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QUALITY OF LIFE OF LOWER LIMB AMPUTEE WHO ARE USING PROSTHETIC DEVICE

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QUALITY OF LIFE OF LOWER LIMB AMPUTEE WHO ARE USING PROSTHETIC DEVICE

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Declaration

I declare that the work presented here is my own. All sources used have been cited appropriately. Any mistakes or inaccuracies are my own. I also declare that for any publication, presentation, or dissemination of information of the study, I would be bound to take written consent from Department of Physiotherapy of Bangladesh Health Professions Institute (BHPI).

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Contents

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Acronyms

AKA	Above Knee Amputation
BHPI	Bangladesh Health Professions Institute
BKA	Below Knee Amputation
BMRC	Bangladesh Medical Research Council
CRP	Centre for the Rehabilitation of Paralysed
HRQoL	Health related quality of life
IRB	Institutional Review Board
LLA	Lower Limb Amputation
QoL	Quality of life
TFA	Trans Femoral Amputation
TTA	Trans Tibial Amputation
WHO	World Health Organization

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Abstract

Purpose*:** To identify the quality of life of lower limb amputee who are using prosthetic device. ***Objectives*:** To explore the socio-demography (age, sex, educational level, marital status, living area, occupation before amputation, present occupation) of the lower limb amputee patients. To find out the quality of life of lower limb amputee. ***Methods: The study design was cross-sectional. Total 77 samples were selected by hospital based random sampling technique for this study from the Prosthetic and Orthotic department of CRP. Data was collected by using a SF-36 questionnaire. Descriptive statistic was used for data analysis which focused through table, pie chart and bar chart. ***Results***: Among 77 participants, 11.7% (n=9) were between <18 years age range, 44.2% (n=34) were 19- 30 years range, 22.1% (n=17) were 31-42 years range, 9.1% (n=7) were 43-54 years range, 13% (n=10) were >54 years range. The mean age was 39. Study focused that 15.6% (n=12) were females and 84.8% (n=65) were males. 57.1% (n=44) were married, and 42.9% (n=33) were unmarried, 14.3% (n=11) were nongovernment employee, 29.9% (n=23) were student, 2.6% (n=2) were housewife 11.7% (n=9) were Day laborer and 32.5% (n=25) were unemployed. 24.7%(n=19) were trans-femoral amputee, 75.3% (n=58) were trans-tibial amputee, Study demonstrated that 80.5% (n=62) occur due to accidental cause, 19.5% (n=15) amputation due to any pathological condition, Among the 77 participants, for general health10.4% have poor health status, 88.3% have fair health status and 1.3% or have good health status. For physical functioning 66.2% have fair status, 24.7% have poor status, and 9.1% have good status. For social functioning 26% have poor status, 72.7% have fair status, and 1.3% have good status. For emotional wellbeing 3.9% have good status, 51.9% have fair status, and 44.2% have poor status. For pain 7.8% have very poor status, 74% have poor status and 18.2% or 14 participants have fair status. ***Conclusion:*** This research shows a statistical overview of using lower limb prosthesis following lower limb amputation. But in the end these statistical results are not appropriate and powerful way to know the persons' quality of life not being in their positions.

Word Count: 11,205

Key words: Quality of life, amputation, prosthesis, lower limb prosthesis.

CHAPTER-I INTRODUCTION

1.1Background

An amputation is the elimination of an organ or other limbs in the body. Amputation is defined as synthesis or spontaneous partial or completely removable portable or part of the processing body, which is covered by skin and is one of the most disabilities. It is a common late-stage sequel of peripheral vascular disease and diabetes or a sequel of accidental trauma, civil unrest and landmines (Pooja et al., 2013).

Lower limb amputation (LLA) is life-changing surgery (Geertzen et al., 2015). Lower extremity amputation is a surgical procedure resulting in important anatomical, functional, psychological, and social consequences that can influence the quality of life of these patients. The patients with lower extremity amputations have numerous limitations compared to the control group, regardless of gender, while the patients with lower level of amputation have a higher level of physical functioning (Knezevic et al., 2015).

Lower limb amputation is a permanent surgical procedure that has important functional and sequelae that can influence the daily activity of the person with amputation (Van Twillert et al., 2014). Although rehabilitation aims to address these measuring the effect of these interventions on rehabilitation outcomes of people who have had an LLA remains a challenge (Coffey et al., 2014).

Limb amputations have been done since time immemorial. The first surgical description of a leg amputation was by Hippocrates (460-377 BC). Amputation is one of the most ancient of all surgical treatments, its history dating back as far as the 16th century. Ambroise Pare´ was the first to use ligatures to control bleeding after amputation and designed relatively sophisticated prosthesis (Ostler et al.,2014).

Amputation may involve a single limb (unilateral), both the upper or lower limbs (bilateral), or a combination of upper and lower limb amputations (multiple amputations). Amputation may be performed at various anatomical levels (De Laat et al., 2011).

Lower limb amputation may involve removal of one or more toes, part of the foot, ankle disarticulation (disarticulation is the amputation of a body part through a joint), trans-tibial

(below the knee) amputation knee disarticulation, trans-femoral (above the knee) amputation, hip disarticulation and hemi-pelvectomy (removal of half of the pelvis). In high income countries, dysvascularity is the foremost cause of amputation; as a corollary most amputations involve the lower limbs (MacKay et al., 2022).

The most common causes of surgical amputations are the complications caused by diabetes (diabetic foot) including a number of vascular complications in the form of ischemia and peripheral artery disease. (Feinglass et al., 2012). 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., 2013). Another study in Canada stated that amputations were most frequently indicated after admission for 14 diabetic complications (81%), cardiovascular disease (6%), or cancer (3%) (Kayssai et al., 2016). Thus, it can be concluded that, in developing countries, peripheral vascular disease is the most common cause of amputation. A study conducted in India suggests that trauma had caused 70.3% of amputation (Jordan et al., 2012)

Different types of prostheses and good training to use them properly enable the lower extremity amputees to walk normally and carry out their daily activities independently. (Knezevic, et al., 2015)

In developed countries, vascular complications are the major contributors to lower limb amputations, whereas in developing countries, traumatic accidents are the major cause of amputation. Vascular complications and diabetes are burgeoning health issues in developing countries,6 and diabetic ulcers are precursors of lower limb amputation. (Sinha et al., 2011).

Health-related quality of life (HRQoL) reflects an overall sense of wellbeing comprising the emotional, physical, and social aspects of a person's life. HRQoL after amputation is therefore an important short- and long-term outcome measurement for patients with lower limb amputations (Christensen et al., 2016).

Limitations in body structure and function due to amputation affect the activity level and thereby the participation of the individual in society. Additionally, personal, and

environmental factors play important roles in determining outcomes after amputation and long-term functioning of amputees. Psychosocial support has already been demonstrated as an important determinant for adjustment to amputation (Sinha et al., 2011).

Those who face physical or psychological challenges or a combination of these can benefit from physical activity as advocated by many international health communities (AlSofyani et al., 2016).

The global frequency of amputation is challenging to determine, as rates vary widely both between and within countries (Holman et al., 2012). Prevalence of upper limb amputations are less than lower limb amputations (Chalya et al., 2012). Prevalence rate varies significantly by country and according to factors such as socio-economic status, geographic location, severity of trauma, interim in seeking medical care, and clinicians' decision making (Gavan et al., 2016). Occurrence rate of lower limb amputation has been reported to range from 5.8 to 31.0 per 100,000 civilian population internationally (Moxey et al., 2011).

The rate of recurrence is much higher among military inhabitants because of the penetrating nature of damage they sustain from improvised explosive device (Dua et al., 2014).

The World Health Organization defines the quality of life as one's own perception of their own life in the context of the culture and value systems in which they live, but also in relation to their own goals, expectations, standards and interests. The quality of life is a broad concept and consists of physical, mental and social health of an individual, his/her financial independence, i.e., level of independence and the personal attitude towards important developments in the society (Knezevic, et al., 2015).

1.2 Rationale

Amputation brings a major change in an individual's life, whose image of their own body is changed; movement activities and self-care are made more difficult; the psycho-social status of the patient's life is changed as well, and the performance of professional and other activities are significantly affected. The most affected function is walking, especially in different terrains and slopes. After any catastrophic situation national and international welfare organizations are ready to provide fund for immediate response or early recovery but a very few numbers of organizations follow the sustainability development or empowerment of the injured or disabled people. The survivors suffer a lot after any devastation especially they suffer with post-traumatic stress related disorder as well as job dissatisfaction. In this study the investigator is interested to find out the quality of life after amputation. How to make the prosthesis more effective for lower limb amputees. The result could have ensured us about quality of life after using lower limb prosthesis. However, Investigator feels that there have still limitations and basically not well quality of life in any uncertain natural or manmade disaster. Investigator is interested to find out survivors' day to day lives, wellbeing and satisfaction in their community after any injuries and psychological trauma. Moreover, develop and evidence-based project study should be done to strengthen physiotherapy profession. Unavailability of the appropriate service or financial constraint may lead patient with chronic vascular disease to suffer from ischemic limb damage. So, this study will increase awareness. There is no such relevant research has been conducted in this field yet in Bangladesh. That's why I am interested to do it.

1.3 Research Question:

What is the quality of life of lower limb amputee who are using prosthetics device?

1.4 Study Objectives

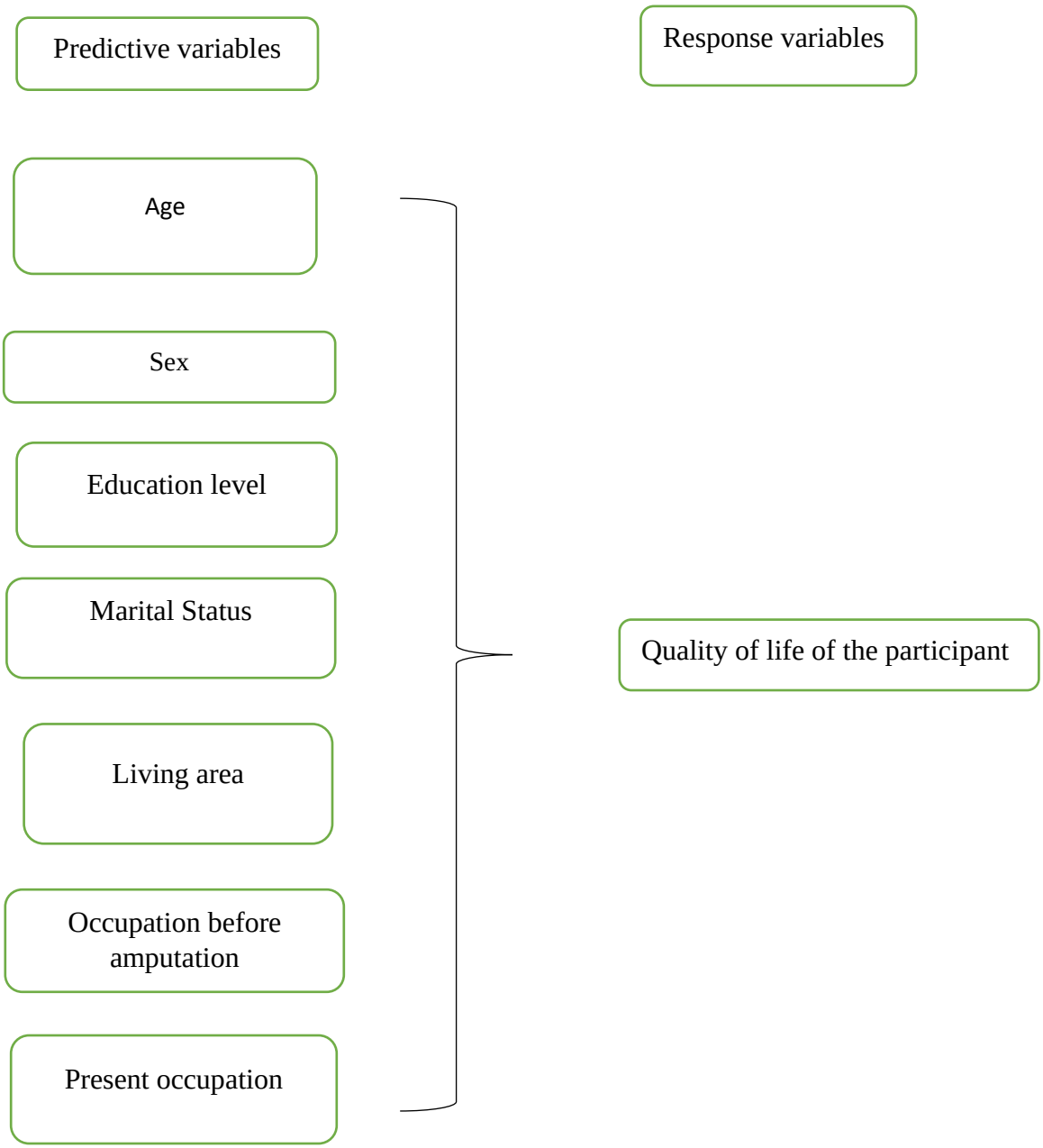
General objective:

