Identification of the barriers facing by the person with amputation prosthesis users after return to their employment status

By

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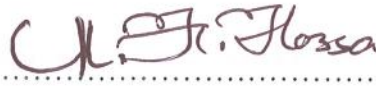
Supervisor's Statement

As supervisor of **Mahmuda Afrin's M.Sc**. Thesis work, I certify that, I consider his thesis **"Identification of the barriers facing by the person with amputation prosthesis service users after returning to their employment status"** to be suitable for examination.



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

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Declaration Form

• This work has not previously been accepted in substance for any degree and is not concurrently submitted in candidature for any degree.

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List of Abbreviation

AKA	Above Knee Amputation
AFO	Ankle Foot Orthosis
BHPI	Bangladesh Health Profession Institute
BKA	Below Knee Amputation
BMRC	Bangladesh Medical Research Council
CRP	Centre for the Rehabilitation of Paralysed
IRB	Institutional Review Board
LCI	Locomotor Capabilities Index
LLA	Lower Limb Amputation
PEQ-MS	Prosthesis Evaluation Questionnaire- Mobility Subscale
TFA	Trans Tibial Amputation
TTA	Trans Femoral Amputation
WHO	World Health Organization

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Abstract

Purpose: The purpose of this study is to identify the barriers those are facing by the persons with amputation using prosthesis fittings after return to their previous employment status and active participations in various social activities in their community after completion of prosthetic rehabilitation patient.

Methodology: The study design was cross-sectional. Total 261 samples were selected conveniently for this study from the Prosthetic and Orthotic department of CRP. Data was collected by using self structured questionnaire by the help of using ICF model. Descriptive statistic was used for data analysis which focused through table, pie chart and bar chart. *Results:* Among the 261 participants 14 (35%) participants were in age group between 15-25 years, 11 (27.5%) were in age group between 26-35 years, 8 (20%) participants were in age group 36-45 years and 7 (17.5%) participants were in age group 18-72 years. There mean age was 34.04±11.582 years. Overall 72.5% participants were between age group 15-35 years and 37.5% participants were between age group 36-55 years. In this study, 29 (72.5%) participants were male and 11 (27.5%) participants were female. Most of the participants 62 (23.8%) are businessmen, 61 (23.4%) were student, 32 (2.7%) were teacher, 29 (11.1%) were job holder , 23(8.8%) farmer and about 18 (45%) people were lived in urban area about 22 (55%) people were lived in rural areas. Of all amputations, 90 (34.5%) were unilateral amputees and 7 (17.5%) were bilateral amputees. Further, 33 (82.5%) unilateral amputees, 23 (57.5%) were right sided and 10 (25%) were left sided amputees. In percentage 28 (70%) were below knee amputation and 12 (30%) were above knee amputation.

Conclusion: From this study it could conclude that the level of functional performance is defer with the age, sex, side and level of prosthesis limb use. This study will the researcher for further study and the health professionals those are involve with treat prosthetic users.

Key wards: Amputation, persons with amputation, barriers, prosthetic rehabilitation, return to employment etc.

CHAPTER I: INTRODUCTION

Background

Amputation is one of the significant causes of permanent disability (Pooja & Sangeeta, 2013). Furthermore, amputation can regularly be related with tension, separation and depression which may change the social and available time exercises of the individual with amputation of lower limb (Deans et al., 2008).

Lower limb amputation is a lasting surgery that has significant practical and sequelae that can impact the daily living activities of the person with amputation (Van Twillert et al., 2014). Despite the fact that restoration plans to address these estimating the impact of these mediations on recovery results of individuals who have had a LLA stays a test (Coffey et al., 2014).

The chose results should be identified with recovery objectives that are explicit to every individual and related with premorbid work (Horne and Neil, 2009). This is astonishing given that amputee restoration programs have shared objectives to improve portability and working through prosthetic fitting to help local area reintegration and to eventually improve the generally useful action of people with a LLA (Zidarov et al., 2009). The most ideal rebuilding of portability and locomotor capacity addresses the foundation of recovery programs (Franchignoni et al., 2007).

Lower limb amputation (LLA) is extraordinary medical procedure (Geertzen et al., 2015). More limited leftover appendages are known to put more noteworthy physiological strain on patients than longer lingering appendages; in any case, there is continuous discussion with regards to whether through-knee amputation are desirable over above-knee amputation (Penn-Barwell et al., 2011).

The most ideal rebuilding of versatility and locomotor capacity is an essential objective of recovery programs following lower appendage removal (Larsson et al., 2009). To precisely analyze the effect of restorative mediations, specifically of prosthetic (Robert, 2008). The degree of the probably sway on a particular patient treated with lower-

appendage removal (LLA) will depend upon an assortment of variables, one of the main ones being the stature of amputation (Penn-Barwell et al., 2011).

The utilization of actual work to forestall and treatment of disease is an old idea, yet as of late has logical proof opened up to help its numerous advantages (Koerber et al., 2008). Similarly, the individuals who face physical or mental difficulties or a mix of these can profit by active work-9as upheld by numerous worldwide wellbeing networks (Al Sofyani et al., 2016).

Amputation may include solitary limbs (one-sided), both the upper or lower limbs (two-sided), or a blend of upper and lower limbs amputation (numerous removals). Amputation might be performed at different anatomical levels (De Laat et al., 2011).

Lower limb amputation may include evacuation of at least one toes, part of the foot, lower leg (disarticulation is the removal of a body part through a joint), trans-tibial (underneath the knee) amputation knee disarticulation, trans-femoral (over the knee) amputation, hip disarticulation and hemi-pelvectomy (expulsion of half of the pelvis). In big time salary nations, dysvascularity is the premier reason for removal; as a culmination most of the amputations include the lower limbs (Ziegler-Graham et al., 2008).

Giving a good, useful prosthesis following lower-limbs amputation is an essential objective of recovery. The goals of this investigation were to depict the pace of fruitful prosthetic fitting; describe prosthetic use after amputation; and decide factors related with more prominent prosthetic fitting, capacity, and fulfillment (Webster et al., 2012).

A connection between the degree of action and prosthetic parts solution was not found. The study shows that an understanding couldn't be found in the prescription rules for any of the researched prosthetic parts (De Laat et al., 2011). The absence of rules that show the rules for endorsing each prosthetic segment could be the sole for those discoveries (Coffey et al., 2014).

By examination, the proof for predominant strolling capacity after more distal and one-sided amputation levels is stronger. This is probably going to be identified with the

expanded energy necessities to walk with above knee and two-sided prostheses (Sansam et al., 2009).

In a mid-range quality article, announced that the presence of stump neuralgia was fundamentally connected with the capacity to utilize prosthesis and stump limb amputation explicitly was not detailed as a prescient factor result measure in past examinations (Van Eijk et al., 2012).

In two separate top notch considers, announced that patients who had early restoration at first made higher engine gains than those people who had later recovery (Stineman et al., 2010).

Also, patients who got intense postoperative inpatient recovery, contrasted with those with no proof of inpatient restoration, had an improved probability of one-year endurance and home release. Prosthetic limb obtainment didn't vary fundamentally between gatherings (Obalum and Okeke, 2009).

A more limited time span among a medical procedure and affirmation for restoration is identified with better strolling potential (Sansam et al., 2009). Essentially, the timeframe taken from a medical procedure to fitting for prosthesis is altogether connected with result, with those standing by longer having more unfortunate strolling capacity at one year . Revealed trans-tibial (TTA) and trans-femoral amputee (TFA) patients were similarly liable to move around autonomously or with help (inside gatherings) at medical clinic release. Between gatherings, in any case, there were huge contrasts dependent on degree of amputation. Patients who went through a minor amputation were bound to move around with or without help (Suckow et al., 2012).

The amputations rates fluctuate essentially both between and inside nations (Awori and Ating, 2007). This is expected to financial and authoritative climate and the clinicians' dynamic (Stineman et al., 2010). The Orthotics and Prosthetics Clients' Review was intended to assess lower-extremity functional status and satisfaction of device identified with arrangement for both children and adults (Razak et al., 2016).

The paces of progress were comparable: 31% and 33% of amputees with trans-tibial (TTA) and trans-femoral (TFA), individually, made portability progress when found in a far reaching inpatient rehabilitation unit (Chalya et al., 2011).

The significance of a intact knee joint for giving the TTA quiet the capacity to get back to undeniable level portability exercises following rehabilitation. Most of studies revealed better walking capacity and greater capacity to accomplish ADLs after unilateral and distal and one-sided amputations contrasted and more proximal or two-sided amputations (Obalum and Okeke, 2009).

Expanded age was related with altogether less prosthetic ambulation and age has a part in prosthetic and functional conclusions however that it ought not limit appointment. (Jawaid et al., 2008).

Get back to employment is a significant objective of recovery after amputation. Employment is related with both extrinsic monetary rewards and characteristic rewards, for example, more noteworthy life satisfaction, more elevated level of exercises, and better in general health (Krause, 2003).

However, it is hard for an individual to draw in with a task after a particularly horrible occasion that outcome in disability. After an actual disability exhaustive recovery for person with actual disability is prominent objective to be implied. So without employment rehabilitations point won't be satisfied. The unemployment rate of amputee patients after injury goes are from 31% to 87% (Chin and Toda, 2016).

In the UK, one out of six individuals who were or had been financially dynamic experienced discrimination in a their employment related sectors (Meager, 1998).

On e study announced that 42 percent report that they have been victimized by an employer or a possible manager. The employment circumstance of Bangladesh isn't straightforwardly practically identical with UK since few disabled persons keep working in standard occupation market after their disability (Malaheem, 2014).

Any kinds of amputation it can be lower limbs or upper limbs is a cataclysmic occasion that outcomes in actual physical disability and impaired capacity of different organ

frameworks. Disabled individuals in Bangladesh are among the most deprived in the public community in their social participations in various activities in the society and also in their employment sectors. Women's are by and large more terrible than men as they are occupied with neglected family household work. (Fanchingnoni, et al. 2007)

As there are no governments managed retirement benefits for disabled individuals and no monetary assistance to remunerate the extra expenses of living with impairments, paid employment is fundamental for their endurance. Scarcely any wounds have such significant and dependable consequences as a amputation.

