualitative) with in-depth interview to identify the actual causes which are oblige housewife to do their work in this way at home.

7.3. Limitation of the Study

- As it is a centre based study, data were collected only from those people who came to centre for the rehabilitation of the paralyzed (CRP) for treatment therefore the result of the study can't be generalised to whole Bangladesh.
- Study sample was not sufficient due to availability of the patient, communication difficulty, lack of funding and time limitation of the study.
- Sample of the study was only housewife. There was exclusion of women who did service or job outside at home though they did household activity also. Therefore comparison was not possible that who were more vulnerable to having LBP.
- The reliability of the questionnaire has not been checked in the study.

- Limited Time and lack of funding was another limitation of the study. Therefore sampling technique might have influence the result as convenience technique used by the researcher. Random sampling technique might improve the quality of the research.

- Lack of prior research studies on this topic in the Bangladesh. So there is no valid information in clinical site about effect of household activities among LBP housewife patients.
- This study didn't consider other factors that may influence the outcome of the result like physical factor (BMI, Height, Weight), medical factor (other diseases or illness) and personal factor (smoking, tobacco use)
- Result of the study was only measured by pain intensity during household activities by VAS scale. There was no others measurement to identify the others effect of household activities such as disability ratio which was a limitation of the study.
- Another limitation of the study was that researcher could not identify the social perspective as well as preventive measure of the problem.

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CHAPTER VI ANNEXES

Annex I

Informed Consent (Bangla)

সম্মতিপত্র

আসসালামু আলাইকুম,

আমি আসমাআরজুরিহ্যাবিলিটেশন সায়েন্স, বাংলাদেশ হেলথ প্রফেশন্স ইন্সটিটিউট (বিএইচপিআই), ঢাকা বিশ্ববিদ্যালয়ের একজন ছাত্র। স্নাতকোত্তর ডিগ্রী প্রাপ্তির জন্য আমার একটি গবেষণামূলক প্রকল্প পরিচালনা করা প্রয়োজন এবং আমার গবেষণা প্রকল্পটি হচ্ছে "Effects of Household Activities on Low Back Pain among female patients who attending for physiotherapy treatment at CRP, Savar."এর জন্য আমি একটি জরিপ সঞ্চালন করবোসি আর পি তে ফিজিওথেরাপীচিকিৎসানিতেআসাকোমরব্যথারমহিলারোগীদেরউপরগৃহস্থলীকাজকর্মেরপ্রভাবকতটুকু।এই গবেষনায় অংশগ্রহনের জন্য আপনাকে কিছু প্রশ্ন করা হবে এবং আপনাকে এইগুলোর সঠিক উত্তর দিতে হবে।হয়ত আপনি এতে সরাসরি উপকৃত হবেন না তবে এই গবেষনার ফলাফলেওন্য অনেকে উপকৃত হতে পারে।তথ্য পাওয়ার জন্য আমার আপনাকে কিছু প্রশ্ন জিজ্ঞাসা করতে হবে। আপনার সরবরাহকৃত যাবতীয় তথ্য গোপন রাখা হবে এমনকি প্রতিবেদন এবং প্রকাশনের সময়েও। আপনার সাহায্য যথাযথ ভাবে সমাদৃত হবে; আমি আপনাকে সত্য তথ্য দিতে অনুরোধ করবো।এই অধ্যয়নে আপনার অংশগ্রহণ স্বেচ্ছাকৃত এবং যে কোন নেতিবাচক প্রভাবে আপনি এই অধ্যয়ন থেকে নিজেকে প্রত্যাহার করে নিতে পারবেন। সাক্ষাতকার নিতে হয়ত ২০ মিনিটের মত সময় লাগবে এবং কম সাহায্যের প্রয়োজন হবে। আপনার যদি কোন অনুসন্ধান থাকে তাহলে কোন সংকোচ ছাড়াই জিজ্ঞাসা করতে পারেন।

আসমাআরজু

মাস্টার্স ইন রিহেবিলিটেশন সায়েন্স(বি এইচ পি আই)

অংশগ্রহনকারীর স্বাক্ষর: তারিখ:

তদন্তকারীর স্বাক্ষর: তারিখ:

Annex II

Informed consent (English)

Dear Madam

I am Asma Arju Clinical Physiotherapist of Physiotherapy Department of the Centre for the Rehabilitation of the Paralysed (CRP), Savar, Dhaka. Currently I am studying 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 "Effects of Household Activities on Low Back Pain among female patients who attending for physiotherapy treatment at CRP, Savar." The aim of the study is to identify the effects of Household Activities on Low Back Pain among housewife patients.