To find out the quality of life of lower limb amputee who are using prosthetic device.

Specific objectives:

i) To identify the sociodemographic information of the participant.
ii) To know the amputation related information of the participant.
iii) To find out the quality of life of the lower limb amputee.
iv) Association between sociodemographic information and Quality of life of the participants.

1.5 Conceptual framework



1.6 Operational Definition

Amputation

An amputation is the exclusion of a limb or other limb outgrowth of the body. Amputation is defined as the surgical or spontaneous partial or complete removal of a limb or projecting body part covered by skin and is one of the most common developed disabilities.

Lower limb amputation

Lower-limb amputation is the removal of a part or multiple parts of the lower limb. Though there is some discrepancy in literature regarding exact distal boundaries, it is generally accepted that "major" amputations include those which are at or proximal to the ankle.

Prosthesis

Prosthesis or prosthetic device is an artificial device that replaces a missing body part. Prosthesis is typically used to replace parts lost by injury or missing from birth (congenital) or to supplement defective body parts.

Prosthetics

The branch of medicine or surgery that deals with the production and application of artificial body parts

Trans-femoral

Across or through the femur.

Trans-tibial

An amputation of the lower leg between the ankle and knee.

Knee disarticulation

Through-knee amputation.

Hip disarticulation

Hip disarticulation is the surgical removal of the entire lower limb by transection through the hip joint.

CHAPTER-II LITERATURE REVIEW

The global incidence of amputation is unknown, available data evidence considerable variation both between and within countries. The major amputation rate was 5·1 per 100 000 population and did not change over the 5 years (Moxey et al., 2011). In south- East Asia, the prevalence of disability ranges from 1.5% to 21.3% of the total population, depending on the definitive and severity of disability (Imam et al., 2017). Using a standard protocol for data collection, the Global Lower Extremity Amputation Study Group assessed the incidence of lower limb amputation in ten different locations worldwide and reported marked differences among test sites in their annual rates of lower limb amputation (Narres et al., 2017). According to newest statistics in the United State of America, about 1.7 million people live with amputations and the number has increased in recent years (Mousavi et al., 2012).

There was a total of 35,306 LLA performed in Australia between the 1st of July 2007 and 30th June 2012. Almost three-quarters of these procedures were below-ankle procedures. Toe amputations were the most common level accounting for more than 40% of the total number of LLA. Partial foot amputations (excluding the toe level) were twice as common as transtibial amputations and nearly three times as common as transfemoral amputation. Two thirds of the population undergoing LLA were aged over 60 years of age. One-third of LLA occurred in people between 35–60 years, with a small proportion of people younger than 35 years. Two-thirds of all LLA were performed for males. Half of all LLA occurred in people with type 2 Diabetes Mellitus. National incidence rate Across the time series of this investigation, the crude IR-LLA was 32.4 per 100,000 population. The age-adjusted IR-LLA was twice as high in males (40.3 per 100,000 population 95%CI 39.8–40.8) as it was in females (19.9 per 100,000 population; 95%CI 19.5–20.2) (Dillon et al., 2017).

Prostheses are adaptive and enabling entities used by a significant number of individuals worldwide. The word itself has roots in Greek, meaning ‘an addition’, from ‘pros’ meaning towards and ‘tithenai’ to place (Oxford University Press, 2014).

Prosthesis is one of the earliest inventions of human civilization. Bryant (2014) notes some of the earliest uses of prosthetic limbs. The first written record of an artificial leg was made by the Greek historian Herodotus; this record was a documented story of a prisoner who

escaped by amputating his foot. The prisoner found and used a wooden limb to assist him in walking. In a later discovery, researchers found a prosthetic device in Egypt which was used to replace a big toe; this prosthesis was made of leather and carved wood. Researchers believe that it is approximately 3000 years old. An artificial leg, made of wood and copper, was found in Italy in 1858. In the primitive era of prosthetic limbs, wooden or iron rods were attached to the stump of the leg. Straps were usually used to keep the rod in place. During the Middle Ages, peg legs and hook arms were available for amputees to use. During the age of the Renaissance, prosthetic device construction improved, and prostheses were beginning to be made out of materials such as iron, copper, steel, and wood. Amboise Pare, a surgeon who lived in France during the sixteenth century, was dedicated to treating injured soldiers who had lost limbs in battle (Bryant, 2014).

A prosthesis can therefore take any shape or form in providing something that would not normally be there. This thesis is concerned with limb prostheses. These are used by individuals who have an absence of one or more limb regions, and so the 'addition' that the prosthesis provides is for an absent arm or leg, or part of these. One of the primary goals of prosthesis following lower-limb amputation is the successful fitting of the prosthetic device and use of the prosthesis to achieve functional mobility. Greater prosthesis use has been associated with higher levels of function and independence via improved self-care and mobility as well as improved perceived quality of life and employment success (Schaffalitzky et al., 2011).

Lower limb amputation is a permanent surgical procedure that has important functional and sequelae that can influence the daily activity of the person with amputation (Van Twillert et al., 2014). Amputation may involve a single limb (unilateral), both the upper or lower limbs (bilateral), or a combination of upper and lower limb amputations (multiple amputations). Amputation may be performed at various anatomical levels (De Laat et al., 2011). The loss of a limb can be a life-changing event, and the research literature details a diverse and widespread range of extensive effects that are associated with acquired limb absence, affecting the person at the physical, psychological, and social functioning level (Desmond et al., 2014).

The amputee most often oppresses for the lost limb and the old body image and is thought to go through four or five stages as a part of their oppressing process, that is, refusal, anger,

dealing, depression, and acceptance. This often assimilates the way in which people usually respond to the death of a loved one or when being diagnosed with a life-threatening illness (Chin & Toda, 2016).

The age of the amputees ranged from below 20 years to above 70 years. The most common age group for amputation was 21-30 years of age, accounting for 32.0%of all amputees (Pooja & Sangeeta et al., 2013). The 31–40-year age group was second, accounting for 23.2% of all amputees, and the 20 years and below age group was third (14.2%) (Pooja & Sangeeta et al., 2013).

Since the mid-2000, 6 reports have been published on the incidence of trauma-related amputations. In the United States, the incidence of traumatic limb loss among Maryland nonfederal hospital admissions decreased between 2002 and 2004, from 1.3 to 0.6 per 10,000 persons (Robin et al., 2011)

People over the age of 70 and those with a bilateral lower limb amputation might not walk after the amputation (Tashkandi et al., 2011).

In the UK, statistics concerning limb absence are not currently collected, but the United National Institute for Prosthetics & Orthotics Development (2013) reported that nearly 6,000 individuals with limb absence were referred to prosthetic centers in 2010-11. Limb absence statistics are also not officially collected in the Republic of Ireland, but a national representative organization recently claimed that there are over 5,000 individuals living with limb absence in this country (Amputee Disability Federation Ireland, 2014).

Physical rehabilitation requires the coordination and involvement of numerous medical disciplines. The rehabilitation process can be divided into four stages: presurgical, immediate postoperative, prosthetic rehabilitation, and continuing care. Following the postoperative period, the first task is to determine whether prosthetic rehabilitation is suitable for the patient (O'Keeffe, 2011).

In relation to the specific relationship of prosthetists and individuals with lower limb amputation, research in this area is limited to a small number of studies concerned with the practicalities of prosthesis prescription (Schaffalitzky et al., 2011) and phantom limb pain. Given that a prosthesis can be viewed as a fundamentally enabling technology, or 'adjustment in daily-life activities' (Vasluian et al., 2013), Several studies have revealed areas of the patient-prosthetist relationship which individuals found to be less than

satisfactory including overall communication and interpersonal skills and the exchange of information (Murray, 2013).

A prosthesis enables or enhances function towards that which a biological limb would otherwise provide, and thus the use of a limb will have an impact on a person who would otherwise be without this, across a range of domains (Cook & Miller, 2012).

The most commonly used materials in current prosthetic devices are leather, metal, wood, thermoplastic and thermosetting materials, foamed plastics, and viscoelastic polymers. Five characteristics are considered when deciding what materials to use to construct a prosthesis: strength, stiffness, durability, density, and corrosion resistance. Prosthetic limbs are often made from materials that preserve heat, thereby creating the problem of perspiration; it is better to make prostheses out of materials which are resistant to moisture. Prostheses that are made of materials that are resistant to moisture are more readily cleaned than porous substances (Lusardi, et al., 2013).

Later, prosthetic technology began to advance after World War I and World War II due to the increase in amputees. A special sock, which improved comfort and stability, was invented for above-knee prosthesis. In the years that followed, better materials were synthesized to construct prosthetics. Carbon fiber was a stronger and more lightweight material. Also, silicone was used to produce realistic-looking skin (Bryant, 2014).

Technology has progressed, and there are now bionic prostheses. In simplest terms, the prosthesis contains sensors that send signals to the brain, and, in the case of an upper limb prosthesis, the user can activate individual fingers and work through a full range of motion. Some patients will undergo a surgical procedure called re-innervation. This procedure uses sensors that are implanted in the patient's shoulders, pectoral muscles, and residual limbs. There are also other methods that do not require invasive surgery (Ramos, 2016).

A higher quality of life was associated with an absence of comorbidities, lower residual limb and phantom limb pain, employment status and non-use of assistive devices other than a prosthesis, but also found associations with younger age, lower functional restriction, and greater adjustment to limitation, increased social adjustment and lower restrictions in athletic ability (Sinha et al., 2014).

The rates of success were similar: 31% and 33% of with trans-tibial amputation (TTA) and trans-femoral amputation (TFA), respectively, achieved mobility success when seen in a comprehensive inpatient rehabilitation unit (Czerniecki et al., 2012).