Amputation frequently happens abruptly and brings about an emotional reorganization of each part of a person's life, driving them to adjust to a totally new way of life (Donnelly, et al. 2004).Cutting a limbs is related with special individual, family and community challenges specifically the test of return back to work (Deans, et al. 2004)

Major lower extremity amputation is a common procedure that results in a profound A shorter time interval between surgery and admission for rehabilitation is related to better walking potential (Sansam et al., 2009). Similarly, the length of time taken from surgery to fitting for a prosthesis is significantly associated with outcome, with those waiting longer having poorer walking ability at one year. Reported trans-tibial (TTA) and trans-femoral amputee (TFA) patients were equally likely to ambulate independently or with assistance (within groups) at hospital discharge. Between groups, however, there were significant differences based on level of amputation. Patients who underwent a minor amputation were more likely to ambulate with or without assistance (Suckow et al., 2012).

change in a patient's life (Chalya et al., 2012). We sought to determine the association between social support and outcomes after amputation. We hypothesized that patients with greater social support will have better post amputation outcomes (Webster et al., 2012).

Justification of the Study/ Purpose of the study

The purpose of this study was to describe the barriers those are facing by the persons with amputation using prosthesis fittings after return to their previous employment status and active participations in various social activities in their community after completion of prosthetic rehabilitation patient. The study helps to find out the discrimination in salary in their employment sectors, discrimination in their friends and family level, and also find out what type of structural changes needs of lower limb amputation patients in their employment environment by activities measurement with prosthesis such as sit to stand, walk, stair up and down, walk outside in different environmental condition etc. In addition, this study aims at demonstrating the importance of adequate prosthetic training or rehabilitation. Finding of this study will be brought to authority concerned for future study.

As indicated by the World Report on Incapacity (2011), distributed by the World Wellbeing Association and the World Bank, there are assessed one billion people with handicaps on the planet. Many persons with disabilities around the world still face considerable barriers to participate in society and also facing so many barriers in their employment environment such as their recent job or return to their previous job.

Individuals with disabilities face more prominent challenges in the society than the normal individuals, because of barriers for getting to administrations that many would underestimate. Individuals with disabilities frequently don't approach nice training, medical care and financial activities.

The lack of availability in transportation, structures, instruction and work are a couple of models that impede people with disabilities in regular day to day existence. As far as giving opportunities for people with disabilities to work, the public authority, public and private area, just as common society, need to guarantee that different legitimate and social barriers to utilize individuals with disabilities are taken out.

Individuals with disabilities have option to work, live autonomously. The beneficial probability a handicap of individuals is regularly overlooked. The ILO (Worldwide Work Association) gauges that this avoidance may cost nations between one to seven percents of its Gross Domestic Product.

Research Question

What are the barriers of person with amputation prosthesis users to return to their employment?

Operational definition

Employment/Job

Employment can be defined by any trade, economic activity and profession in the organized as well as unorganized sector or any occupation by which a person earns their living or any trade that would provide with some monetary wage. Employment also exists in the public, non-profit and household sectors. Employment can be characterized by any exchange, financial activity and calling in the coordinated just as disorderly area or any occupation by which an individual makes money or any exchange that would give some financial pay. Employment likewise exists in the general population, non-benefit and family areas

Amputation

Amputation is the surgical removal of all or part of a limb or extremity such as an arm, leg, foot, hand, toe, or finger. There are many reasons an amputation may be necessary. The most common is poor circulation because of damage or narrowing of the arteries, called peripheral arterial disease. Without adequate blood flow, the body's cells cannot get oxygen and nutrients they need from the bloodstream.

Rehabilitation

Rehabilitation is the process helping individuals regain skills and abilities which have been lost as a result of a serious injury, illness, disease, disorder or incarceration and which may recover slowly. It may need to regain strength, relearn skills or find new ways

Prosthetic rehabilitation

The Prosthetic rehabilitation program provides limb absence rehabilitation for patient who has experienced amputation as a result of various causes like trauma, infection or congenital etc.

Unemployment

Unemployment occurs when people are without work and actively seeking work. The unemployment rate is a measure of the prevalence of unemployment and it is calculated as a percentage by dividing the number of unemployed individuals by all individuals currently in the labor force. According to International Labor Organization report, more than 200 million people globally or 6% of the world's workforce were without a job in 2012 (WHO, 2011).

Unemployment occurs when a person who is actively searching for employment is unable to find work. Unemployment is often used as a measure of the health of the economy. The most frequently cited measure of unemployment is the unemployment rate. This is the number of unemployed persons divided by the number of people? in a country? Or here the ratio unemployed persons with amputation: persons with amputation.

CHAPTER II: LITERATURE REVIEW

According to the World Report on Disability (2011), published by the World Health Organization and the World Bank, there are estimated one billion persons with disabilities in the world. Many persons with disabilities around the world still face significant barriers to take part in society. People with disabilities face greater difficulties in society than the average population, due to barriers for accessing services that many would take for granted. People with disabilities often do not have access to upright education, health care and economic activities. The lack of accessibility in transportation, buildings, education and employment are a few examples that hinder persons with disabilities in everyday life. In terms of giving opportunities for persons with disabilities to work, the government, public and private sector, as well as civil society, need to ensure that various legal and social barriers to employ people with disabilities are removed. people with disabilities have right to work, live independently, and get opportunities of personal development excluding persons with disabilities form the world of work has a cost for the society-amongst others: the productive potential of people with disabilities are often ignored.

Bangladesh is a low-and-middle-income-country with a population of 160 million. Incidence rate of lower limb amputation in Bangladesh is largely unknown except a study published in 1997 that reviewed 6 years-worth of data from one district and estimated incidence rate to be 75 per 100,000 populations (Aftabuddin et al., 1997). The authors (Aftabuddin et al., 1997) reported that 80% of these cases were consequences of limb ischemia. A high pace of urbanization, developed modes of motorized transportation, and poor road conditions were identified as some factors leading to higher number of road accidents resulting in amputation (Kim et al., 1996)

According to World Health Organization (WHO) estimates, the number of people who suffer from non-fatal injuries are about 20–30 times more relative to fatalities in developing countries. WHO also reported that there are 21,316 fatalities from road accidents in Bangladesh. Thus, it can be estimated that about 426,320–639,480 people suffer from road traffic related injuries annually in Bangladesh. (Aftabuddin et al., 1997) Road traffic accident has been reported as a leading cause of amputation in India and Nigeria. Moreover, peripheral vascular diseases—a common cause of limb amputation, is highly prevalent (70%) in low-and-middle-income-countries and the number of people with these diseases are increasing rapidly (Fowkes et al., 2000).

Additionally who are survivors confronting numerous medical issues and various complexities influencing their normal exercises? People with removal wounds confronting loads of challenges for the duration of their life. All in all amputation is a cataclysmic occasions those outcomes in actual handicap and weakened capacity of different organ frameworks (Taly et al., 2001).

A person with disability can be employed in certain jobs before full recovery occurs. The recent progresses made in disability rehabilitation techniques include employment as an integral part of treatment and rehabilitation process; to accomplish a successful rehabilitation program, a person with disability should be engaged in a work which provides a positive feeling of “self efficacy” which ultimately counters the negative feelings of “helplessness” (Ainspan & Penk .,2008).

It is indeed very challenging for an amputee to accomplish all the tasks he or she used to perform prior to disability. To help overcome some of these challenges, the employers have an important role to play. Certain work modifications can help workers with disability to continue working and contribute meaningfully to the society and economy (Girdhar et al., 2001).

Effect of Amputation

Cutting limbs is very serious and life threatening situation which may creates severe disability and traumatic injuries are responsible for this kinds of amputation and amputation is the consequence of this traumatic injuries. The most widely recognized causes are intrinsic nonattendance, blood vessel illness, street car crash (RTA, frostbite, wound disease, tumble from tree, bull assault, conveying weighty weight, sports injury, driven on shallow water and so on (Fowkes et al.,2000). Additionally who are survivors confronting numerous medical issues and various complexities influencing their normal exercises? People with removal wounds confronting loads of challenges for the duration of their life. All in all Spinal Rope Injury is a cataclysmic occasions that outcome in actual handicap and weakened capacity of different organ frameworks (Taly et al., 2001).

About Rehabilitation

Rehabilitation is the cycle assisting people with recapturing abilities and capacities which have been lost because of a genuine physical issue, sickness, infection, disorder or detainment and which may recuperate gradually. People may have to recapture strength, relearn abilities or find better approaches for doing things that they did previously. The drawn out objective of recovery of person who experience a removal is local area reintegration with the most ideal practical autonomy and a re-visitation of their past way of life (Awori et al., 2007).

Getting back to work is a noticeable objective of restoration after an amputation. Employment is related with both extraneous financial rewards and inborn rewards, for example, more prominent life fulfillment, more elevated level of activities, and better by and large wellbeing (Krause et al., 2010).

According to rehabilitation guideline the social specialist is an individual from the after amputation rehabilitation group. He/She will help amputee patients contact local area

administrations, plan for release and get back to home and local community. The social laborer is an advisor who will uphold amputee customers just as their family in enthusiastic change and adapting. Likewise a social specialist encourages an amputee patient to include with a task or preparing. CRP have social specialists however insufficient labor.

From a social perspective, get back to work following amputation is viewed as quite possibly the main results of reintegration in the community area. It gives a people to economic wellbeing and significance to life, and empowers them to be monetarily free (Schonherr et al., 2005). An amputation after injury is only one illustration of a horrible physical issue that requires cautious wanting to guarantee satisfactory help all through the individual's life. In addition to the actual effect of the injury, the patient and their family will make social, professional, financial, and passionate changes following an amputation after injury (Kahle et al, 2016).

Community Reintegration

Community reintegration as "a term utilized in human assistance fields to allude to being important for the standard of family and community life, releasing ordinary jobs and duties, and being a functioning and contributing individual from their social gatherings and of society in general". Reintegration in work, relaxation and sports exercises following amputation is viewed as a significant objective of restoration. (Kendel et al., 2016)

Dynamic association in exercises and jobs is firmly identified with wellbeing and prosperity and an undeniable degree of social exercises prompts a superior personal satisfaction. Getting back to paid work is viewed as quite possibly the main results of reintegration in the public arena following a spinal string injury. It gives individuals a societal position and importance to life making them all the more monetarily free. Rates of achievement have fluctuated from 25 to 48% in distributions from different nations in the most recent many years (Schonherr et al.,2004).

Employment

Employment can be characterized by any exchange, financial movement and calling in the coordinated just as disorderly area or any occupation by which an individual makes money or any exchange that would give some financial compensation. Employment additionally exists in people in general, non-benefit and family unit areas. (Ramakrishnan et al., 2011).