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.

AsmaArju

Clinical Physiotherapist

Physiotherapy Department

CRP-Chapain, Savar, Dhaka-1343

Participant's signature…….Date:……..

Data collector's signature…….Date:……

Annex III
Questionnaire (Bangla)

পর্ব-১:আর্থ-জনতাত্ত্বীকতথ্যঃ

১. অংশগ্রহণকারীর আইডি-নাম্বার		কোড
২. অংশগ্রহণকারীর বয়স	_____ বছর	
৩. বৈবাহিকঅবস্থা	১.বিবাহ ২.তালাকপ্রাপ্ত ৩. বিধবা ৪. বিছিন্ন	
৪.বিবাহিতজীবনএরসময়কাল(মাস/বছর)		
৫. পরিবারকাঠামো	১. এককপরিবার ২. যৌথ পরিবার	
৬.পরিবারসদস্যেরসংখ্যা		
৭. সন্তানেরসংখ্যা		
৮.আপনারপরিবারেকোনপ্রতিবন্ধীশিশুবাপ্রতিবন্ধীসদস্যআছেকী?	১. হ্যাঁ **যদিহ্যাঁহয়**, - কতজনপ্রতিবন্ধীশিশুবাপ্রতিবন্ধীসদস্যআছেঃ **-কতসময়ধরেঃ** ২. না	
৯. বাসস্থান	১. গ্রাম্য ২. শহর ৩. মফস্বল	
১০. শিক্ষাগত যোগ্যতা		
১১. মাসিকআয়		
১২. আয়েরউৎস	১. নিজের ২. স্বামী ৩. প্রাপ্তবয়স্কসন্তান ৪. অন্যান্য	
১৩. বাড়িরকাজকর্মেরসময়কাল(মাস/বছরেরমধ্যে)		
১৪. আপনিকতদিনযাবতকোমরব্যথায়ভুগছেন(মাস/বছর)		

পর্ব-২: পরিবারের কার্যাবলি

ক.রান্নাকরা		কোড
১. আপনাকে কি আপনার বাসায় রান্না করতে হয়?	১.হ্যাঁ, যদিহ্যাঁহয় তবে নিচেরপ্রশ্নগুলোর উত্তর দিন। ২.না-আমাকে অন্য কেউ সাহায্য করে যদিনাহয় তবে পরবর্তী **খ** অংশে চলে যান।	
২.রান্নার সময় আপনার শারিরীক অঙ্গভঙ্গি	১.নিচে বসে ২.ঝুঁকে ৩.দাঁড়িয়ে ৪.চেয়ারে বসে ৫.অন্যান্য	
৩. সারাদিনে রান্না করতে আপনার কত সময় ব্যয় হয়		
৪.আপনি কি রান্নার সময় ব্যথা অনুভব করেন	১. হ্যাঁ, যদিহ্যাঁহয় তবে নিচের ৫ নম্বর প্রশ্নের উত্তর দিন। ২.না, যদিনাহয় তবে পরবর্তী ৬ নম্বর প্রশ্নে চলে যান।	
৫. আপনি কত ব্যথা অনুভব করেন?**VAS** (০-১০)		
খ.কাটাকাটি করা (উদাঃ সবজি বা মাছ বা মাংস)		
৬. আপনাকে কি আপনার বাসায় কাটাকাটি করতে হয়?	১.হ্যাঁ, যদিহ্যাঁহয় তবে নিচেরপ্রশ্নগুলোর উত্তর দিন। ২.না-আমাকে অন্য কেউ সাহায্য করে যদিনাহয় তবে পরবর্তী **গ** অংশে চলে যান।	
৭. কাটাকাটি করার সময় আপনার শারিরীক অঙ্গভঙ্গি	১.নিচে বসে ২.ঝুঁকে ৩.দাঁড়িয়ে ৪.চেয়ারে বসে ৫.অন্যান্য	
৮. সারাদিনে কাটাকাটি করতে আপনার কত সময় ব্যয় হয়		
৯.আপনি কি কাটাকাটি করার সময় ব্যথা অনুভব করেন	১. হ্যাঁ, যদিহ্যাঁহয় তবে নিচের ১০ নম্বর প্রশ্নের উত্তর দিন। ২.না, যদিনাহয় তবে পরবর্তী ১১ নম্বর প্রশ্নে চলে যান।	
১০. আপনি কত ব্যথা অনুভব করেন? **VAS** (০-১০)		
গ.থালাবাসন ধৌত করা		
১১. আপনাকে কি আপনার বাসায় থালাবাসন ধৌত করতে হয়?	১.হ্যাঁ, যদিহ্যাঁহয় তবে নিচেরপ্রশ্নগুলোর উত্তর দিন। ২.না-আমাকে অন্য কেউ সাহায্য করে যদিনাহয় তবে পরবর্তী **ঘ** অংশে চলে যান।	
১২. থালাবাসন ধৌত করার সময় আপনার শারিরীক অঙ্গভঙ্গি	১.নিচে বসে ২.ঝুঁকে ৩.দাঁড়িয়ে	