Vietnam has many people who have had a lower extremity amputation due to conflict, disease (e.g., leprosy) and, increasingly, road traffic accidents. This number was estimated to be 200,000 in 1996, with an annual increase of 3-4%. A very different estimate was reported in an internal briefing paper of the Special Fund for the Disabled (SFD) project. They estimated the prevalence of amputation in Vietnam to be 1 in 1,000 population, which would put the current figure at around 85.000 Prosthesis. (Van Brakel et al., 2012).

The Quality-of-life healthcare, it is noted that the concept of health-related quality of life acknowledges that subjects (like people, patient, and survivors) put their actual situation in relation to their personal expectation. The latter can vary over time, and react to external influences such as length and severity of illness, family support, etc. As with any situation involving multiple perspectives, patients' and data collectors' rating of the same objective situation have been found to differ significantly. Consequently, health-related quality of life is now usually assessed using patient questionnaires. These are often multidimensional and cover physical, social, emotional, cognitive, work- or role-related, and possibly spiritual aspects as well as a wide variety of disease related symptoms, therapy induced side effects, and even the financial impact of medical conditions in any trouble situation. Although often used interchangeably with the measurement of health status, both health-related quality of life and health status measure different concepts (CDC, 2011). Safe and confident gait is important for mobility, especially for people with lower extremity amputations (Kendell et al., 2016).

Increased anxiety is common in the early postoperative period and amongst inpatients. However, similar findings also emerge in other patient groups and are considered an 'appropriate' response in light of potentially life-threatening surgery or injury and prolonged hospitalization. Anxiety does not appear to persist in the long-term following limb amputation. Potential for posttraumatic stress disorder (PTSD) following limb amputation is widely recognized yet poorly researched, even amongst those with traumatic limb loss (Wegener et al., 2011).

CHAPTER-III METHODOLOGY

3.1 Study Design

This study was conducted using cross sectional design under a quantitative study method. Survey methodology was chosen to meet the study aim as an effective way to collect data.

3.2 Study Site

The study was conducted in Tertiary level rehabilitation hospitals like Centre for the Rehabilitation of the Paralysed (CRP) Savar, at Prosthetics and Orthotics (P&O) which is the largest rehabilitation center of the South Asia.

3.3 Study Population

Peoples who had lower limb amputation was collected using convenience sampling from Tertiary level hospitals like Centre for the rehabilitation of the paralysed (CRP) Savar, at Prosthetics and Orthotics (P&O).

3.4 Sample size

The equation of sample size calculation is given below-

$$n = \{z\ (1 - \alpha/2) / d\}^2 \times pq$$

Here,

$z\ (1 - \alpha/2) = 1.96$

p = 0.5

q = (1-p)

= 1-0.5

= 0.5

d = Sampling errors which is 5% = 0.05

According to this equation the sample should be more than 384 people but due to time consuming and the availability of the sample, the study is conducted with 77 participants are selected according to the inclusion and exclusion criteria.

3.5 Sampling Technique

Findings the appropriate number and type of people taking part in the study is called "sampling" (Hicks, 2009). The study was conducted by using the hospital based random sampling methods due to the time limitation and as it was the one of the easiest, cheapest, and quicker method of sample selection.

3.6 Inclusion criteria:

- Both male females are selected.
- People who are willing to participate in the study.
- People with amputed lower limb
- Good cognitive functional level

3.7 Exclusion criteria:

- Those who are not interested to participate.
- People who have mental illness.
- Patient with poor cognitive function.

3.8 Data Processing

3.8.1 Data Collection Tools

- Record or Data collection form

- Informed Consent

- SF 36 questionnaire

- Papers, pen, and pencil etc.

Quality of life related scale (SF-36):

The Short Form-36 (SF-36) is a 36 item questionnaire which measures Quality of Life (QOL) across eight domains, which are both physically and emotionally based and it is a structured, self-report questionnaire (Doosti-Irani et al., 2018).The eight domains that the SF36 measures are as follows: physical functioning; role limitations due to physical health; role limitations due to emotional problems; energy/fatigue; emotional well-being; social functioning; pain; general health. It is the most widely used measures to predict health-related quality of life and it also help in showing the difference between subjects with variety of chronic conditions and between subjects with different level of severity of the same disease. The Test-retest reliability of sf-36 Bangla version has been tasted and the value of Test- retest reliability (Leung et al., 2012).

3.8.2 Data Collection

Procedure At the very beginning researcher clarified that, the participant has the right to refuse to answer of any question during completing questionnaire. They can withdraw from the study at any time. Researcher also clarify to all participants about the aim of the study. Participants were ensured that any personal information would not be published anywhere. Researcher took permission from each volunteer participant by using a written consent form. After getting consent from the participants, standard questionnaire was used to identify the complaint and collect demographic information. Questions were asked according to the Bangla format. For conducting the interview, the researcher conducted a face-to-face interview and asked questions. Physical environment was considered strictly. Stimuli that can distract interviewee were removed to ensure adequate attention of interview. Interviewee was asked questions alone as much as possible with consent as sometimes close relatives can guide answer for them. The researcher built a rapport and clarified questions during the interview. Face to face interviews is the most effective way to get full cooperation of the participant in a survey. Face to face interviews is also effective to describe characteristics of a population. Face to face interviews was used to find specific data which describes the population descriptively during discussion. According to the participants' understanding level, sometimes the questions were described in the native

language so that the patients can understand the questions perfectly and answer accurately. All the data were collected by the researcher own to avoid the errors.

3.9 Data Analysis

Descriptive statistics were used to analyze data. Descriptive statistics refers methods of describing a set of results in terms of their most interesting characteristics (Hicks, 2009). Data were analyzed with the software named Statistical Package for the Social Science (SPSS) version 22. The variables were labeled in a list and the researcher established a computer-based data definition record file that consist of a list of variables in order. The researcher put the name of the variables in the variable view of SPSS and defined the types, values, decimal, label alignment and measurement level of data. The next step was cleaning new data files to check the inputted data set to ensure that all data has been accurately transcribed from the questionnaire sheet to the SPSS data view. Then the raw data were ready for analysis in SPSS. Data were collected on frequency and contingency tables. Measurements of central tendency were carried out using the mean plus standard error (SE) for variables. For the study of the association of numeric variables one-way anova test were used. Data were analyzed by descriptive statistics and calculated as percentages and presented by using table, bar graph, pie charts etc. Microsoft office Excel 2017 was used to decorating the bar graph and pie charts. The results of this study were consisted of quantitative data. By this study a lot of information was collected.

One-way Anova Test

Analysis of variance (ANOVA) is one of the most frequently used statistical methods in medical research. The need for ANOVA arises from the error of alpha level inflation, which increases Type 1 error probability (false positive) and is caused by multiple comparisons. ANOVA uses the statistic F, which is the ratio of between and within group variances. (Wang et al.,2017)

The test is an extension of the global envelope test introduced by (Mrkvicka et al.,2016) global envelope tests for spatial processes, J. R. Statist. Soc. B 79, 381--404, doi: https://doi.org/10.1111/rssb.12172). The graphical interpretation is realized by a global envelope which is drawn jointly for all samples of functions. If a mean function computed from the empirical data is out of the given envelope, the null hypothesis is rejected with the predetermined significance level α. The advantages of the proposed one-way functional ANOVA are that it identifies the domains of the functions which are responsible for the potential rejection. We introduce two versions of this test: the first gives a graphical interpretation of the test results in the original space of the functions and the second immediately offers a post-hoc test by identifying the significant pair-wise differences between groups.

Assumptions of the One-way Anova:

1. Use a one-way ANOVA when you have collected data about one categorical independent variable and one quantitative dependent variable.
2. The independent variable should have at least three levels (i.e., at least three different groups or categories).
3. **Independence of observations**: the data were collected using statistically valid methods, and there are no hidden relationships among observations. If your data fail to meet this assumption because you have a confounding variable that you need to control for statistically, use an ANOVA with blocking variables.
4. **Normally distributed response variable**: The values of the dependent variable follow a normal distribution.
5. **Homogeneity of variance**: The variation within each group being compared is similar for every group. If the variances are different among the groups, then ANOVA probably isn't the right fit for the data.

3.10 Ethical Consideration

The researcher maintained some ethical considerations: Researcher has followed the Bangladesh Medical Research Council (BMRC) guideline & WHO research guideline. A research proposal was submitted to the physiotherapy department of BHPI for approval and the proposal was approved by the faculty members and gave permission initially from the supervisor of the research project and from the course coordinator before conducting the study. The proposal of the dissertation including methodology was presented to the Institutional Review Board (IRB) of Bangladesh Health Professions Institute (BHPI) for oral presentation defense was done in front of the IRB. Then the necessary information was approved by Institutional Review Board and was permitted to do this research. After getting the permission of doing this study from the academic institute the researcher had been started to do it. The researcher had been taken permission for data collection from the P&O dept. CRP Savar. The participants would be informed before to invite participation in the study. A written consent form used to take the permission of each participant for the study and participants who are <18 years old, the researcher took permission from their parents. The researcher ensured that all participants were informed about their rights and reserves and about the aim and objectives of the study. Researcher also ensured that the organization (CRP) was not hampered by the study. All kinds of confidentiality highly maintained. The researcher ensured not to leak out any type of confidentialities. The researcher was eligible to do the study after knowing the academic and clinical rules of doing the study about what should be done and what should not. All rights of the participants were reserved, and researcher was accountable to the participant to answer any type of study related question.

CHAPTER -IV RESULTS

4.1 Sociodemographic information

4.1.1 Age of the participants

Among 77 participants, the minimum age is 12 years, maximum age is 65 years & the mean age is 38.5 years. Demographic data shows that among 77 participants, <18 years of age about 11.7% of participants or 9 participants, about 44.2% of participants or 34 participants are between 19-30 years of age range. In between 31-42 years of age range the participants are 22.1% or 17 participants and in between 43-54 years of age range the participants are 9.1% or 7 participants. And 13% participants or 10 participants are in the age ranged >54 years. (Table:1)

Table 1-Age of the participants

Age group (Years)	Frequency (N)	Percent%
<18	9	11.7%
19-30	34	44.2%
31-42	17	22.1%
43-54	7	9.1%
>54	10	13.0%
Total	77	100%