One of the most important goal for a person with amputation is employment is quite possibly, particularly in cases in which an individual is the just procuring individual from the family. It assists with accomplishing monetary independence as well as related with self-awareness, handicap change, social mix and life fulfillment. Work gives individuals economic wellbeing and significance of life (Schonherr et al., 2005).

Work is perhaps the primary goals for an individual with amputation, especially in cases in which an individual is the simply acquiring individual from the family. One ongoing survey of studies distributed somewhere in the range of 1992 and 2005 inferred that roughly 40% of working age individuals >12 months post-injury were utilized at the hour of information assortment (Ramakrishnan et al., 2011).

As per Community for Administrations and Data on Handicap, 2002, In Bangladesh, about 68% of the utilized individuals with incapacities couldn't make any reserve funds toward the finish of a working month; the entirety of their pay typically spent for addressing various necessities. 28% were utilized for incapacity related costs like assistive gadget systems for upkeeps, helpful administrations, medication, steady hands and extraordinary methods of movement.

Commitment in occupation is a piece of rehabilitation. In developing nations, the vast majority with amputation profit by satisfactory clinical administration followed by thorough recovery. Consequently a generous number of people will wish to get back to pre-sullen beneficial exercises, for example, productive work or instructive preparing. (Narayanan et al.,2016).

Connecting with the amputee patients in effective exercises and creation that is the recovery (Noreau, et al., 1999). Work insight before amputation, conjugal status and time since injury are other significant elements of restoration of amputation patients. The territories and seriousness of wounds are answerable for commitment in recovery program. Along these lines, the rehabilitation may change by those critical components (Tashkandi, 2011).

Employment rate after amputation

The drawn out objective of rehabilitation of people who experience of prosthesis service fitting after amputation in community reintegration with the most ideal practical freedom and a return to their previous job life and personal life in the community (Amaefula et al., 2015)

Berkowitz analyzed time until work for person with amputation who are using prosthesis service among an example of 500 members, detailing that it took a normal of 3.8 years to get back to beneficial employment (Krause, 2003).

In Malaysia it is discovered that those amputee patients who were hospitalized over the most recent 1 year, less inclined to work. This lone contrasted hospitalization related with spinal injury, for example, urinary plot disease and pressing factor ulcer. In any case, looking at the effect of co-horrible ailments, similar to diabetes mellitus and hypertension, didn't locate any huge distinction on business result. So those patients experience issues to take an interest in effective work in community reintegration measure (Ramakrishnan et al., 2011).

In Bangladesh a great many people with handicaps live in the provincial zones. A larger part of individuals with handicaps, incorporating those with an extreme degree of inability has the certainty to procure training and participate in monetarily profitable contributing exercises empowering them as powerful givers (Largo, 2015).

The greater part of the amputee patients who are inside the typical working ages (between 18–64) feel equipped for working, are persuaded to work, and don't consider disincentives to be huge boundaries to business.

To begin with, more than 70% of the members felt they had adequate instruction or preparing to be utilized, and 55% revealed they had all the vital assets to keep a customary occupation for example transportation and partners. (Krause et al., 2011) The investigation revealed that people with amputee who have had a past work, re-incorporated once again into employment effectively subsequent to finishing restoration however they confronting such countless obstructions in their general public during interest and just as their work environment (Kendell et al., 2016).

Unemployment Rate after Amputation

The unemployment rate of amputation clients after injury ranges from 31% to 87%. One study identified the coping patterns of amputee victims and found that role dissatisfaction was a commonly reported problem. (Chan et al., 2005).

In the UK, one out of six individuals who were or had been financially dynamic experienced separation in a employment related setting (Measer, 1998).

Of these, by a business or an expected boss 42 percent report that they have been victimized. The employment circumstance of Bangladesh isn't straightforwardly equivalent with UK since few handicapped individuals keep working in standard occupation market after their impedance (Malaheem, 2014).

Barriers for Employment

The most well-known barriers identified with injury seriousness (70%), disincentives (55%) and needs for more noteworthy help (55%) (Koerber et al. 2008).

Hence after amputation it isn't workable for them to re-take an interest in their specific positions.

In employment areas the employers focused in on actual attributes instead of on real necessities for the work while thinking about a disable individual for business. They likewise had the issues of obligatory requirement of clinical certificates to go into formal occupation market in Bangladesh (Malaheem, 2014)

Other than this the majority of individuals with disabilities are ignorant and don't have any suitable abilities, so it turns into a test for people to participate in significant occupations (Malaheem, 2014) which may prompt word related hardship, word related foul play, and word related estrangement (Whiteford and Pereira, 2012).

According to (Malaheem, 2014) ,to get suitable work, in profession possibilities, to get proper wages, because of separating demeanor of managers and partners and clinical boundaries in occupation market are the vital obstruction for joblessness for amputee patients in Bangladesh.

In Bangladesh, financial investment is essential for impaired individuals, as there is no government managed retirement for them in Bangladesh. Nonetheless, financial support gets little consideration from specialist co-ops and strategy producers who see incapacity as a clinical issue and spotlight on clinical interventions.

They give little thought to social and monetary help for disabled individuals. A couple of Non-Governmental Organizations (NGOs) give preparing and work to impaired individuals. The Centre for the Rehabilitation of the Paralysed (CRP) is the solitary association in Bangladesh to offer specific types of assistance for individuals with prosthetic service user’s amputation.

CRP centers around the entire individual instead of treating the individual's impairment alone. Intercessions of CRP incorporate treatment inside clinic, just as social and monetary restoration locally (Horne, 2009). CRP has set up a professional foundation for patients with incapacities and offers distinctive preparing to patients to participating in deliberate word related in the wake of getting back to the community.

The midway lodging is situated on the CRP grounds and is intended to repeat the home environment on release. The point of the program is to encourage autonomy and adapting abilities in an individual with amputation in anticipation of fruitful mix into the community.

Significant lower extremity amputation is a typical strategy that outcomes in a significant change in a patient's life (Chalya et al., 2012). We looked to decide the relationship between social help and results after amputation. We hypothesized that patients with more prominent social help will have better post amputation results (Webster et al., 2012).

One of the essential objectives of recovery following lower-extremity amputation is the fruitful fitting of a prosthesis and utilization of the prosthesis to accomplish utilitarian portability (Kahle et al. 2016). More prominent prosthesis use has been related with more elevated levels of capacity and autonomy through developed self-care and versatility just as improved apparent personal satisfaction and business achievement (Sansam et al., 2009).

Fulfillment with both the useful utility and corrective appearance of the prosthesis is likewise a significant result of prosthetic rebuilding (Highsmith et al., 2016). To augment results following lower-extremity amputation, it is crucial for better appreciate the variables that influence both prosthesis use and fulfillment, especially any modifiable elements that may be focused in restoration interventions (Webster et al., 2012).

There is no agreement on the most proper result measure for patients with a lower-extremity amputation, and a wide cluster has been utilized in past investigations (Coffey et al., 2014). The result estimates remembered for this investigation were utilized exclusively on the grounds that they best permitted the pooling of information (Penn-Barwell et al., 2011). The solitary outcome measure in this investigation that is very much approved and that joins actual working, job constraint, energy, pain and impression of health and is accordingly viewed as the central result measure (AlSofyani et al., 2016).

Some 82.9% of those with lower limb amputation in Scotland lose an appendage because of peripheral vascular illness, with 38.6% of this gathering having amputation because of diabetes (Desmond, 2007).

Another significant factor is the normal age of the lower limb amputee population; the Scottish amputee population is transcendently elderly with around 80% of essential amputees more than 60 and over 20% more than 80 (Verghese et al., 2008).
On those going to a sub-provincial English appendage centre, with trans-tibial amputation representing 50.5% and trans-femoral 49.5% of the vascular or diabetic cases (87.5% of the absolute amputee population) (Desmond, 2010).

These socioeconomics give a sign of the low preoperative action levels likely in this gathering, and recommend that post-operative action levels may likewise be decreased (Van Eijk et al., 2012).
Following on from this, discovered that actual versatility was the solitary free factor which altogether influenced personal satisfaction in amputees as estimated by the Nottingham Wellbeing Profile and when contrasted and their nondisabled partners (Chin and Toda., 2016).

In light of this novel exploration, one can guess that production of pre-usable and post-usable customized action projects will eventually lessen the occurrence of removal by the decrease of metabolic issues, for example, diabetes (Vrieling et al., 2008).

For proper lower limb prosthetic segments remedy, the determination should coordinate the prosthetic wearer's movement level (Malaheem, 2014).
In this unique situation, prosthetic wearer's movement level depicts an amputee's practical status and is recognized from the patients' self-report just as the utilization of portability scales (Chalya et al., 2012).

Amputation because of injury is moderately uncommon and is the reason for just 10–20% of lower-limb misfortune in the created world (Kahle et al., 2016). Roughly 55% of non military personnel LLA for injury are BKA, 40% otherwise known as and 1% bilateral amputation. On account of the low rate of reciprocal removal, most investigations enroll low quantities of these amputees (Amaefula et al., 2015).

Pain and amputation require little clarification; the capacity to walk 500 meter and the term of every day prosthesis are more subtle measures (Kendell et al., 2016).

The capacity to walk a distance comparable to around 500 meter has been recognized as a vital limit to empower autonomous living and was utilized as it was conceivable to gather information across a scope of studies, dissimilar to the wide scope of different proportions of versatility that were likewise utilized (Christiansen et al., 2015).

Prosthesis use is generally viewed as a result measure since it is accepted to be a substitute marker of the degree of recovery and stump wellbeing however has not been approved in that capacity (Penn-Barwell et al., 2011).

Social Participation Barrier

As per the constitution of Bangladesh (2013), all residents have the privilege in the society to make the most of their respect, fundamental basic rights and have social uniformity and social investment. It alludes to individuals' social contribution and collaboration with others locally. Social interest are those exercises embraced in and outside of the house, that empowers the person to meet with others, add to society and stay engaged with society (Aftabuddin et al., 1997).

Activities like positions, business, sports, and sporting exercises are on the whole types of social support. Regular social investment was named an in any event week after week family or well disposed relationship exercises outside the family, church or strict activities like administrations, panels or ensembles, sports or proactive tasks with others, and option sporting exercises including others, including pastimes, elective games (Girdhar, 2001).

The full participation of persons with amputation benefits society as their individual contributions enrich all spheres of life. Their participation is an integral part of individuals‟ and society's well-being and will benefit society for all with or without disabilities (Horne, 2007).