	৪.চেয়ারে বসে ৫.অন্যান্য	
১৩. সারাদিনে থালাবাসন ধৌত করতে আপনার কত সময় ব্যয় হয়		
১৪.আপনি কি থালাবাসন ধৌত করার সময় ব্যথা অনুভব করেন	১. হ্যাঁ, যদিহ্যাঁহয় তবে নিচের ১৫ নম্বর প্রশ্নের উত্তর দিন। ২.না, যদিনাহয় তবে পরবর্তী ১৬ নম্বর প্রশ্নে চলে যান।	
১৫. আপনি কত ব্যথা অনুভব করেন? **VAS** (০-১০)		
ঘ. কাপড় ধোয়া		
১৬. আপনাকে কি আপনার বাসায় কাপড় ধোয়াকরতে হয়?	১.হ্যাঁ, যদিহ্যাঁহয় তবে নিচেরপ্রশ্নগুলোর উত্তর দিন। ২.না-আমাকে অন্য কেউ সাহায্য করে যদিনাহয় তবে পরবর্তী **ঙ** অংশে চলে যান।	
১৭.কাপড় ধোয়ার সময় আপনার শারিরীক অঙ্গভঙ্গি	১.নিচে বসে ২.ঝুঁকে ৩.দাঁড়িয়ে ৪.চেয়ারে বসে ৫.অন্যান্য	
১৮. সারাদিনে কাপড় ধোয়ায় করতে আপনার কত সময় ব্যয় হয়		
১৯.আপনি কি কাপড় ধোয়ার সময় ব্যথা অনুভব করেন	১. হ্যাঁ, যদিহ্যাঁহয় তবে নিচের ২০ নম্বর প্রশ্নের উত্তর দিন। ২.না, যদিনাহয় তবে পরবর্তী ২১ নম্বর প্রশ্নে চলে যান।	
২০. আপনি কত ব্যথা অনুভব করেন? **VAS** (০-১০)		
ঙ. মেঝ/টয়লেট পরিষ্কার		
২১. আপনাকে কি আপনার বাসায় মেঝ/টয়লেট পরিষ্কার করতে হয়?	১.হ্যাঁ, যদিহ্যাঁহয় তবে নিচেরপ্রশ্নগুলোর উত্তর দিন। ২.না-আমাকে অন্য কেউ সাহায্য করে যদিনাহয় তবে পরবর্তী **চ** অংশে চলে যান।	
২২.মেঝ/টয়লেট পরিষ্কার করার সময় আপনার শারিরীক অঙ্গভঙ্গি	১.নিচে বসে ২.ঝুঁকে ৩.দাঁড়িয়ে ৪.চেয়ারে বসে ৫.অন্যান্য	
২৩. সারাদিনে মেঝ/টয়লেট পরিষ্কার করতে আপনার কত সময় ব্যয় হয়		
২৪.আপনি কি মেঝ/টয়লেট পরিষ্কার করার সময় ব্যথা অনুভব করেন	১. হ্যাঁ, যদিহ্যাঁহয় তবে নিচের ২৫ নম্বর প্রশ্নের উত্তর দিন। ২.না, যদিনাহয় তবে পরবর্তী ২৬ নম্বর প্রশ্নে চলে যান।	
২৫. আপনি কত ব্যথা অনুভব করেন? **VAS** (০-১০)		