4.1.2 Gender of the participants

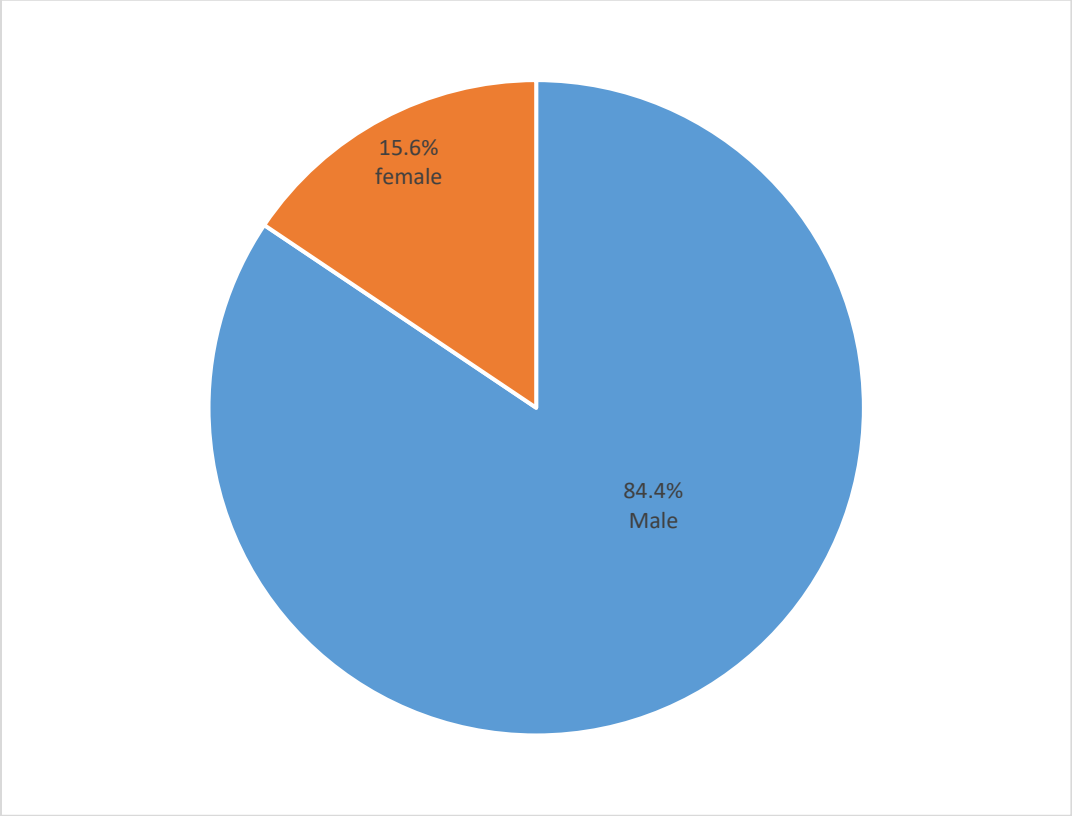


Figure 1- Gender of the participants

Demographic data shows that among 77 participants, most of the participants were male 84.4% rather than female 15.6%. It also shows there were 65 males and only 12 females. (Figure 1)

4.1.3 Educational level of the participants

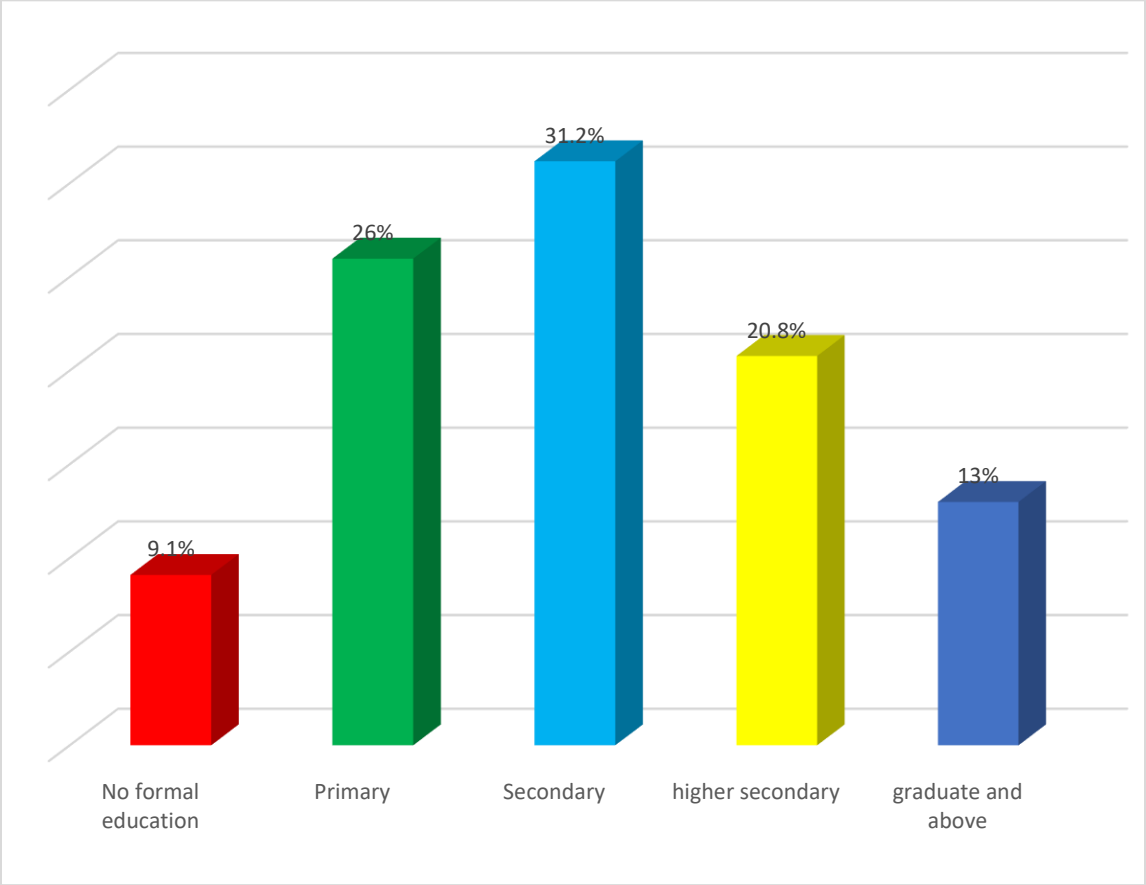


Figure 2: Educational level of the participants

Among all of lower limb prosthesis users, about 9.1% participants or 7 participants have never attended on any formal education. About 26% of the participants or 20 participants have completed primary education where only 31.2% of the participants or 24 participants have finished their high school education and 20.8% or 16 participants have completed college education. Among the participants 13% or 10 participants have completed graduation degree. (Figure 2)

4.1.4 Marital status of the participants

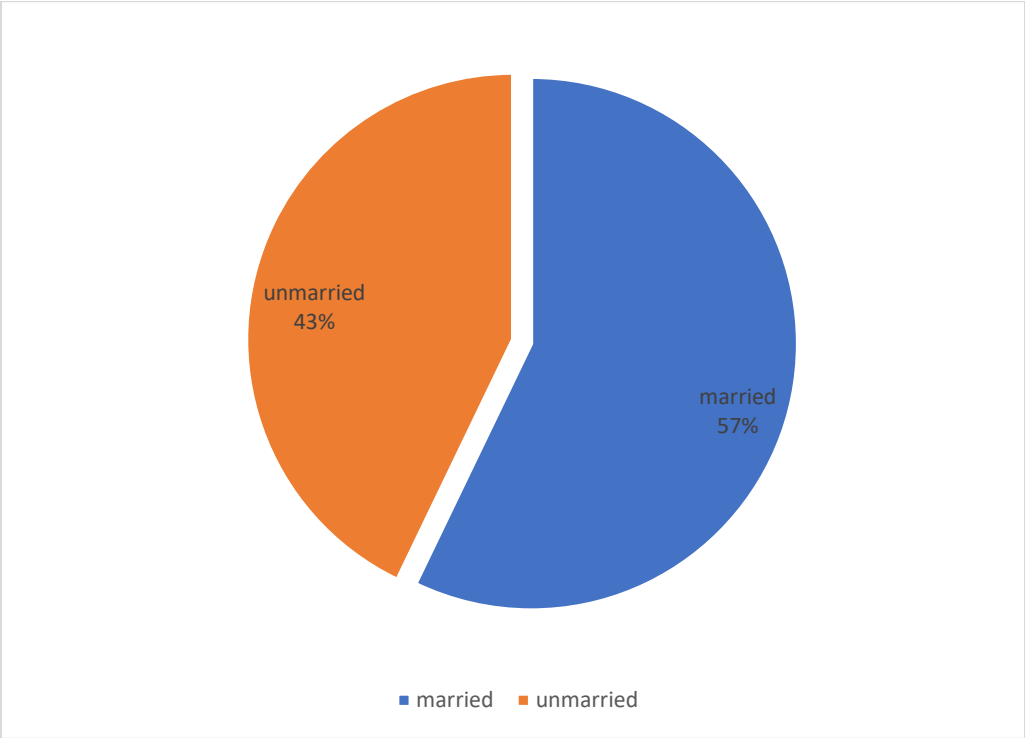


Figure 3: Marital status of the participants

In case of their marital status about 43% were unmarried, 57% were married. It also shows there were 44 married participants and 33 unmarried or single participants. (Figure 3)

4.1.5 Living Area of the participants

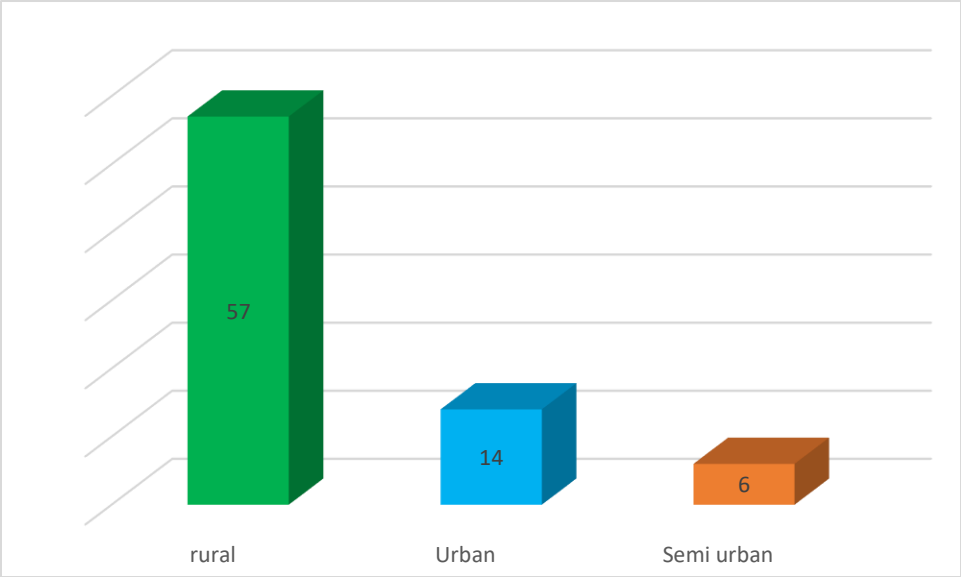


Figure 4: Living Area of the participants

In this study, the data shows that among 77 participants' 14 participants or 18.2% participants are urban,6 participants or 7.8% participants are semi urban and rest of them, 57 participants or 74% participants are rural. (Figure 4)