The law has alluded to barrier free developments for people with amputation prosthetic fitting users. This incorporates equivalent admittance to every social action/administrations, for example, foundation, correspondence, transportation, data, and innovation. People with amputation are not totally occupied with exercises because of the circumstance in Bangladesh.

Attitude towards persons with amputation in Bangladesh

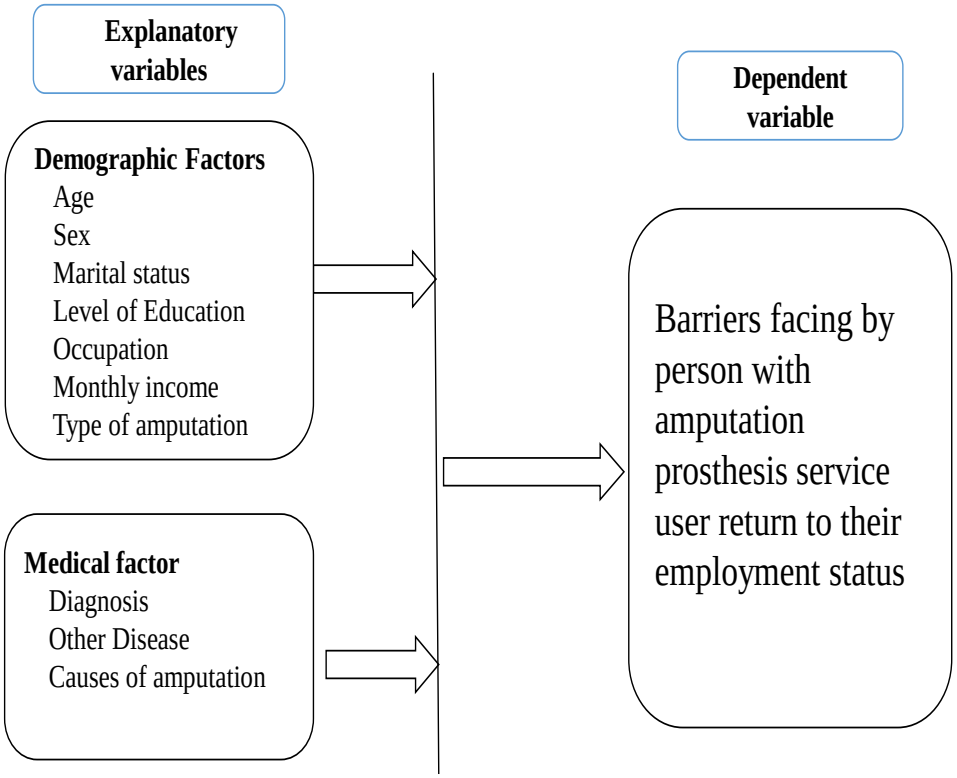
Person with amputation are rarely tended to by their genuine names and rather they are called by their disability in its rudest and cruelest interpretation. They are additionally barred from social projects, local area exercises, diversion, games, aggregate occasions and so on. They have been either won't or debilitate in accessing any sporting occasions like films, theaters, parks and so on These individuals have indeed been avoided with regards to the cycle of social association and standard turn of events (Maqsood et al., 2015).

The World Bank assesses that disabled persons make up 15-20% of the poor in non-industrial nations. Neediness has been viewed as a central point, for example, circumstance. And yet the various mentalities and feelings of individuals in families and in networks, additionally have massive impacts in establishing such impairing conditions (Malaheem, 2014). Thus, a great many people with amputation experience the ill effects of disappointment and have a feeling of inadequacy as a result of their limit.

There is a disposition of neglect in regards to their work, social participation in various social activities, tutoring, food and garments which might be shared inconsistent. They are additionally detached from partaking in sporting and diversion occasions (Jawaid et al., 2008). Along these lines, social change is required on numerous levels to make genuine change. Then again, attitudinal changes of the community area are one of these progressions that will improve the interest amputation individuals and their admittance to rise to rights in the public area.

CHAPTER III: RESEARCH METHODOLOGY

Conceptual Frame work:



Study Objectives

General Objectives

• To identify the barriers of amputee prosthesis users after return to employment status

Specific objectives

• To identify the socio economic characteristics of the prosthesis users.

• To explore the barriers in physical and psychosocial aspect and social participations perceived by the person with amputee prosthesis users.

Study design

A quantitatative, cross sectional study is selected for conduct the study who completed their rehabilitation service and gait training in between January 2016 to January 2019. A cross-sectional study is a descriptive study in which disease and exposure status is measured simultaneously in a given population and the most important advantage are that it is quick and cheap. This study was took a snap shot about the job status and distributions of related variables of the people with amputation who are facing barriers in their employment.

Study population and sampling

This study is conducted on amputation patient of the department of Prosthetics and Orthotics of the Centre for the Rehabilitation of the Paralysed (Savar), Dhaka. Hospitals random sampling procedure were applied. Sampling refers to the process of selecting the subjects/individual. A population refers to the entire group of people or items that meet the criteria set by the researcher. Amputee patient with prosthetic rehabilitation is the study population and sample is taken by using hospital random sampling technique due to time limitation, this current pandemic situation of the world and to perform easily. This technique was more feasible, less time consuming and less expensive to obtain relevant information.

Study area/site

This study is conducted on amputation patient at the department of Prosthetics and Orthotics of the Centre for the Rehabilitation of the Paralysed (Savar). At first we take information from CRP about the individual completed rehabilitation services from January 2016 to June 2019. Specially follow up patient were taken for data collection purpose on the basis of database. Individual profile with amputee patient was considered from existing database of CRP.

Study period

From November 2019 to March 2020.

Inclusion and Exclusion Criteria

Inclusion Criteria

1. Patient who have completed rehabilitation from CRP in-between January 2016 to January 2019
2. Amputee patient(both upper and lower limbs)
3. Age range 18-72 years
4. Male and female
5. Patient who received gait training programme

Exclusion criteria

I. Age range less than 18 or more than 72 years.
II. Patients who aren't complete rehabilitation programme
III. Who are not interest to take part in this study
IV. Patient with cognitive problem.
V. Any Contraindication are found-
    i. Metabolic disease (DM) and
    ii. Malignancy

Sampling technique

Sampling Individuals prosthesis user amputee patient who have completed rehabilitation from CRP and now living in the community in-between January 2016 to June 2019.

Method Hospitals random sampling technique. The access of data is difficult to fulfill the objectives. Hospital random sampling was used for easy to access a particular subset of people from large population.

Data collection tools/materials

Data collection methods, instruments & tools

1. Self administered questionnaire format was used for the survey based on ICF model.
2. Collected data through face to face conversation with the participant's at P & O department and some data by over phone call.

At first collected data from CRP that will be matched with research objectives. By using hospitals sampling technique I was collected information from patients who came for follow up of prosthesis fittings. For information collection from sample population, we researcher was used a self administered questionnaire.

Questionnaire Development

A questionnaire was developed for the study purpose based on the literature review and with the evaluation of my supervisor. For linguistic validation of a questionnaire the questionnaire was translated into Bengali in the following way. We used a set of questionnaires with the demographic and socioeconomic information. The questionnaire was in the English language therefore it will important to translate the questionnaires into Bengali to ensure the participant comprehended and understood the questions easily as all the respondent was bangali. Each questionnaire was translated from English to Bengali for 2 times by experienced translators. From the set of two different copies of Bengali questionnaire was formed by taking easy and similar part of the questionnaire. This is known as forward translation. From the forward translation an English translation was done by a different translator who had experience in the field of translating. Finally the copy was compared with the main questionnaire. After checking and rechecking the formulation of the final questionnaire was completed. A field test of the questionnaire was conducted to check the tools in the actual fields. The purpose of the field test was developed which information was collected is it appropriate with the objectives or not. Filed test was also important for identify the gaps and situation where improvement will be needed.

Pilot Study

A pilot survey was conducted for rectify for questionnaire. After starting data collection I collected data from 15 patients. During asking question there were lots of gaps in variables in my questionnaire. I got too many feedback answer from patient on basis of their needs. Then I correct all gaps and faults in my questionnaire and established a questionnaire for finally collect my data. Finally my questionnaire was rectified according to pilot study.

Data Analysis Process

In this study we have used a self administered questionnaire format to the participation with post rehabilitation person with amputation with some demographic and socio-economic factors to investigate the objectives of this study. After completing data collection data were inputted in the computer for analysis using the SPSS (Statistical Package for the Social Sciences) software, version 20.0 and also used Pearson Chi-Square test, and Binary logistic regression model were used to analyze and find out the relation between independent and dependent variables.

Data management and analysis

Data analysis

- Data were analyzed by using SPSS software version 20 and Microsoft excel 2013

Quality control and quality assurance

All data were collected was accurate and interpreted carefully according to supervisor guideline. Ensure that the using methods which had been validated as fit for the purpose before use the test. This method was fully documented, data collector was trained and control mechanism was present to ensure that the procedures under statically control. Ensure that it was implied appropriate internal quality control measures and ensure that the data produced and reported were of known quality and uncertainty.

Ethical consideration

The research proposal was submitted to the Institutional Review Board (IRB) of Bangladesh Health Profession Institute (BHPI) and after defense there was approved by was taken from the IRB. The proposal was reviewed by the ethical board/committee of CRP and it will be approved by BHPI, the academic institute of Dhaka University. A written information sheet was provided 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. Participants were also free to decline or withdraw in participating in the study. It has been adhered to that data the could have was only accessed by the researcher and my supervisor of this study. Confidentiality was maintained strictly during the course of study and during every step of the research. 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. They were also informed that confidentiality was maintained regarding their information. It was assured to the participant that their name or address would not be used. The participant were also be informed or given notice that the research result would not be harmful for them.

Self structured questionnaires are used to collect primary data, data collection are divided in two phages, in main phase when they are came to follow up their prosthesis and give their interview face to face.