চ. ভারী বস্তু উত্তোলন		
২৬. আপনাকে কি আপনার বাসায় ভারী বস্তু উত্তোলনকরতে হয়?	১.হ্যাঁ, যদিহ্যাঁহয় তবে নিচেরপ্রশ্নগুলোর উত্তর দিন। ২.না-আমাকে অন্য কেউ সাহায্য করে যদিনাহয় তবে পরবর্তী ছ অংশে চলে যান।	
২৭. সারাদিনে ভারী বস্তু উত্তোলনে আপনার কত সময় ব্যয় হয়		
২৮. কত ওজনেরভারী বস্তু উত্তোলনকরতে হয়		
২৯.আপনি কি ভারী বস্তু উত্তোলন করার সময় ব্যথা অনুভব করেন	১. হ্যাঁ, যদিহ্যাঁহয় তবে নিচের ৩০ নম্বর প্রশ্নের উত্তর দিন। ২.না, যদিনাহয় তবে পরবর্তী ৩১ নম্বর প্রশ্নে চলে যান।	
৩০. আপনি কত ব্যথা অনুভব করেন? **VAS** (০-১০)		
ছ. ভারী বস্তু বহন		
৩১. আপনাকে কি আপনার বাসায় ভারী বস্তু বহন করতে হয়?	১.হ্যাঁ, যদিহ্যাঁহয় তবে নিচেরপ্রশ্নগুলোর উত্তর দিন। ২.না-আমাকে অন্য কেউ সাহায্য করে যদিনাহয় তবে পরবর্তী জ অংশে চলে যান।	
৩২. সারাদিনে ভারী বস্তু বহনে আপনার কত সময় ব্যয় হয়		
৩৩. কত ওজনেরভারী বস্তু বহনকরতে হয়		
৩৪.আপনি কি ভারী বস্তু বহনকরার সময় ব্যথা অনুভব করেন	১. হ্যাঁ, যদিহ্যাঁহয় তবে নিচের ৩৫ নম্বর প্রশ্নের উত্তর দিন। ২.না, যদিনাহয় তবে পরবর্তী ৩৬ নম্বর প্রশ্নে চলে যান।	
৩৫. আপনি কত ব্যথা অনুভব করেন? **VAS** (০-১০)		
জ. গৃহপালিত পশু দেখা-শুনা করা		
৩৬. আপনাকে কি আপনার বাসায় গৃহপালিত পশু দেখা-শুনাকরতে হয়?	১.হ্যাঁ, যদিহ্যাঁহয় তবে নিচেরপ্রশ্নগুলোর উত্তর দিন। ২.না-আমাকে অন্য কেউ সাহায্য করে যদিনাহয় তবে পরবর্তী ঝ অংশে চলে যান।	
৩৭.গৃহপালিত পশু দেখা-শুনা করার সময় আপনারশারিরীক অঙ্গভঙ্গি	১.নিচে বসে ২.ঝুঁকে ৩.দাঁড়িয়ে ৪.চেয়ারে বসে ৫.অন্যান্য	
৩৮. সারাদিনে গৃহপালিত পশু দেখা-শুনাকরতে আপনার কত সময় ব্যয় হয়		
৩৯. আপনি কি গৃহপালিত পশু দেখা-শুনা করার সময় ব্যথা অনুভব করেন	১. হ্যাঁ, যদিহ্যাঁহয় তবে নিচের ৪০ নম্বর প্রশ্নের উত্তর দিন। ২.না, যদিনাহয় তবে পরবর্তী ৪১ নম্বর প্রশ্নে চলে যান।	