4.1.6- Occupation before amputation of the participants

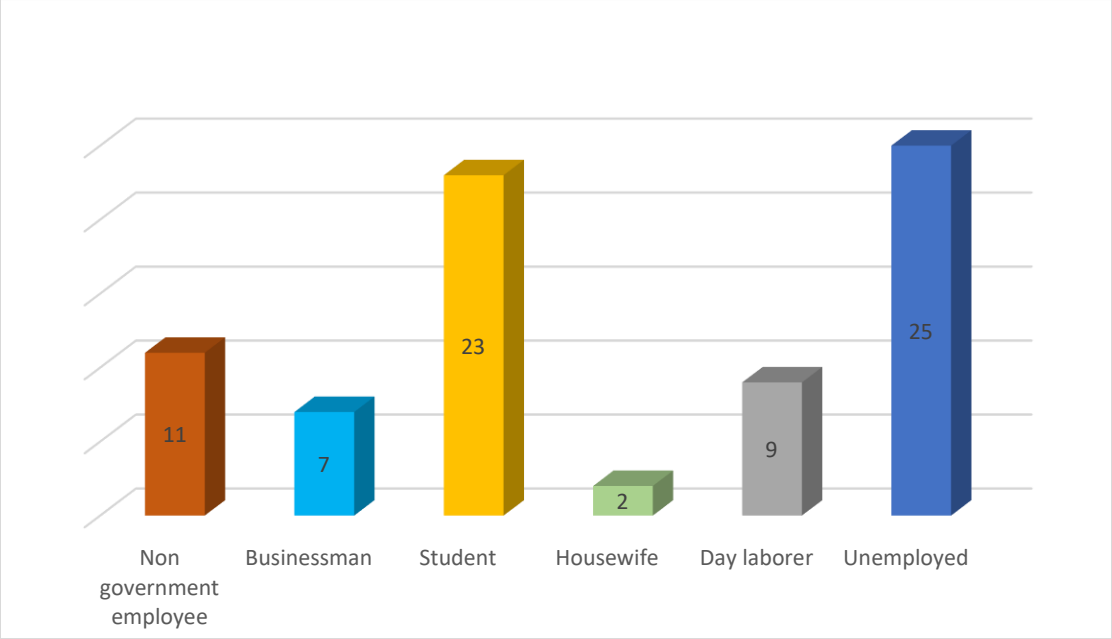


Figure 5- Occupation before amputation

In this study, 32.5% of the participants or 25 participant was unemployed (able to work) before amputation, 29.9% of the participants or 23 participants were student, 2.6% of the participants or 2 participants were homemaker, 7 participant or 9.1% of the participants was businessman, 11.7% of the participants or 9 participants used to be day laborer, 11 participant or 14.3% of the participants was non-government employee. (Figure 5)

4.1.7 Present Occupation of the participants

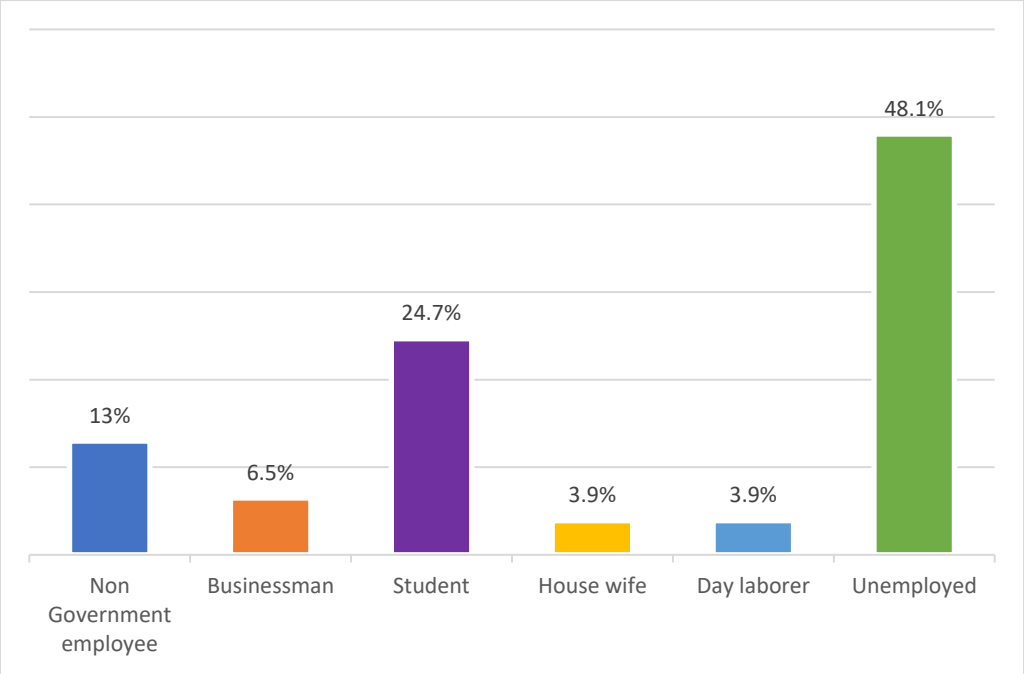


Figure 6: Present Occupation of the participants

In this study, 32.5% of the participants or 25 participant was unemployed (able to work) before amputation, 29.9% of the participants or 23 participants were student, 2.6% of the participants or 2 participants were homemaker, 7 participant or 9.1% of the participants was businessman, 11.7% of the participants or 9 participants used to be day laborer, 11 participant or 14.3% of the participants was non-government employee. (Figure 6)

4.2 Amputation related information

4.2.1 Type of amputation of the participants

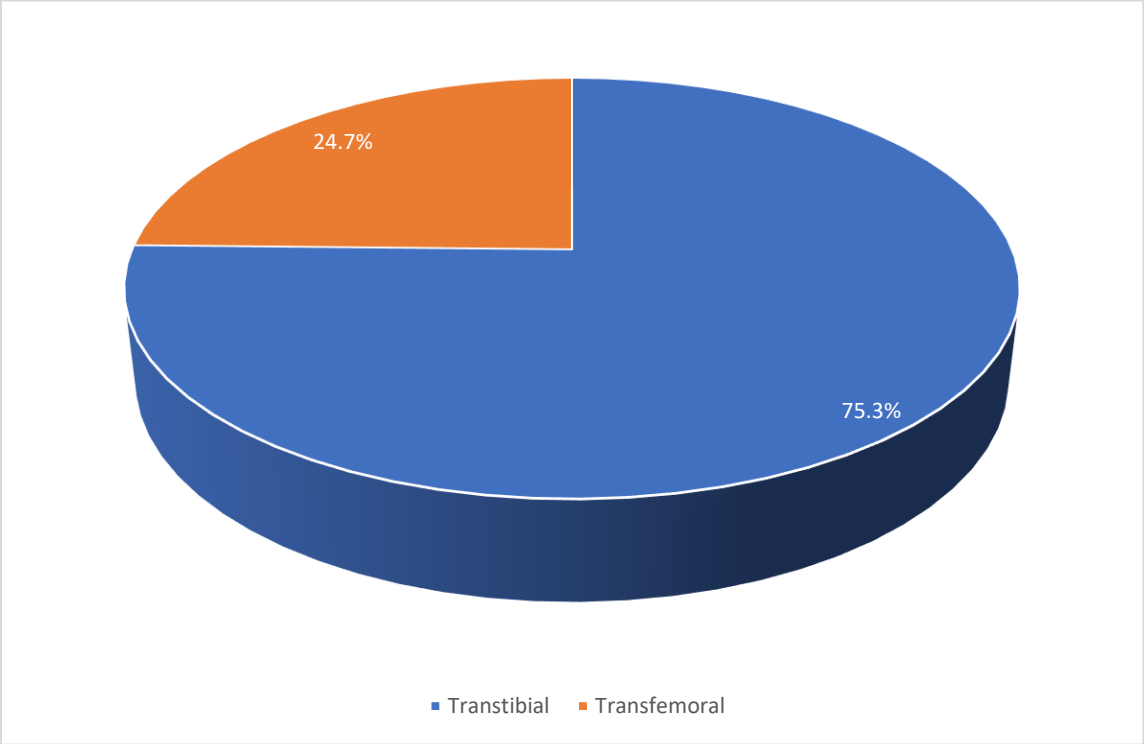


Figure 7: Type of amputation

Among all of lower limb prosthesis users most of the participants were transtibial 75.3% rather than transfemoral 15.6%. It also shows there were 58 transtibial and 19 transfemoral (Figure 7)

4.2.2 Cause of amputation of the participants

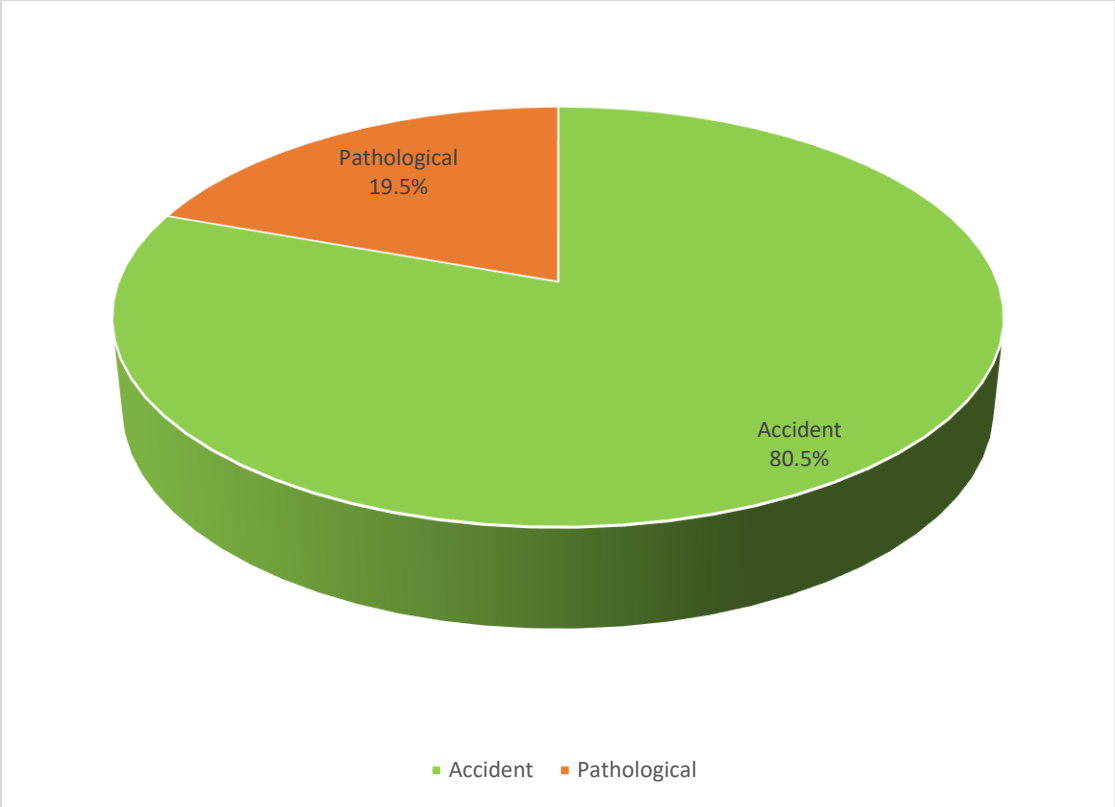


Figure 8: Cause of amputation

In this study, the data shows that among 77 participants, Cause of amputation for 80.5% or 62 participants were accident and 19.5% or 15 participants were pathological. It shows that accidental cause is more than pathological. (Figure 8)