CHAPTER-IV RESULT

4. Socio-demographic information

4.1 Univariate Analysis

4.1.1 Age of the participants

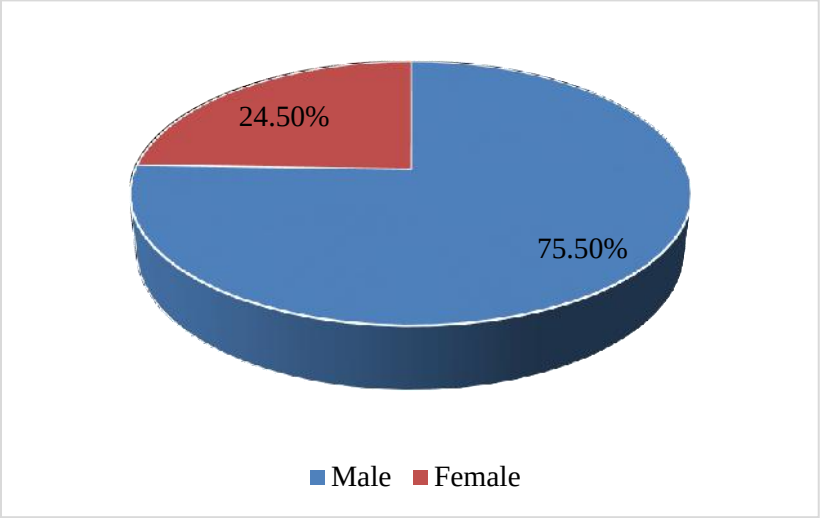
Table 4.1.1: Age of the participants

Total participants	Mean (±SD)	Minimum	Maximum
261	34.04 (±11.582) years	18 years	72 years

In above table the total number of 261 persons with amputation residing in Bangladesh participated in this study. The mean (±SD) score for all the participants were 34.04 (±11.582) years. The minimum age of the participants was 18 years and a person with maximum age was 72 years.

4.1.2 Gender of the participants

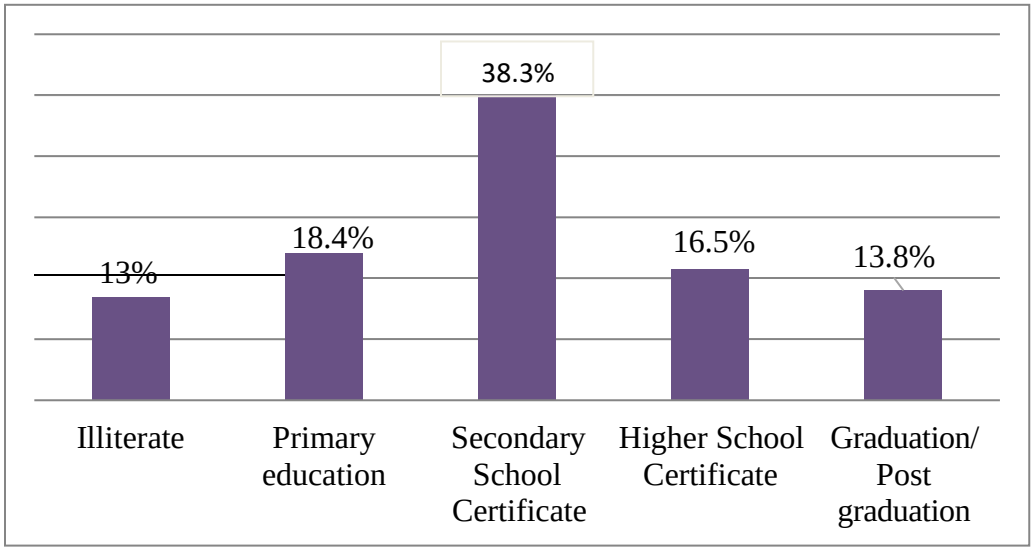
Figure 4.1.2: Gender of the participants.



In above table among all the 261 participants 75.5% (n=197) were male and only 24.5% (n=64) were female.

4.1.3 Educational Status of the participants

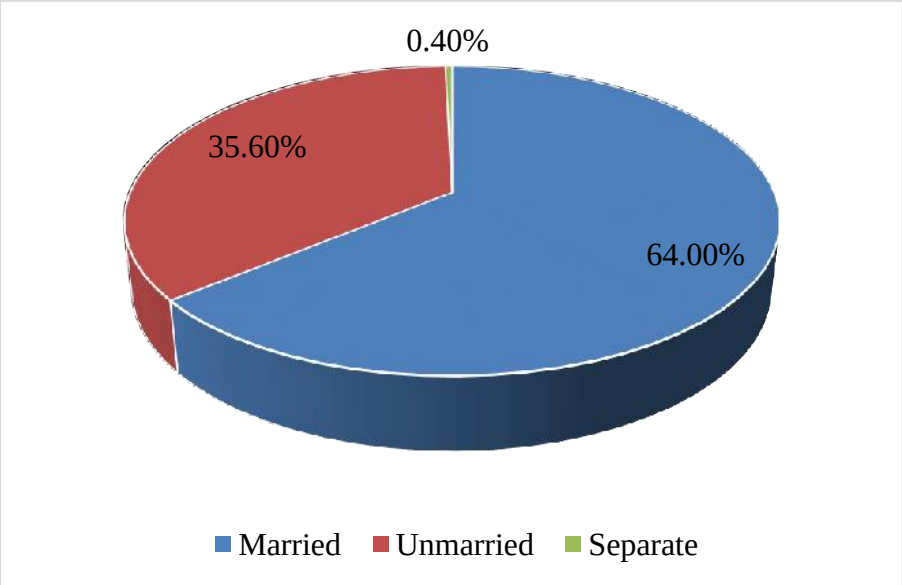
Figure 4.1.3: Educational status of the participants.



In this above table study finding suggest that among of the total participants 13% (n=34) were totally illiterate, 18.4% (n=48) of the participants had only primary education, 38.3% (n=100) had passed Secondary School Certificate, 16.5% Higher secondary level education and only 13.8% (n=36) participants had graduation and/or post-graduation level education.

4.1.4 Marital Status of the participants

Figure 4.1.4: Marital status of the participants.



In this above figure among 261 participants, 64.0% (n=167) were married, 23.3% (n=93) were unmarried and only 0.40% (n=1) was separated.

4.1. 5 Occupation of the participants before amputation

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Table 4.1.5: Occupation of the participants

Professions	Frequency	Percentage
Farmer	23	8.8%
Student	61	23.4%
Job holder	29	11.1%
Business	62	23.8%
Driver/contractor	19	7.3%
Day labor	27	10.3%
Housewife	32	12.3%
Teacher	7	2.7%
Garments worker	1	.4%
	Total= 261	

In the above query of professional status of the participants before amputee, the information came are as follows 8.8% (n=23)of them were farmer, 23.4% (n=61) of them were student, 11.1% (n=29) had a job, 23.8% (n=62) were businessman, 7.3% (n=21) were driver/contractor, 10.3% (n=19) were day labor, 12.3% (n=27) of them were housewife, 2.7% (n=32) were teacher and only .4% (n=1) was garments worker

4.1.6 Occupation of the participants after amputation

Table 4.1.6: Occupation of the participants

Conditions	Frequency	Percentage
Unemployment	71	27.2%
Same occupation	132	50.6%
Others	58	22.2%

Among the 261 participants 27.2% (n=71) are not currently employed and nearly 50.6% of them have the same occupation as like as before where 22.22% (n=58) responded as others.

4.1.7 Monthly income of the participants

Table 4.1.7 : Monthly income of the participants

Time	Mean (±SD)	Z-test	P-value	Significance
Before amputee	8545 (±9215) Taka	9.04	.000	Significant
After amputee	4241 (±6158) Taka			

Before amputation the mean (±SD) of monthly income of the participants was 8545 (±9215) Taka. Whereas, after amputation the mean (±SD) of monthly income of the participants became like 4241 (±6158) Taka. The z-test score of monthly income before and after amputation was 9.04 and p-value was .000 which indicates statistical significance.

***This is indicated that after amputation the respondent's average monthly income significantly reduced or decreased which is alarming.**

4.1.8 Diagnosis of the participants

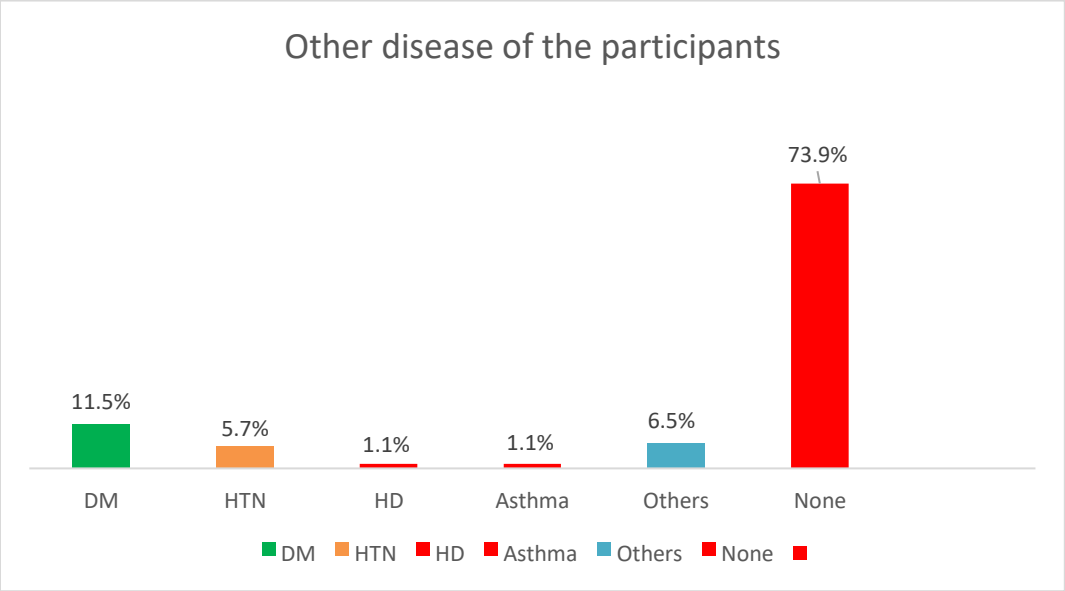
Table 4.1.8: Diagnosis of the participants

Conditions	Frequency	Percentage
Trans-tibial amputation	90	34.5%
Trans-femoral amputation	77	29.5%
B/L AFO	27	10.3%
Others	67	25.7%

Out of the above table total 261 participants highest number of the patients here the percentage of diagnosis trans-tibial was 34.5%, and trans-femoral amputation was 29.5%. Among all the patients Trans-tibial amputation rate of frequency is 90 what is more than all of the diagnosis. And diagnosis Trans-femoral amputation frequency is 77 what is second in frequency. And B/L AFO was lowest in the table where amputation was 10.3% frequency was 27.

4.1. 9 Other diseases of the participants

Figure 4.1.9: Other diseases of the participants.