৪০. আপনি কত ব্যথা অনুভব করেন? **VAS** (০-১০)		
ঝ. পরিবারের যত্ন নেয়া (শারীরিক প্রতিবন্ধী বা সুস্থ্য সদস্যের, সন্তান বা শিশু)		
৪১. আপনাকে কি আপনার বাসায় পরিবারের যত্ন নিতে হয়?	১.হ্যাঁ, যদিহ্যাঁহয় তবে নিচেরপ্রশ্নগুলোর উত্তর দিন। ২.না-আমাকে অন্য কেউ সাহায্য করে যদিনাহয় তবে পরবর্তী ঞ অংশে চলে যান।	
৪২. সারাদিনে পরিবারেরযত্ন নিতে আপনার কতসময় ব্যয় হয়		
৪৩.পরিবারের যত্ন নেওয়ার সময় আপনার শারিরীক অঙ্গভঙ্গি	১.নিচে বসে ২.ঝুঁকে ৩.দাঁড়িয়ে ৪.চেয়ারে বসে ৫.অন্যান্য	
৪৪. আপনি কি পরিবারের যত্ন নেওয়ার সময় ব্যথা অনুভব করেন	১. হ্যাঁ, যদিহ্যাঁহয় তবে নিচের ৪৫ নম্বর প্রশ্নের উত্তর দিন। ২.না, যদিনাহয় তবে পরবর্তী ৪৬ নম্বর প্রশ্নে চলে যান।	
৪৫. আপনি কত ব্যথা অনুভব করেন? **VAS** (০-১০)		

ঞ. সেলাই করাঅথবাবাগানঅথবাবাড়ির কাজ (উদাঃচায়ের দোকান)		
৪৬. আপনাকে কি আপনার বাসায় সেলাই করাবাবাগান করাবাবাড়ির কাজকরতে হয়?	১.হ্যাঁ, যদিহ্যাঁহয় তবে নিচেরপ্রশ্নগুলোর উত্তর দিন। ২.না-আমাকে অন্য কেউ সাহায্য করে যদিনাহয় তবে পরবর্তী ট অংশে চলে যান।	
৪৭. আপনি কোন কাজটি করেন?	১. সেলাই করা ২. বাগা ৩. চায়ের দোকান ৪. অন্যান্য	
৪৮.সেলাই করাবাবাগান করাবাবাড়ির কাজ করারসময় আপনার শারিরীক অঙ্গভঙ্গি	১.নিচে বসে ২.ঝুঁকে ৩.দাঁড়িয়ে ৪.চেয়ারে বসে ৫.অন্যান্য	
৪৯. সারাদিনেসেলাই করাবাবাগান করাবাবাড়ির কাজকরতে আপনার কতসময় ব্যয় হয়		
৫০. আপনি কি সেলাই করাবাবাগান করাবাবাড়ির কাজ করারসময় ব্যথা অনুভব করেন	১. হ্যাঁ, যদিহ্যাঁহয় তবে নিচের ৫১ নম্বর প্রশ্নের উত্তর দিন। ২.না, যদিনাহয় তবে পরবর্তী ৫২ নম্বর প্রশ্নে চলে যান।	
৫১. আপনি কত ব্যথা অনুভব করেন? **VAS** (০-১০)		
ট. মুদীখানার পণ্যদ্রব্য		
৫২. আপনাকে কি মুদীখানার পণ্যদ্রব্য কেনার জন্য যেতে হয়	১.হ্যাঁ, যদিহ্যাঁহয় তবে নিচেরপ্রশ্নগুলোর উত্তর দিন। ২.না-আমাকে অন্য কেউ সাহায্য করে যদিনাহয় তবে পরবর্তী ঠ অংশে চলে যান।	