4.2.3 Site of amputation of the participants

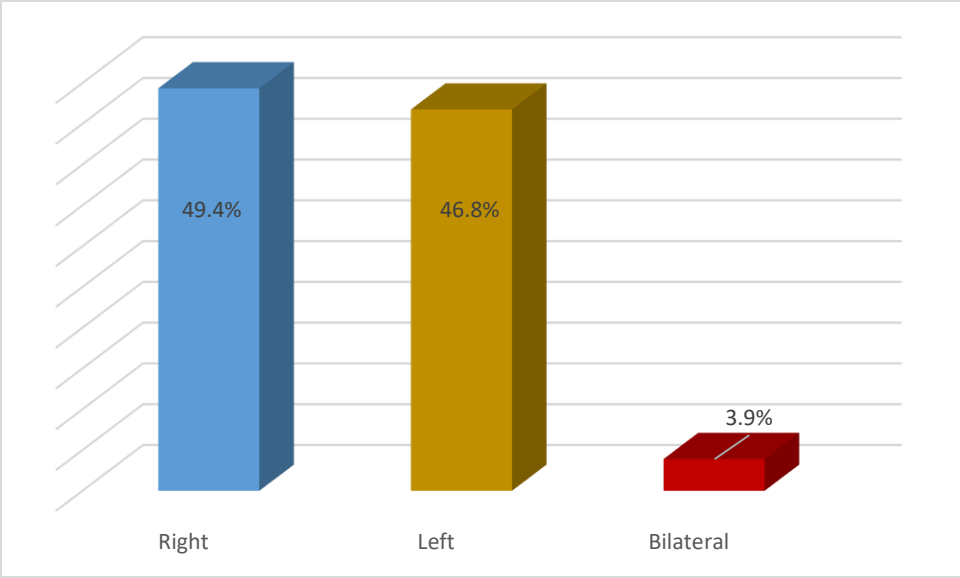


Figure 9: Site of amputation

In this study, the data shows that among 77 participants, Site of amputation of 49.4% of the participants or 25 participants were right, 46.8% of the participants or 23 participants were student and 7 participant or 3.9% of the participants were bilateral. It shows that right site is more affected than left site and bilateral is the lowest. (Figure 9)

4.2.4 Type of prosthesis uses by the participants

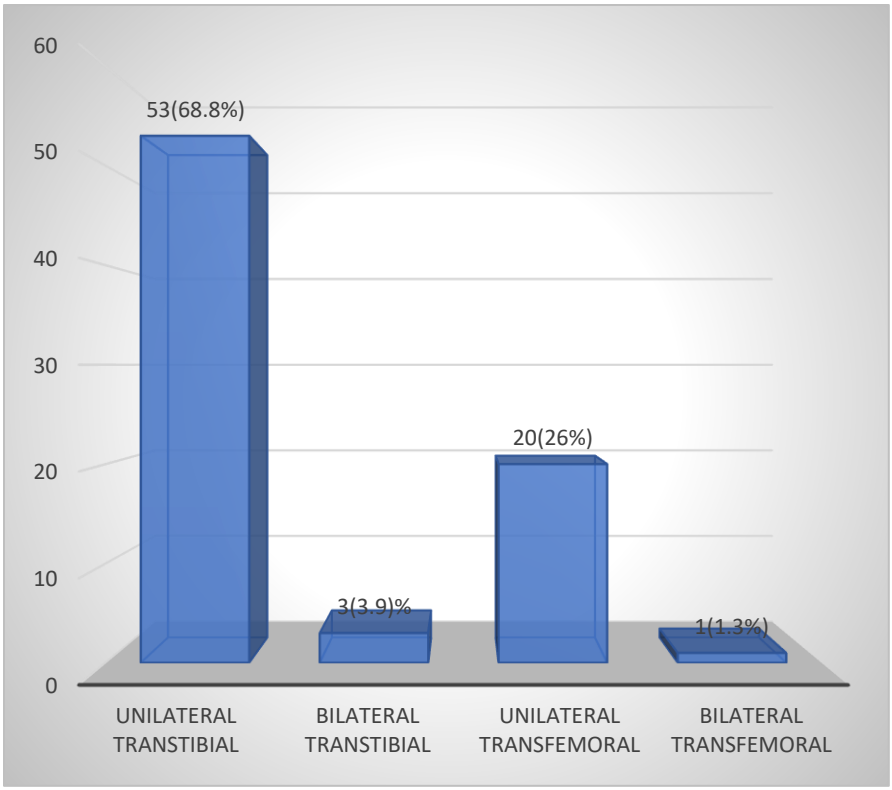


Figure 10: Type of prosthesis

Among all of lower limb prosthesis users most of the participants uses unilateral transtibial prosthesis (68.8% of the participants or 53 participants) more than unilateral transfemoral (26% of the participants or 53 participants). Unilateral transfemoral users were more than bilateral transtibial (3.9% of the participants or 3 participants) and bilateral transtibial users were more than bilateral transfemoral (1.3% of the participants or 1 participants). Figure 10

4.2.5 Duration (Day/Month/year) of using prosthesis of the participants

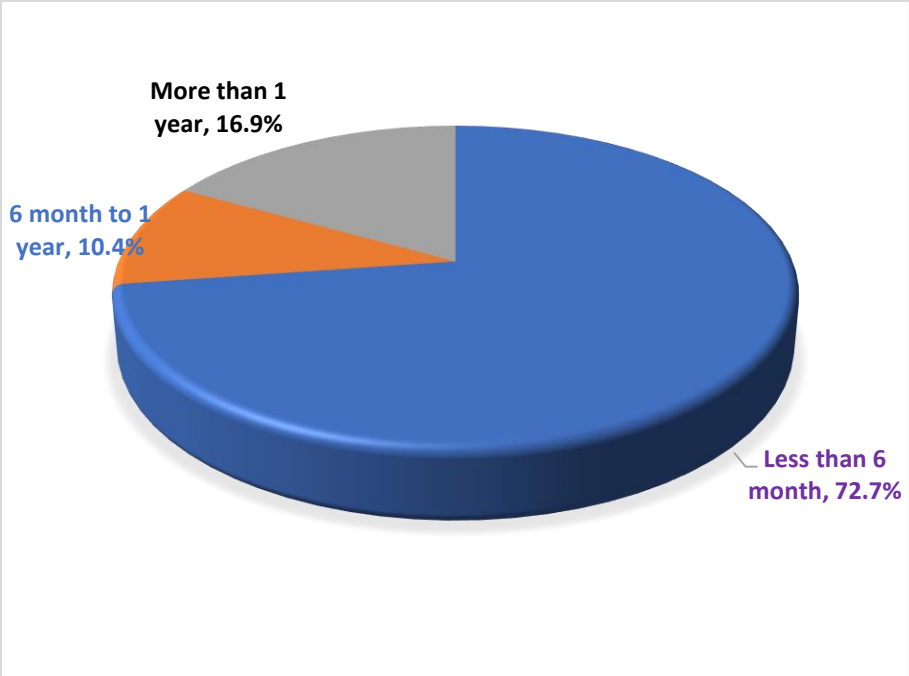


Figure 11: Duration (Day/Month/year) of using prosthesis

In this study, 72.7% of the participants or 56 participant uses prosthesis less than 6 month, 10.4 % of the participants or 8 participant uses prosthesis from 6 month to 1 year, 16.9% of the participants or 13 participant uses prosthesis more than 1 year. (Figure 11)

4.2.6 Duration(hour) of using prosthesis of the participants

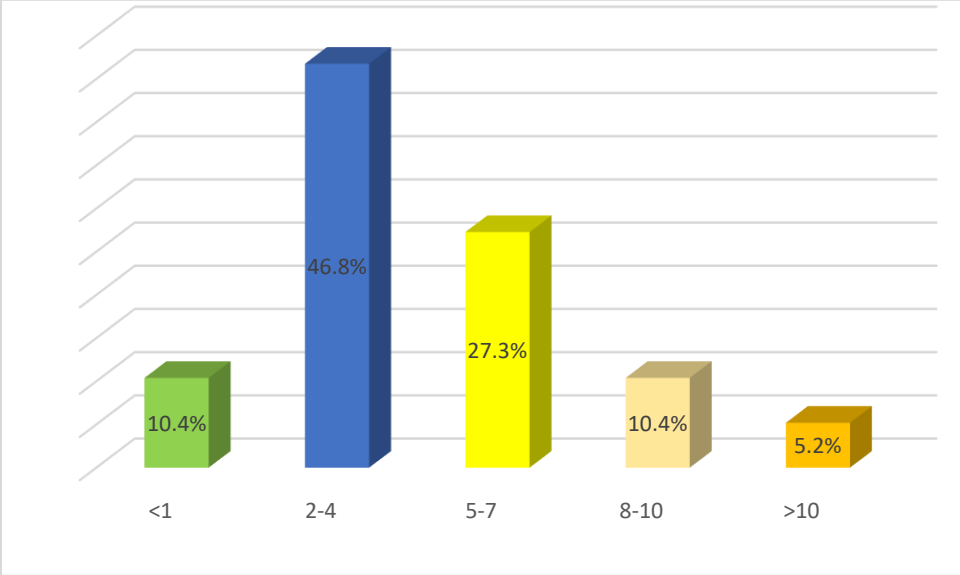


Figure 12: Duration(hour) of using prosthesis

Demographic data shows that among 77 participants, 10.4% of the participants or 8 participant uses prosthesis > 1 hour, 46.8% of the participants or 36 participant uses prosthesis from 2 to 4 hour, 27.3% of the participants or 21 participant uses prosthesis from 5 to 7 hour, 10.4% of the participants or 8 participant uses prosthesis from 8 to 10 hour, 5.2% of the participants or 4 participant uses prosthesis >10 hour. (Figure 12)

4.2.7 Ability of getting up from chair by using prosthesis

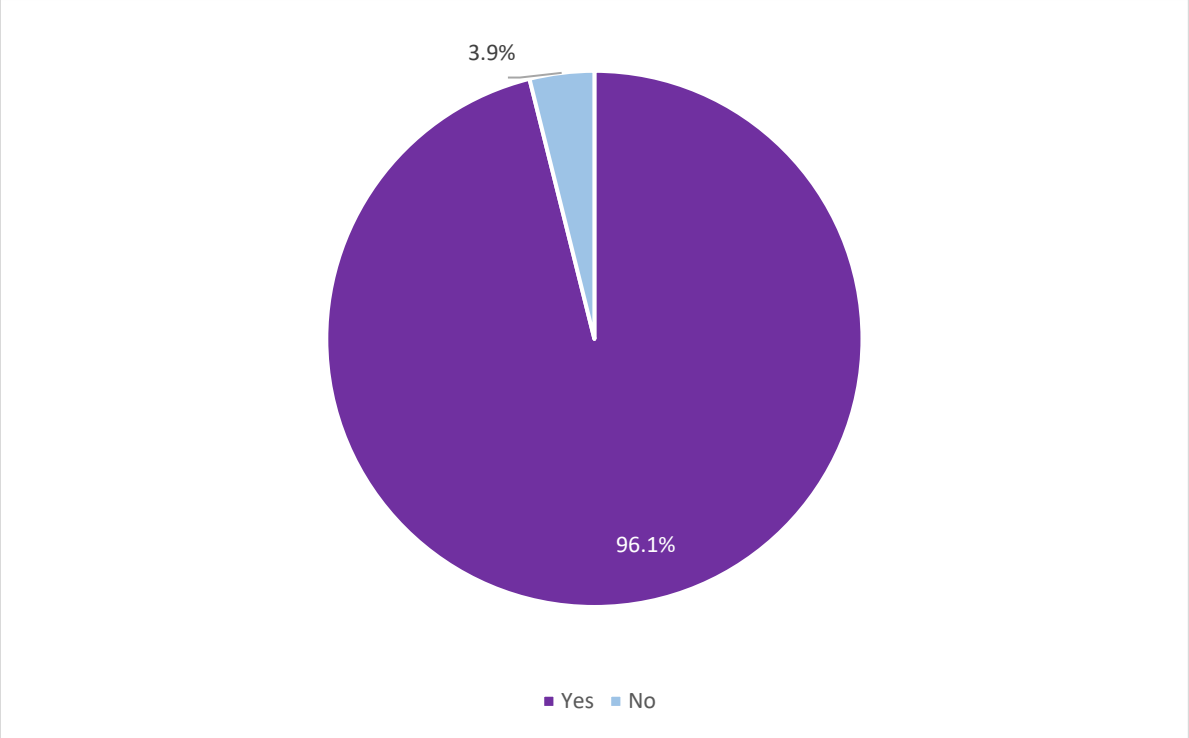


Figure 13: Ability of getting up from chair by using prosthesis

Among all of lower limb prosthesis users most of the participants 96.1% of the participants or 74 participants said yes, that means they were able to get up from chair by using the prosthesis and 3.9% of the participants or 3 participants said no, that means they were not able to get up from chair by using the prosthesis. (Figure 13)