11.5% (n=30) of the participants had Diabetes Mellitus, 5.7% (n=15) of the participants had hypertension, 1.1% (n=3) had heart disease, and 1.1% (n=3) participants are sufferings from asthma. Where 6.5% (n=17) participants had other problems and 73.9% (n=100) had no other diseases (Figure- 4.1.9).

4.1.10 Causes behind of amputation

Table 4.1.10: Causes behind of amputation

Causes	Frequency	Percentage
Accident (RTA)	191	73.2%
GBS	4	1.5%
By born heart	31	11.9%
Electric shock	4	1.5%
Infection	21	8.0%
Bone tumor	4	1.5%
Stroke	5	1.9%
Polio	1	0.4%

73.2% (n=191) of the participants had accident, 1.5% (n=4) of the participants had GBS, 11.1% (n=31) had by born heart disease problem, and 8.0% (n=21). are sufferings from infectious disease belonged. Where 1.5% (n=4) participants had other bone tumor.

4.2 Bivariate Analysis

4.2.1 Association between sex and working environment barriers

Working environment barriers variable	**Socio-demographic variable**		**Chi-square value**	**df**	**P-value**	**Significance**
	Sex					
Q1	**Male**	**Female**				
None	10	3	19.202	5	.002	**Significant (p<.05)** ✸
Lift	23	5				
Road improvement	81	26				
Toilet better	3	8				
Device improvement	53	24				
Employment	**27**	**6**				
Q5	**Male**	**Female**	16.846	1	.000	**Significant (p<.05)** ✸
Yes	87	10				
No	110	54				

Q1= Type of structural changes

Q5= Discrimination in salary

The above table implies that male and female respondents face different type of environmental structural barriers in their job environment. Chi-square test showed statistically significance as P-value of the test was less than .005. ✸ =**Significant (p<.05)**

***From the P (.000) value of Chi-square test it is evident that the salary between male and female is significant with the women are getting less wage than male for the same type of work**

4.2.2 Association between education and Working environment barrier

Working environment barriers variable	Education (n)					Chi-square value	P-value	Significance
	Illiterate	Primary	SSC	HSC	Graduation/ PG			
Q1						53.205	.000	**Significant (p<.005)**
None	1	1	5	3	3			
Lift	7	5	3	6	7			
Road Improvement	13	13	5	1	12			
Toilet better	0	3	2	4	2			
Device improvement	11	23	21	12	10			
Employment	02	3	19	7	02			

Q1=Type of Structural changes in job environment

From the above table, it is evident that the education level of the respondents and types of structural barrier are significantly associated. That implies that different education level respondents face different type of environmental structural barriers in their job environment. Chi-square test showed statistically significance as P-value of the test was less than .005. ✸ = .000 Significant **(p<.05)**

4.2.3 Association between education and Social participation barrier

Social participation barriers variable	**Education (n)**					**Chi-square value**	**P-value**	**Significance**
	Illiterate	Primary	SSC	HSC	Graduation/ PG			
Q3						11.579	.021*	**Significant (p<.05)**
Yes	29	36	62	33	20			
No	5	12	38	10	16			

Q3 = Barriers to social participation

From the above table, it is evident that the sex of the respondents and types of structural barrier are significantly associated. That implies that different education level respondents face different type of barriers in their social participation. Chi-square test for association between education of the participants and 3rd barrier of social participation showed statistically significance as P-value of the test was less than .005. * = 01 **Significant (p<.05)(n= 261)**

4.2.4 Association between marital status and Working environment barrier

Working environment barriers variable	Education (n)			Chi-square value	P-value	Significance
	Separate	Unmarried	Married			
Q4				25.218	.000*	**Significant (p<.05)**
Yes	0	90	161			
No	1	3	6			

Q4 = Friendly behave of colleagues

Chi-square test for the association between marital status of the participants and Q4 barrier of working environment showed statistically significance as P-value of the test is less than .05.

4.2.5 Association between occupation after amputation and Working environment barrier

Working environment barriers variable	**Occupation after amputation (n)**			**Chi-square value**	**P-value**	**Significance**
Q1	**Not working**	**Same as before**	**Others**			
None	6	5	2	18.48	.047	**Significant (p<.05)**
Lift	13	11	4			
Road improvement	28	49	22			
Toilet better	1	8	2			
Device improvement	12	47	18			
Employment	11	12	10			
Q5	**Not working**	**Same as before**	**Others**	25.682	.000	**Significant (p<.05)**
Yes	2	2	1			
No	69	130	57			
Q6	**Not working**	**Same as before**	**Others**	36.844	.000	**Significant (p<.005)**
Yes	21	38	38			
No	50	94	20			

Q1= Type of structural barrier

Q5= Salary discrimination

Q6= Acceptance in employment sector

*** This indicated that after amputation they are not easily acceptable by their employer. So they suffer from job getting problem that is the employer are not willing to accept them.**

4.2.6 Association between occupation after amputation and Social participation barrier

Chi-square test for association between occupations after amputation and Q4 barrier, barrier of working environment showed statistically significance as P-value of the test was less than .05.

Behavioral changes after using prosthesis	**Occupation after amputation (n)**			**Chi-square value**	**P-value**	**Significance**
Q4	**Not working**	**Same as before**	**Others**			
None	7	15	11	20.362	.009	**Significant (p<.05)** ✸
Negligible	30	54	13			
Acceptable	31	52	25			
Not acceptable	1	11	19			
Intolerant	2	0	0			

Q4 = Behavioral changes in socially

***From the above P (.000) value of Chi-square test it is evident that the behavioral changes in socially and occupation after amputation is significant with the person who get back to their society they facing so many behavioral barriers socially for the same type of work**

4.3 Multivariate Analysis

4.3.1 Binary logistic regression model of dependant (Employment status & social participation barrier) variables with some other independent (Age, sex, education & occupation) variables

Variable	Coefficients β	S.E.	significance	Odds ratio e^{β}	95% Confidence interval for OR	
					Lower limit	Upper limit
Sex (female)	.189	.349	.587	1.208	.610	2.395
Education (Primary)	-.049	.509	.923	.952	.351	2.579
(secondary)	.737	.461	.110	2.090	.847	5.157
(Higher Secondary)	.312	.548	.569	1.366	.467	3.995
(Graduation)	1.242	.538	.021	3.461	1.205	9.943
Age	.014	.013	.282	1.014	.988	1.041
Occupation after amputation (Not working)	-.375	.362	.301	.687	.338	1.398
(Others)	-.329	.376	.381	.719	.344	1.504
Type of structural barrier in employment environment LIFT	2.399	.801	.003	11.008	2.292	52.866
ROAD IMPROVEMENT	1.444	.689	.036	4.236	1.097	16.357
TOILET BETTER DEVICE	1.280	.536	.017	3.596	1.258	10.278
IMPROVEMENT EMPLOYMENT	2.463	1.412	.081	11.735	.738	186.709
	1.392	.561	.013	4.023	1.340	12.081

A binary logistic regression is performed between the dependent variable“Obtaining supportive working environment” with some socio-demographic factors. In the above table the estimated logistic parameters are listed with their corresponding odds ratios and

95% CI. The estimated odds for female respondents getting supportive environment is 1.2 times (20% higher) the estimated odds for male participants. That implies that this research found the female participants getting better and supportive working situations than male.

OR(graduation)=3.461 indicates that, the estimated odds for the subjects who have attended graduation or post-graduation level facing supportive professional situation is 3.461 times that of the illiterate candidates. For each year increase in age, the estimated odds of getting supportive environment increases by 14%(OR=1.014).....

CHAPTER- V DISCUSSION

The purpose of the study was to analyze the barriers of the people with amputation who are using prosthesis and who have completed rehabilitation from the Centre for the Rehabilitation of the Paralysed (CRP) and also to identify demographic characteristic and barriers after return to their employment status.

Among the participants 75.5% (n=197) were male and only 24.5% (n=64) were female of whom the mean (±SD) score for all the participants were 34.04 (±11.582) years.

In Sweden, study showed that male 76% and female 24% (Huang et al., 2016), in Netherland male 77.78% and female 22.22% (Pooja & Sangeeta, 2013)., in Nigeria male participants were 71.42% and female 28.57% (Coffey et al., 2014), in Pakistan male were 75% and female were 25% (Jawaid et al., 2008), in Italy male 66.07% and female 33.93% (Larsson et al., 2009). In Iran male 62.96% and female 37.03% (Sansam et al., 2009). In Jardan, men 25 and women 16 (Malaheem, 2014) and in another study men 29 and women 20 (Salman & Laporte 2010). In UK male 37 and female 38 (Ziegler-Graham et al., 2008), in India, another study was conducted between 30 male and 24 female (Chan et al., 2005).

Another study results recommended that among the participants 79% subjects were man and 21% were women. Other study conducted in Malaysia (Ramakrishnan, 2011) found that men were 83.3% and in India (Gupta, 2011) it was 84%. **It indicates that the major portion of amputation victims in south-east Asia is man.**

From the results of this study it is revealed that two-third of the respondents was injured between 18 and 35 years. The mean age of CRP respondents was 34.04 years, which also similar of the study conducted by Momin (2004).

Bangladesh Literacy Survey (BLS) report, 2010 shows that 57.53% population of Bangladesh are literate and that they can read and write. But in this study finding suggest that among the participants 13% (n=34) of the participants was illiterate, 18.4% (n=48) of

the participants had primary education, 38.3% (n=100) had passed Secondary School Certificate, and Higher secondary certificate belonged to only 16.5% (n=43). Where only 13.8% (n=36) participants had graduation and/or post-graduation.

In this study most of the participants passed Secondary School Certificate. Among the 261 participants 27.2% (n=71) are not employed currently and nearly 50.6% of them have the same occupation as like before where 22.22% (n=58) responded as others.

In this study most of the participants 8.8% (n=23)of them were farmer, 23.4% (n=61) of them were student, 11.1% (n=29) had a job, 23.8% (n=62) were businessman, 7.3% (n=21) were driver/contractor, 10.3% (n=19) were day labor, 12.3% (n=27) of them were housewife, 2.7% (n=32) were teacher and only .4% (n=1) was garments worker

In India, 2% were students, 34% were housewife, and 32% were farmer / laborer, 16.5% were retired, 15.5% were service holder/ businessmen (Pooja & Sangeeta, 2013).

Before amputation the mean (±SD) of monthly income of the participants was 8545 (±9215) Taka. Whereas, after amputation the mean (±SD) of monthly income of the participants became like 4241 (±6158) Taka.