৫৩. আপনি কিভাবেমুদীখানার পণ্যদ্রব্যকিনতে যান	১.হাটার মাধ্যমে ২.রিক্সার মাধ্যমে ৩.বাসের মাধ্যমে ৪.অন্যান্য	
৫৪. সারাদিনে মুদীখানার পণ্যদ্রব্যকিনতে আপনার কত সময় ব্যয় হয়		
৫৫. আপনি কি মুদীখানার পণ্যদ্রব্যকেনারসময় ব্যথা অনুভব করেন	১. হ্যাঁ, যদিহ্যাঁহয় তবে নিচের ৫৬ নম্বর প্রশ্নের উত্তর দিন। ২.না, যদিনাহয় তবে পরবর্তী ৫৭ নম্বর প্রশ্নে চলে যান।	
৫৬. আপনি কত ব্যথা অনুভব করেন? VAS (০-১০)		
ঠ. অবসর সময়		
৫৭.আপনি কি অবসর সময় কাটান	১.হ্যাঁ, যদিহ্যাঁহয় তবে নিচেরপ্রশ্নগুলোর উত্তর দিন। ২.না-আমাকে অন্য কেউ সাহায্য করে যদিনাহয় তবে পরবর্তী ড অংশে চলে যান।	
৫৮.আপনি কিভাবে অবসর সময় কাটান	১. প্রার্থনা ২. বই পরা ৩. হস্ত-শিল্প করা ৪. টিভি দেখা ৫. গল্প বলা ৬. অন্যান্য	
৫৯.অবসর সময়কাটানো সময়আপনার শারিরীক অঙ্গভঙ্গি	১.নিচে বসে ২.ঝুঁকে ৩.দাঁড়িয়ে ৪.চেয়ারে বসে ৫.অন্যান্য	
৬০. সারাদিনে আপনি কতখানিঅবসর সময় কাটান		
৬১ . আপনি কি অবসর সময় কাটানোরসময় ব্যথা অনুভব করেন	১. হ্যাঁ, যদিহ্যাঁহয় তবে নিচের ৬২ নম্বর প্রশ্নের উত্তর দিন। ২.না, যদিনাহয় তবে পরবর্তী ৬৩ নম্বর প্রশ্নে চলে যান।	
৬২.আপনি কত ব্যথা অনুভব করেন? VAS(০-১০)		
ড. ব্যক্তিগত প্রশ্ন		
৬৩. আপনার পারিবারিক কাজকর্মগুলো কি আপনাকেএকঘেয়ে করে তুলেছে?	১. হ্যাঁ ২.না	
৬৪. আপনার পারিবারিক কাজকর্মগুলো দ্বারা কি আপনিঅবসাদগ্রস্ত?	১. হ্যাঁ ২.না	

Annex IV

Questionnaire (English)

Part 1:Socio-demographic Information

1 Participant ID No		Code
2. Age of participant	years	
3. Marital status	1. Married 2. Divorced 3. Widow 4. Separated	
4. Duration of married life (month/year)		
5. Family structure	1. Nuclear family 2. Joint family	
6.Number of family member		
7. The number of children		
8. Have you any disabled child or family member in your family	1. Yes if yes then -How many disabled child or family member you have: -For how long: 2. No	
9. Place of residence	1. Rural 2. Urban 3. Semi/sub-urban	
10. Educational status		
11. Monthly income		
12. Source of income	1. By own self 2. By husband 3. By children 4. Others	
13. Duration of doing household activities (in months/ years)		
14.Duration of suffering LBP		

Part 2: Household Activities

A. Cooking		**Code**
1. Do you have to cook at your home	1. Yes,if yes then ans the following 2. No- helping person help me If no then go to the next domain B.	
2.Your position during cooking	1. Low sitting 2. Bending 3. Standing 4. Sitting in a chair 5. Others	
3. How much time do you need for cooking in a day		
4.Do you feel pain during cooking	1.Yes, if yes then ans the following 2.No, if no then go to the next Q.no 6	
5. How much pain do you feel in VAS (0-10)		
B. Chopping		
6. Do you have to chop at your home	1. Yes, if yes then ans the following 2. No-helping person help me If no then go to the next domain C.	
7. Your position during chopping	1. Low sitting 2. Sitting in a chair 3.Bending 4.Standing 5. Others	

8. How much time do you need for chopping in a day		
9. Do you feel pain during chopping	1. yes , if yes then ans the following 2. No, if no then go to the next Q.no 11	
10. How much pain do you feel in VAS (0-10)		
C. Wash Dishes		
11. Do you have to wash dishes at your home	1. Yes, if yes then ans the following 2. No-helping person help me If no then go to the next domain D.	
12. Your position for washing dishes	1. Low sitting 2. Bending 3. Sitting in a chair 4. Standing 5.Others	
13.How much time do you need for washing dishes in a day		
14. Do you feel pain during washing dishes	1. Yes, if yes then ans the following 2. No, if no then go to the next Q.no 16	
15. How much pain do you feel in VAS (0-10)		
D. Wash Cloth		
16. Do you have to wash cloth at your home	1. Yes, if yes then ans the following 2. No- helping person help me If no then go to the next domain E.	