4.2.8 Ability of walking in home by using prosthesis of the participants

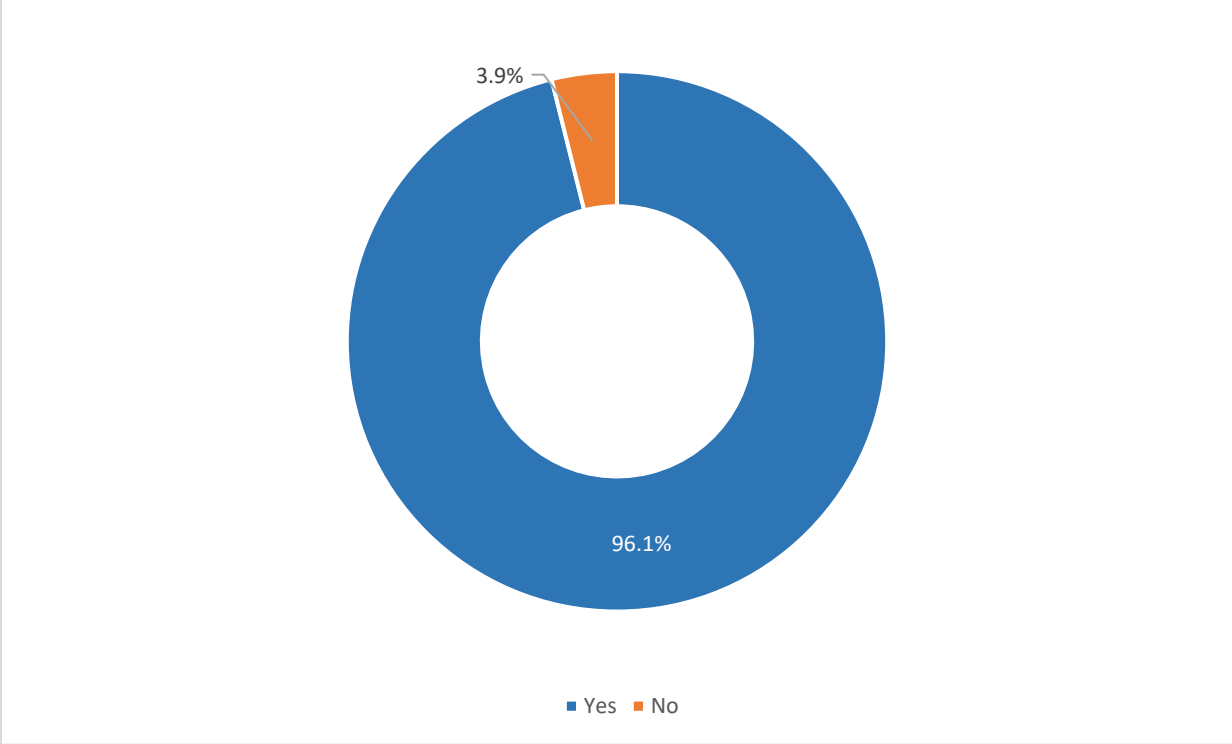


Figure 14: Ability of walking in home by using prosthesis

Among all of lower limb prosthesis users most of the participants 96.1% of the participants or 74 participants said yes, that means they were able to walk in home by using the prosthesis and 3.9% of the participants or 3 participants said no, that means they were not able to walk in home by using the prosthesis. It also shows that rate of walking ability in the home is greater than the inability. (Figure 14)

4.2.9 Ability of walking outside on uneven surface by using prosthesis

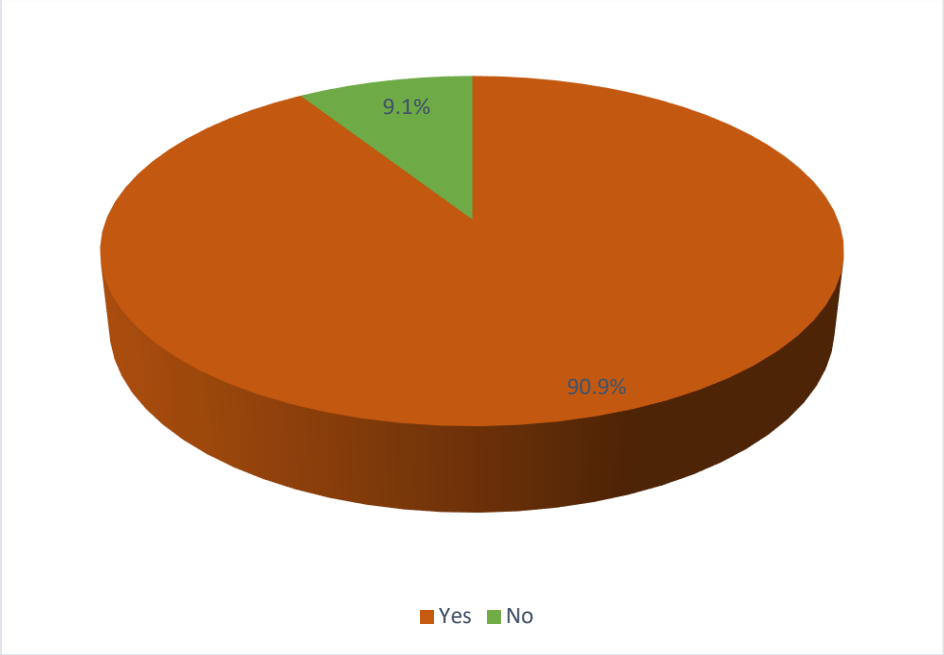


Figure 15: Ability of walking outside on uneven surface

Among all of lower limb prosthesis users most of the participants 90.9% of the participants or 70 participants said yes, that means they were able to walk outside on uneven surface by using the prosthesis and 9.1% of the participants or 7 participants said no, that means they were not able to walk outside on uneven surface by using the prosthesis. It also shows that rate of walking ability of outside on uneven surface is greater than the inability. (Figure 15)

4.2.10 Ability of walking on inclement weather by using prosthesis

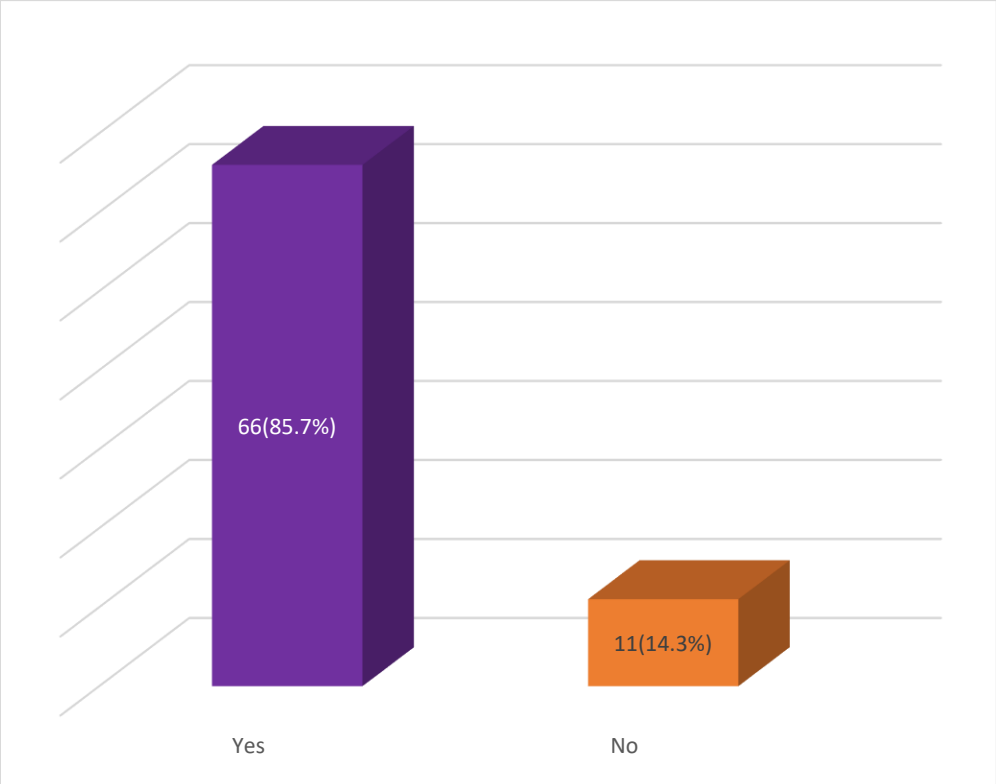


Figure 16: Ability of walking on inclement weather by using prosthesis

Among all of lower limb prosthesis users most of the participants 85.7% of the participants or 66 participants said yes, that means they were able to walk on inclement weather by using the prosthesis and 14.3% of the participants or 11 participants said no, that means they were not able to walk on inclement weather by using the prosthesis. It also shows that rate of walking ability on inclement weather is greater than the inability. (Figure 16)

4.2.11 Ability to go up few steps without handrail by using prosthesis

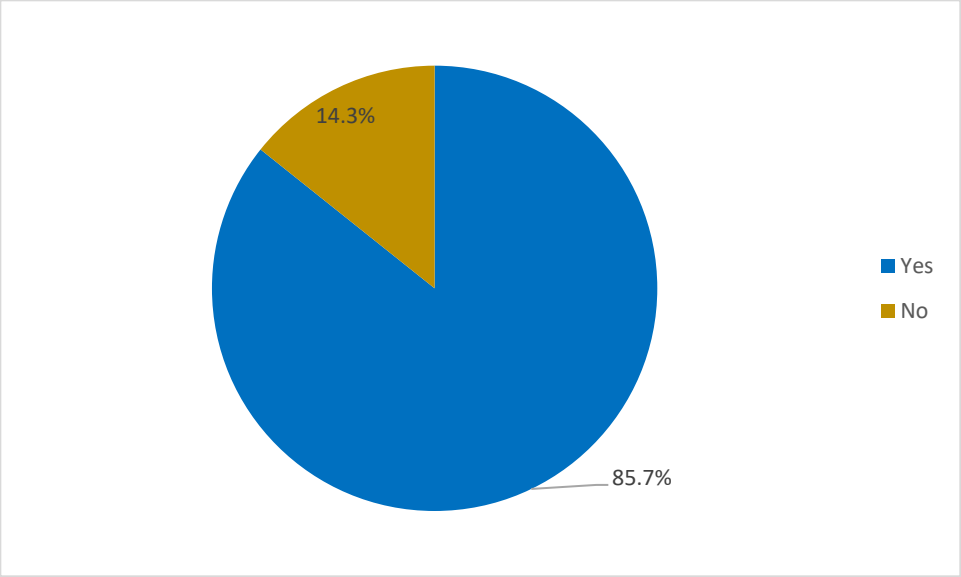


Figure 17: Ability to go up few steps without handrail by using prosthesis

Among all lower limb prosthesis users most of the participants 85.7% of the participants or 66 participants said yes, that means they were able to go up few steps without handrail by using the prosthesis and 14.3% of the participants or 11 participants said no, that means they were not able to go up few steps without handrail by using the prosthesis. It also shows that rate of go up few steps without handrail is greater than the inability to go up few steps without handrail. (Figure 17)