Among all the patients Trans-tibial amputation rate of frequency is 90 and percentage was 34.5% what is more than all of the diagnosis. And diagnosis Trans-femoral amputation frequency is 77 and percentage was 29.7 % what is second in frequency. And the lowest frequency was BL AFO is 27 and frequency was 9.6%.

In another study among 40 of the participants, 33 (82.5%) were unilateral amputees and 7 (17.5%) were bilateral amputees. In 33 (82.5%) unilateral amputees, 23 (57.5%) were right sided and 10 (25%) were left sided amputees. This study showed 28 (70%) were below knee amputation and 12 (30%) were above knee amputation. The analysis showed that 27 (67.5%) prosthetic users able to perform basic activities alone without ambulation aids and 12-13 (30%-32.5%) prosthetic users able to perform advance activities alone without ambulation aids (Larsson et al., 2009)

Limitations

100% accuracy will not be possible in any research so that some limitation may exist. Regarding this study, there were some limitations or barriers to consider the result of the study. The limitation of this study was small sample size and the most vulnerable situation of present pandemic situation. It was taken only 40 samples and could not able to generalize the collecting samples because, there were not adequate subjects and study period was short. The one of major limitation was time. To conduct the research project on this topic, time period was very limited. As the study period was short so the adequate number of sample could not arrange for the study. Time and resources were limited which have a great deal of impact on the study. Convenience sampling often suffers from biases because this method may represent the views of a specific group and not the entire population. In this study sample was conducted at Centre for the Rehabilitation of the paralysed (CRP) which may not represent the whole country. No research has been done before on this topic specifically. So there was little evidence to support the result of this project in the context of Bangladesh.

CHAPTER-VI CONCLUSION AND RECOMMENDATIONS

Conclusion

Amputation is one of the leading causes of poor functioning, hampered daily living activities and a socioeconomic challenge. This is particularly true for developing countries like Bangladesh, where health support system including the rehabilitation system is not within the reach of ordinary people. It is clear that, this destructive condition not only affects the patient but also their family. Bangladesh is a developing country with low socio-economic condition where people are not enough concerned about prosthetic limb and rehabilitation. Health services are not sufficient in the Government and non-government sector. So, most people are not known about prosthetic rehabilitation and they are suffering from lack of proper treatment. Now a day's different private clinics, hospital and ngo's are trying to bring latest prosthetic limb facilities in our country. But many people in our country are not aware about prosthetic limb which can able to them mobile, walk and able to do ADL's by using prosthetic limb. Most of the people are not enough familiar about prosthetic limb and rehabilitation.

Mobility of the person with lower limb amputation is the main problem because of loss of limb and sensory feedback. As a result it strikes the mobility of the amputee very much. For normal mobility and lead life amputee can use prosthetic limb. By prosthetic rehabilitation under responsible physiotherapist amputee can lead a normal life with mobility.

Recommendations

The aim of this study was to assess the barriers of after lower limb prosthetic rehabilitation of amputee patient after return to their employment status at prosthetic and orthotic department of Centre for the Rehabilitation of the Paralyzed (CRP) and the result which found from the study has fulfilled the aim of this research project. The following recommendations are-

I. Should take more samples for generating the result and make more valid and reliable.

II. Should do pilot study to establish the appropriateness of the questionnaire.

III. Sample should collect from different hospital, clinic, institute and organization in different district of Bangladesh to generalize the result.

IV. To find out an effective and efficient result in generalized form, other measurement scale should be used in consideration.

This is a postgraduate study and doing the same study at future level will give more precise output. There were some limitation of this study mentioned at the relevant section; it is recommended to overcome those limitations during further study. So for further study it is strongly recommended to increase sample size with adequate time to generalize the result in all of the lower limb prosthetic patient in Bangladesh for better results and perspectives.

CHAPTER VI REFERENCE

AlSofyani, M.A., AlHarthi, A.S., Farahat, F.M. and Abuznadah, W.T., (2016). Impact of rehabilitation programs on dependency and functional performance of patients with major lower limb amputations. A retrospective chart review in western Saudi Arabia. Saudi Medical Journal, 37(10):1109-1113.

Aftabuddin M, Islam N, Jafar M, et al.(1997) The status of lower limb amputation in Bangladesh: a 6-year review. Surg Today. ;27:130–134.

Ainspan N, Penk W. Returning wars' wounded, injured, and ill. Westport, Conn.: Praeger Security International; 2008

Amaefula, E.T., Owoeye, I.O.G. and Kortor, N.J., (2015). Risk Factors Associated with Limb Amputation in a Referral Hospital in Benue State Nigeria. British Journal of Medicine and Medical Research, 10(10):1-7.

Awori, K.O. and Ating a, J.E.O., (2007). Lower limb amputations at the Kenyatta National Hospital, Nairobi. East African Medical Journal, 84(3):121.

Chin, T. and Toda, M., (2016). Results of prosthetic rehabilitation on managing transtibial vascular amputation with silicone liner after wound closure. Journal of International Medical Research, 44(4):957-967.

Christiansen, C.L., Fields, T., Lev, G., Stephenson, R.O. and Stevens-Lapsley, J.E., (2015). Functional Outcomes after the Prosthetic Training Phase of Rehabilitation after Dysvascular Lower Extremity Amputation. PM&R, 7(11):1118-1126.

Chalya, P.L., Mabula, J.B., Dass, R.M., Ngayomela, I.H., Chandika, A.B., Mbelenge, N. and Gilyoma, J.M., (2012). Major limb amputations: A tertiary hospital experience in northwestern Tanzania. Journal of Orthopaedic Surgery and Research, 7(1):1.

Chalya, P.L., Mabula, J.B., Dass, R.M., Kabangila, R., Jaka, H., Mchembe, M.D., Kataraihya, J.B., Mbelenge, N. and Gilyoma, J.M., (2011). Surgical management of Diabetic foot ulcers: A Tanzanian university teaching hospital experience. BMC Research notes, 4(1):1.

Chalya P, Mabula J, Dass R, et al. (2012) Major limb amputations: a tertiary hospital experience in northwestern Tanzania. J Orthop Surg Res.; 7:18.

Coffey, L., Gallagher, P., Desmond, D. and Ryall, N., (2014). Goal pursuit, goal adjustment, and affective well-being following lower limb amputation. British Journal of Health Psychology, 19(2):409-424.

Deans, S.A., McFadyen, A.K. and Rowe, P.J., (2008). Physical activity and quality of life: A study of a lower-limb amputee population. Prosthetics and Orthotics International, 32(2):186-200.

De Laat, F.A., Rommers, G.M., Geertzen, J.H. and Roorda, L.D., (2011). Construct validity and test-retest reliability of the questionnaire rising and sitting down in lower-limb amputees. Archives of Physical Medicine and Rehabilitation, 92(8):1305-1310.

Desmond, D.M., (2007). Coping, affective distress, and psychosocial adjustment among people with traumatic upper limb amputations. Journal of Psychosomatic Research, 62(1):15-21.

Desmond, D.M. and MacLachlan, M., (2010). Prevalence and characteristics of phantom limb pain and residual limb pain in the long term after upper limb amputation. International Journal of Rehabilitation Research, 33(3):279-282.

Fowkes F, Rudan D, Rudan I, et al.(2000) Comparison of global estimates of prevalence and risk factors for peripheral artery disease in and 2010: a systematic review and analysis. Lancet. 2013;382:1329–1340.

Franchignoni, F., Giordano, A., Ferriero, G., Muñoz, S., Orlandini, D. and Amoresano, A., (2007). Rasch analysis of the Locomotor Capabilities Index-5 in people with lower limb amputation. Prosthetics and Orthotics International, 31(4):394-404.

Franchignoni, F., Monticone, M., Giordano, A. and Rocca, B., (2015). Rasch Validation of the Prosthetic Mobility Questionnaire: A New Outcome Measure for Assessing Mobility in People with Lower Limb Amputation. Journal of Rehabilitation Medicine, 47(5):460-465.

Geertzen, J., van der Linde, H., Rosenbrand, K., Conradi, M., Deckers, J., Koning, J., Rietman, H.S., van der Schaaf, D., van der Ploeg, R., Schapendonk, J. and Schrier, E., (2015). Dutch evidence-based guidelines for amputation and prosthetics of the lower extremity: Rehabilitation process and prosthetics. Part 2. Prosthetics and Orthotics International, 39(5):361-371.

Girdhar A, Mital A, Kephart A, et al. (2001) Design guidelines for accommodating amputees in the workplace. J Occup Rehabil;11:99–118.

Jawaid, M.A.S.O.O.D., Ali, I.R.F.A.N., Kaimkhani, G.M. and Ghulam, M.K., (2008). Current indications for major lower limb amputations at Civil Hospital, Karachi. Pak J Surg, 24(4):228-31.

Highsmith, M.J., Kahle, J.T., Miro, R.M., Orendurff, M.S., Lewandowski, A.L., Orriola, J.J., Sutton, B. and Ertl, J.P., (2016). Prosthetic interventions for people with transtibial amputation: Systematic review and meta-analysis of high-quality prospective literature and systematic reviews. Journal of Rehabilitation Research and Development, 53(2):157-183.

Horne, C.E. and Neil, J.A., (2009). Quality of life in patients with prosthetic legs: a comparison study. JPO: Journal of Prosthetics and Orthotics, 21(3):154-159.

Kahle, J.T., Highsmith, M.J., Schaepper, H., Johannesson, A., Orendurff, M.S. and Kaufman, K., (2016). Predicting Walking Ability Following Lower Limb Amputation: An Updated Systematic Literature Review. Technology and Innovation, 18(2-3):125.

Krause, J. S. (2003). Years to employment after lower limb amputation injury. Archives of physical medicine and rehabilitation, 84(9), 1282-1289

Kendell, C., Lemaire, E.D., Kofman, J. and Dudek, N., (2016). Gait adaptations of transfemoral prosthesis users across multiple walking tasks. Prosthetics and Orthotics International, 40(1):89-95.

Koerber, A. and McMichael, L., (2008). Qualitative sampling methods a primer for technical communicators. Journal of Business and Technical Communication, 22(4):454-473.

Kim YC, Park CI, Kim DY, et al. (1996) Statistical analysis of amputations and trends in Korea. Prosthetic Orthot Int.20:88–95.

Larsson, B., Johannesson, A., Andersson, I.H. and Atroshi, I., (2009). The Locomotor Capabilities Index; validity and reliability of the Swedish version in adults with lower limb amputation. Health and quality of life outcomes, 7(1):44.