17. Your position during washing cloth	1. Bending 2. Low Sitting 3. Sitting in a chair 4. Standing 5. Others	
18. How much time do you need for washing in a day		
19. Do you feel any pain during washing	1.yes, if yes then ans the following 2. No, if no then go to the next Q.no 21	
20. How much pain do you feel in VAS (0-10)		
E. Sweep the Floor/Toilet		
21. Do you have to sweep the floor/clean toilet at home	1.Yes, if yes then 2. No- helping person help me If no then go to the next domain F.	
22.Your position during sweeping floor/clean toilet	1. Bending 2. Low sitting 3. Standing 4. Others	
23.How much time do you need for sweeping/cleaning in a day		
24. Do you feel any pain during sweeping/cleaning	1.yes, if yes then ans the following 2. No, if no then go to the next Q.no 26	
25. How much pain do you feel in VAS (0-10)		

F. Lift heavy objects		
26. Do you have to Lift heavy objects at home	1.Yes,if yes then ans the following 2. No- helping person help me If no then go to the next domain G.	
27. How many times do you need for lifting in a day (in frequency)		
28. How much weight do you have to lift		
29. Do you feel any pain during lifting	1.Yes, if yes then ans the following 2. No, if no then go to the Q.no. 31	
30. How much pain do you feel in VAS (0-10)		
G. Carry Heavy Objects		
31. Do you have to carry heavy objects (e.g. baby, water pot etc.) at home	1.Yes, if yes then ans the following 2.No-helping person help me If no then go to the next domain H.	
32. How much time do you need for carrying in a day		
33. How much weight you have to carry in a day		
34. Do you feel any pain during carrying	1.Yes, if yes then ans the following 2. No, if no then go to the Q.no. 36	
35. How much pain do you feel in		

VAS (0-10)		
H. Look After Cattle		
36. Do you have to look after cattle at your home	1.Yes, if yes then ans the following 2.No-helping person help me If no then go to the next domain I.	
37. Your position during look after	1. Bending 2. Low sitting 3. Sitting in a chair 4. Standing 5. Others	
38. How much time do you need for looking after cattle in a day		
39. Do you feel pain during looking after cattle	1.Yes, if yes then ans the following 2. No, if no then go to the Q.no. 41	
40. How much pain do you feel in VAS (0-10)		
I. Caring for Family (attention to disabled or nondisabled family members, child or baby)		
41. Do you have to caring your family members, child or baby (nondisabled/disabled) at your home	1.Yes, if yes then ans the following 2.No-helping person help me If no then go to the next domain J.	
42. How much time do you need for caring in a day		
43. Your position during caring	1. Bending 2. Low Sitting 3. Sitting in a chair 4. Standing 5. Others	

44. Do feel pain during caring	1.yes, if yes then ans the following 2. No, if no then go to theQ.no 46	
45. How much pain do you feel in VAS (0-10)		
J. Sew or Gardening or home business (e.g. tea stall)		
46.Do you have to do sew or gardening or any home business e.g. tea stall at your home	1.Yes,if yes then ans the following 2. No- helping person help me If no then go to the next domain K.	
47. What you have to do	1. Sew 2. Gardening 3. Tea Stall 4. Others	
48. Your position during sewing or gardening or home business	1. Bending 2. Low Sitting 3. Sitting in a chair 4. Standing 5. Others	
49. How much time do you need for sewing or gardening or at home business in a day		
50. Do you feel pain during sewing or gardening or home business	1. Yes, if yes then ans the following 2. No, if no then go to the next Q.no. 51.	
51. How much pain do you feel in VAS (0-10)		
K. Travel for Groceries		
52. Do you have to travel for	1. Yes, if yes then ans the following	

groceries	2. No- helping person help me If no then go to the next domain L.	
53. How do you travel for groceries	1. By walk 2. By rickshaw 3. By bus 4. Others	
54. How much time do you need for travel in a day		
55. Do you feel any pain during travelling	1. Yes, if yes then ans the following 2. No, if no then go to the next Q.no. 56.	
56. How much pain do you feel in VAS (0-10)		
L. Leisure Time		
57. Do you pass any leisure time at your home	1. Yes, if yes then ans the following 2. No If no then go to the next domain M.	
58. What you do during leisure time	1. Pray 2. Read books 3. Do handicraft 4. Watch TV 5. Gossiping 6. Others	
59. Your position during leisure time	1. Bending 2. Low Sitting 3. Sitting in a chair 4. Standing 5. Others	
60. How long time do you pass		

during your leisure time in a day		
61. Do you feel any pain during your leisure time	1. Yes, if yes then ans the following 2. No, if no then go to the next Q.no.62.	
62. How much pain do you feel in VAS (0-10)		
M. Personal Question		
63. Do you feel monotonous due to your household activities	1. Yes 2. No	
64. Are you thinking that your household activities make you exhausted?	1. Yes 2. No	

Annex V

Approval of Thesis Proposal by Ethics Committee of BHPI

বাংলাদেশ হেল্‌থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)
Bangladesh Health Professions Institute (BHPI)
(The Academic Institute of CRP)

Ref. CRP-BHPI/IRB/02/18/199 Date: 20/2/2018

To,
Asma Arju
Part-II, M.Sc. in Rehabilitation Science (MRS)
Session: 2016-2017, Student ID 1811160056
BHPI, CRP-Savar, Dhaka-1343, Bangladesh

Subject: Approval of the thesis proposal-"Pattern of Household Activities and it's effects on Low Back Pain among Housewives attended for Physiotherapy Treatment at CRP, Savar" by ethics committee

Dear Asma Arju,

Congratulations,

The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to review the thesis title, with yourself, as the Principal Investigator" The Following documents have been reviewed and approved as the reviewed title:

S.N.	Name of Documents
1.	Thesis Proposal
2.	Questionnaire (English and Bangla version)
3.	Information sheet & consent form.

The purpose of the study was to evaluatethe effects of household activities on low back pain in housewives to determine the impact of social environment on low back pain. Since the study involves answering a questionnaire that take about 15-20 minutes, 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 8th 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

CRP-Chapain, Savar, Dhaka-1343, Tel : 7745464-5, 7741404, Fax : 7745099, E-mail : contact@crp-bangladesh.org, www.crp-bangladesh.org

Annex VI

Application of permission to Physiotherapy dept

Date:

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 Center 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, **"Effects of Household Activities on Low Back Pain among housewife patients who attending for physiotherapy treatment at CRP, Savar"** honorable supervisor, Mohammad Alomgir Kabir, Professor of Statistics, Jahangirnagar University, Savar. The purpose of the study is to evaluate the effects of household activities on low back pain in housewives to determine the impact of social environment on low back pain. This study will help to enhance the evidence based practice in Physiotherapy profession and the rehabilitation field as well. Moreover, the preventive aspects of treatment session would ensure throughout the proper rehabilitation for patients with low back pain which would be helpful to lead a good quality of life. 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,

Asma Aju
Part-II, M.Sc. in Rehabilitation Science (MRS)
Session: 2016-2017, Student ID 181160056
BHPI, CRP-Savar, Dhaka-1343, Bangladesh

Approved
04/02/18

22/1/2018

Mohammad Anwar Hossain
Associate Professor & Head

Annex VII

Recommendation Letter

বাংলাদেশ হেল্‌থ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)
Bangladesh Health Professions Institute (BHPI)
(The Academic Institute of CRP)

Ref

Date: 20/02/2018

CRP-BHPI/02/18/0103

To Whom It May Concern

This is to certify that Ms. Asma Arju, a student of M.Sc. in Rehabilitation science at Bangladesh Health Professions Institute (BHPI) under the faculty of Medicine of the University of Dhaka (DU). She has to conduct a thesis entitled, **"Effects of Household Activities on Low Back Pain among female patients who attending for physiotherapy treatment at CRP, Savar"** under thesis supervisor, Mohammad Alomgir Kobir, Professor of Statistics, Jahangirnagor University, Savar, Dhaka. The purpose of the study is to evaluate the effects of household activities on low back pain among housewives. A self-administered questionnaire will be used to collect related information from the participants which will take about 20 to 25 minutes 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. The research proposal has been approved by Institutional Review Board (IRB) of this institute. To accomplish research objectives, she will need to collect data from musculoskeletal unit under physiotherapy department at CRP.

I, therefore, request you to provide her necessary support from the physiotherapy department. I wish her every success in order to accomplish her research.

Best regards.

Muhammad Millat Hossain
Assistant Professor & Course Coordinator
Dept. of Rehabilitation Science
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

চিত্তরঞ্জন সাপাইন, সাভার, ঢাকা-১৩৪৩, বাংলাদেশ, ফোন : ৭৭৪৫৪৬৪-৫, ৭৭৪১৪০৪ ফ্যাক্স : ৭৭৪৫০৬৪
CRP-Chapain, Savar, Dhaka-1343, Tel : 7745464-5, 7741404, Fax : 7745069, E-mail : contact@crp-bangladesh.org, www.crp-bangladesh.org