Largo T, Rosenman K. Surveillance of work-related amputations in Michigan using multiple data sources: results for 2006–2012. Occup Environ Med. 2015;72:171–176.

Meager, N., Bates, P., Dence, S., Honey, S., Williams, M, (1998) .Employment of Disabl People, Assessing the extent of participation, Research Report no.69,July, Department for Education and Employment,.

Malaheem, M.S., (2014). Lower Limb Prosthetic Prescription in Jordan. Jordan Medical Journal, 48(1):49-59.

Narayanan, G., Gnanasundaram, S., Ranganathan, M., Ranganathan, R., Gopalakrishna, G., Das, B.N. and Mandal, A.B., (2016). Improved design and development of a functional moulded prosthetic foot. Disability and Rehabilitation: Assistive Technology, 11(5):407-412.

Obalum, D.C. and Okeke, G.C.E., (2009). Lower limb amputations at a Nigerian private tertiary hospital. West African Journal of Medicine, 28(1):314–317.

Penn-Barwell, J.G., (2011). Outcomes in lower limb amputation following trauma: a systematic review and meta-analysis. Injury, 42(12):1474-1479. Road traffic injuries [Internet]. World Health Organization. 2018 [updated 2018 Feb 02; cited 2018 Oct 15]. Available from: http://www.who.int/news-room/fact-sheets/detail/ road-traffic-injuries. World Health Organization. Global status report on road safety 2015. Geneva: World Healt Organization. 2015. Available from: http://www.who.int/violence_injury_prevention/ road_safety_status/2015/en/

Pooja, G.D. and Sangeeta, L., (2013). Prevalence and aetiology of amputation in Kolkata, India: A retrospective analysis. Hong Kong Physiotherapy Journal, 31(1):36-40.

Razak, M.M.A., Tauhid, M.Z., Yasin, N.F. and Hanapiah, F.A., (2016). Quality of Life among Lower Limb Amputees in Malaysia. Procedia-Social and Behavioral Sciences, 222(6):450-457.

Ramakrishnan, K., Loh, S. Y., & Omar, Z. (2011). Earnings among people with amputation injury. Indian Medical Journal 49(9), 986-989.

Robert Gailey PhD, P.T., (2008). Review of secondary physical conditions associated with lower-limb amputation and long-term prosthesis use. Journal of Rehabilitation Research and Development, 45(1):15.

Salman, K.F. and Laporte, R., (2010). The incidence rate of Lower Extremity Amputation in Amman, Jordan. Jordan Medical Journal, 44(1):72-87.

Sansam, K., Neumann, V., O'Connor, R. and Bhakta, B., (2009). Predicting walking ability following lower limb amputation: a systematic review of the literature. Journal of Rehabilitation Medicine, 41(8):593-603.

Schönherr, M. C., Groothoff, J. W., Mulder, G. A., Schoppen, T., & Eisma, W. H. (2004). Vocational reintegration following spinal cord injury: expectations, participation and interventions. Spinal Cord, 42(3), 177-184.

Schönherr, M. C., Groothoff, J. W., Mulder, G. A., & Eisma, W. H. (2005). Participation and satisfaction after amputation : results of a vocational and leisure outcome study. , Neurorehabilitaiton Principles & Practice, 2nd edition. Bangalore:43(4), 241-248.

Stineman, M.G., Kwong, P.L., Xie, D., Kurichi, J.E., Ripley, D.C., Brooks, D.M., Bidelspach, D.E. and Bates, B.E., (2010). Prognostic differences for functional recovery after major lower limb amputation: effects of the timing and type of inpatient rehabilitation services in the Veterans Health Administration. PM&R, 2(4):232-243.

Suckow, B.D., Goodney, P.P., Cambria, R.A., Bertges, D.J., Eldrup-Jorgensen, J., Indes, J.E., Schanzer, A., Stone, D.H., Kraiss, L.W., Cronenwett, J.L. and Vascular Study Group of New England, (2012). Predicting functional status following amputation after lower extremity bypass. Annals of Vscular Surgery, 26(1):67-78.

Taly, AB, Sivaramannair, KP, & Murali, T. (Eds), (2001), Neurorehabilitaiton Principles & Practice, 2nd edition. Bangalore: NIMHANS.

Tashkandi, W.A., SBS, M.M.B.M., Badawood, S.M., Ghandourah, N.A. and Alzahrani, H.A., (2011). Lower Limb Amputations among Diabetics Admitted with Diabetic Foot Disorders in Three Major Hospitals in Jeddah, Saudi Arabia. Journal of King Abdulaziz University, 18(1):.23.

Webster, J.B., Hakimi, K.N. and Czerniecki, J.M., (2012). Prosthetic fitting, use, and satisfaction following lower-limb amputation: A prospective study. Journal of Rehabilitation Research and Development, 49(10):1493

Whiteford, G. E., & Pereira, R. B. (2012). Occupation, inclusion and participation. Occupational science: Society, inclusion, participation, 185-207.

World Health Organization. (2011). World report on disability 2011.

Van Eijk, M.S., van der Linde, H., Buijck, B., Geurts, A., Zuidema, S. and Koopmans, R., (2012). Predicting prosthetic use in elderly patients after major lower limb amputation. Prosthetics and Orthotics International, 36(1):45-52.

Vrieling, A.H., Van Keeken, H.G., Schoppen, T., Otten, E., Halbertsma, J.P.K., Hof, A.L. and Postema, K., (2008). Gait initiation in lower limb amputees. Gait & Posture, 27(3):423-430.

Zidarov, D., Swaine, B. and Gauthier-Gagnon, C., (2009). Quality of life of persons with lower-limb amputation during rehabilitation and at 3-month follow-up. Archives of Physical Medicine and Rehabilitation, 90(4):634-645.

Ziegler-Graham, K., MacKenzie, E.J., Ephraim, P.L., Travison, T.G. and Brookmeyer, R., (2008). Estimating the prevalence of limb loss in the United States: 2005 to 2050. Archives of Physical Medicine and Rehabilitation, 89(3):422-429

Bangladesh Health Professions Institute (BHPI)

CRP, Savar, Dhaka

Department of Rehabilitation Science

Informed consent form

Assalamualaikum,

My name is MAhmuda Afrin, I am a student in the Rehabilitation Science Department of BHPI.To obtain my post graduation degree, I have to conduct a research project and it is a part of my study. You are requested to participate in the study after a brief of the following.

My research title is "**Identification of the barriers facing by the person with amputation prosthetic service users after returning to their employment status**". Through this study I will find the barriers of after lower limb prosthetic service user's patient after return to their employment status after rehabilitation. If I can complete this study successfully, patients may get benefits whom are prosthetic patient.

To fulfill my research project, I need to collect data. So, you are respected to participate in the study. I want to meet you a sessions, after your prosthetic rehabilitation.

I would like to inform you that this is a purely academic study and will not be used for any other purposes. I assure that all data will be kept confidential. Your participation will be voluntary. You may have the rights to withdraw consent and discontinue participation at any time of the study. You also have the rights to answer a particular question that you don't like.

If you have any query about the study or right as a participant, you may contact with me.

Do you have any questions before I start?

So, may I have your consent to proceed with the interview?

Yes No

Signature of Participant and date ……..

Signature of Investigator and Date……..

Identification of the barriers facing by the person with amputation prosthetic service users after returning to their employment status.

Questionnaire

Patient ID: ……. Reg NO:……

Name of the patient:…….……

Adress:……..

Contact no:……

1. Age	
2. Sex	
3. Educational level	
4. Marital status	1. Married 2. Unmarried 3. Widow 4. Separate 5. Divorced
5. Occupation before amputation	
6. Monthly income before amputation	
7. Occupation after amputation	1. Not working at the moment 2. Same occupation as like before 3. Others

	…….
8. Monthly income before amputation	……..
9. Date of amputation	
10. Diagnosis	
11.Other disease	DM / HTN/ HD/ KD / Asthma Others…….
12. Causes of amputation	……
13. Barrier	
a) Working environmental barrier	
1. What type of structural barrier you want in your employment environment?	
2. Did you get the structural changes in your working environment?	1. Yes 2. No
3. Did you feeling any discrimination in your employment status?	1. Yes 2. No If yes than what types……..
4. All of your colleagues behave friendly with you?	1. Yes 2. No If yes than…… 1. Negligible 2. Mild 3. Moderate 4. Not so severe 5. Extremely severe
5. Is there any discrimination in your salary structure with the other peoples in your employment	1. Yes 2. No If yes than……

environment?	1. Negligible 2. Mild 3. Moderate 4. Not so severe 5. Extremely severe
	1. As a general staff
6. At employment sector how they accept you?	2. As a human 3. Not a general staff nor a people 4. As a disable people 5. Accept negligible 6. Not accepted
B). Social participation barrier	
1. Does your family support you?	1. Most of the time 2. Sometimes 3. Very often 4. Rare 5. Not at all
2. Do your friend support you?	1. Most of the time 2. Sometimes 3. Very often 4. Rare 5. Not at all
3. Do you have any barriers to participation in social activities?	1. Yes 2. No If yes than…… 1. Some of work 2. As a whole activities 3. Most of the work 4. All most all activities 5. Not at all
4. Have you noticed any behavioral changes socially after using prosthesis ?	1. Yes 2. No If yes than…… 1. Negligible 2. Acceptable 3. Not acceptable

	4. Intolerant
5. Can you participate equally in social activities?	1. Yes 2. No If yes than…… 1. Some of work 2. As a whole activities 3. Most of the work 4. All most all activities 5. Not at all
6. Are the people or consumers who get service from you comfortable to accepting it?	1. Yes 2. No

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

Ref.
CRP-BHPI/IRB/03/2021/03453

Date:.....
15th March 2021

To
Mahmuda Afrin
5th Batch M.Sc. in Rehabilitation science
Session: 2018-2019 Student ID:181180107
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Subject: Approval of the thesis proposal **"Identification of the barriers facing by person with amputation prosthesis users after return to their employment status"** by ethics committee.

Dear Mahmuda Afrin,
Congratulations.
The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above mentioned dissertation, with yourself, as the principal investigator. The Following documents have been reviewed and approved:

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

The purpose of the study is to determine changes of social life and daily activity among amputated respondents after having got a lower limb prosthesis. The study involves use of questionnaire to explore thesocial and economic impact over respondent life which is interviewed over phone call and direct face to face interview that may take 10 to15 minutes to answer the questionnaire. There is 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 18th February 2019 at BHPI (20th IRB Meeting).

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,

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