4.2.12 Ability to get down without handrail by using prosthesis

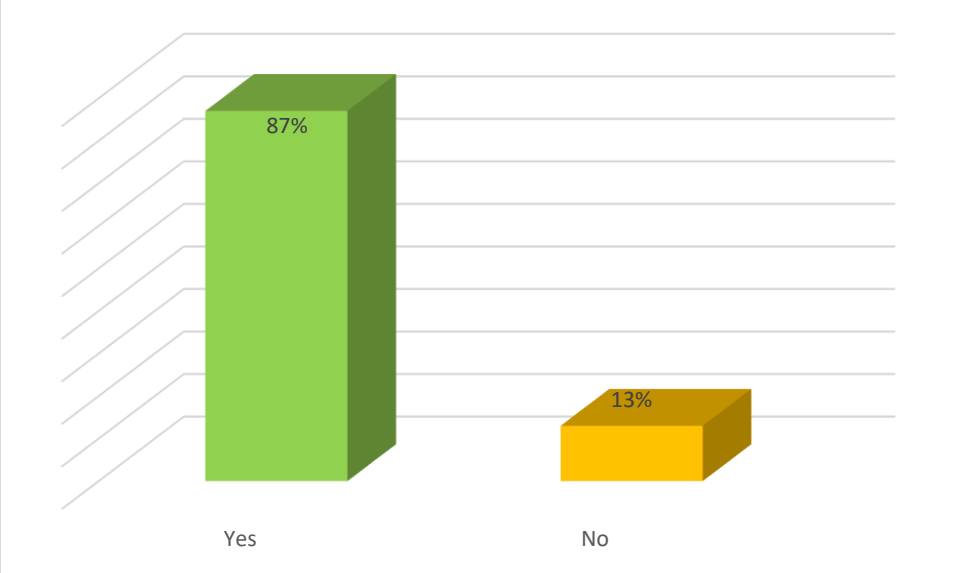


Figure 18: Ability to get down without handrail by using prosthesis

Among all lower limb prosthesis users most of the participants 87% of the participants or 67 participants said yes, that means they were able to go up few steps without handrail by using the prosthesis and 13% of the participants or 10 participants said no, that means they were not able to get down few steps without handrail by using the prosthesis. It also shows that rate of get down few steps without handrail is greater than the inability to get down few steps without handrail. (Figure 18)

4.3 Quality of life

SF-36 consists of eight scaled scores, which are the sum of the question in section. The eight sections are physical functioning, Role limitation due to physical health, Role limitation due to emotional problem, Bodily pain, General health, Vitality, Social functioning and Mental health. Each scale is directly transformed into a 0-100 scale on the assumption that each question carries equal weight (ware et al., 2000). In this study the scale 0-100 is subdivided into four sections. Score 0-25 indicates poor status, score 26-50 indicates poor status, score 51-75 indicates fair status and Score 76-100 indicates good status of all domains.

Table -2: Scoring Categories of SF-36v2 scale

Score (0-25)	Very poor status
Score (26-50)	Poor status
Score (51-75)	Fair status
Score (76-100)	Good status

4.3.1: General health

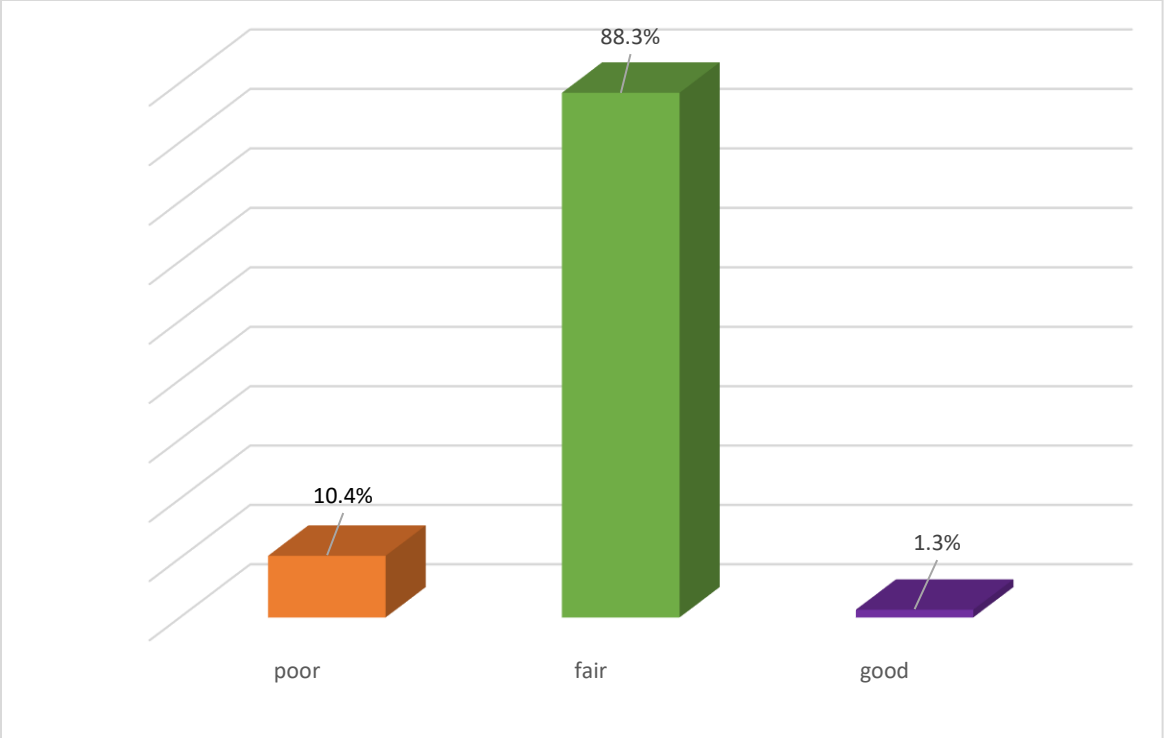


Figure 19: General health of the participants

Among the 77 participants, 10.4% of participants or 8 participants have poor health status, 88.3% of participants or 68 participants have fair health status, and 1.3% or 1 participants have good health status. So, this demographic data shows that among 77 participants, fair health status is higher than poor status and poor status is higher than the good status. That means good status is the lowest. (Figure 19)

4.3.2: Physical functioning

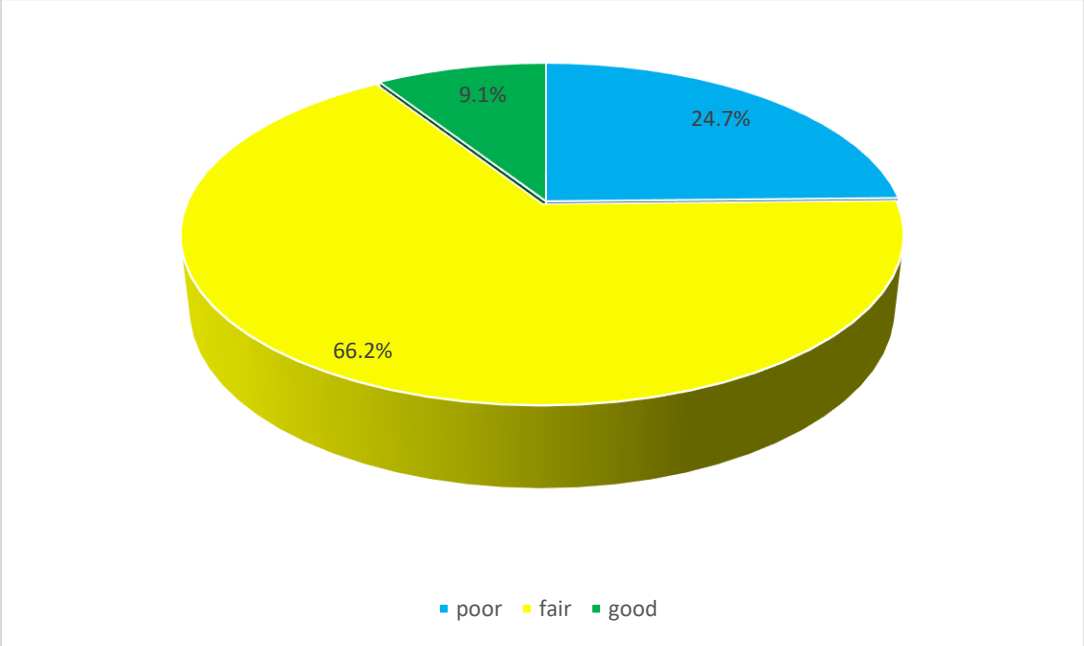


Figure 20: Physical functioning of the participants

Among the 77 participants, 66.2% of participants or 51 participants have fair status, 24.7% of participants or 19 participants have poor status, and 9.1% or 7 participants have good status. So, this demographic data shows that among 77 participants, fair status is higher than poor status and poor status is higher than the good status. That means good status is the lowest. (Figure 20)

4.3.3: Role limitation due to physical health

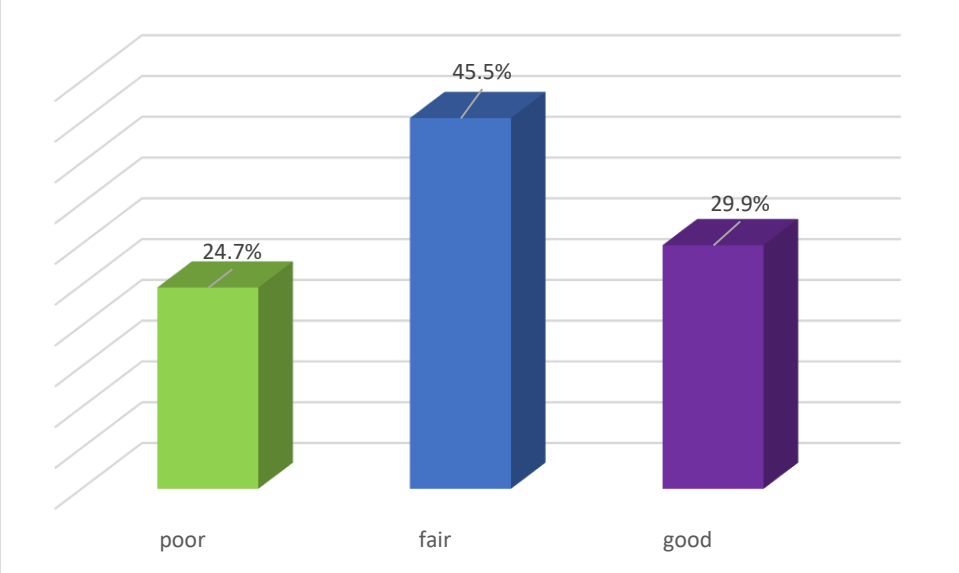


Figure 21: Role limitation due to physical health of the participants

Among the 77 participants, 29.9% of participants or 23 participants have good status, 45.5% of participants or 35 participants have fair status, and 24.7% or 19 participants have poor status. So, this demographic data shows that among 77 participants, fair status is higher than good status and good status is higher than the poor status. That means poor status is the lowest. (Figure 21)

4.3.4: Role limitation due to emotional problems

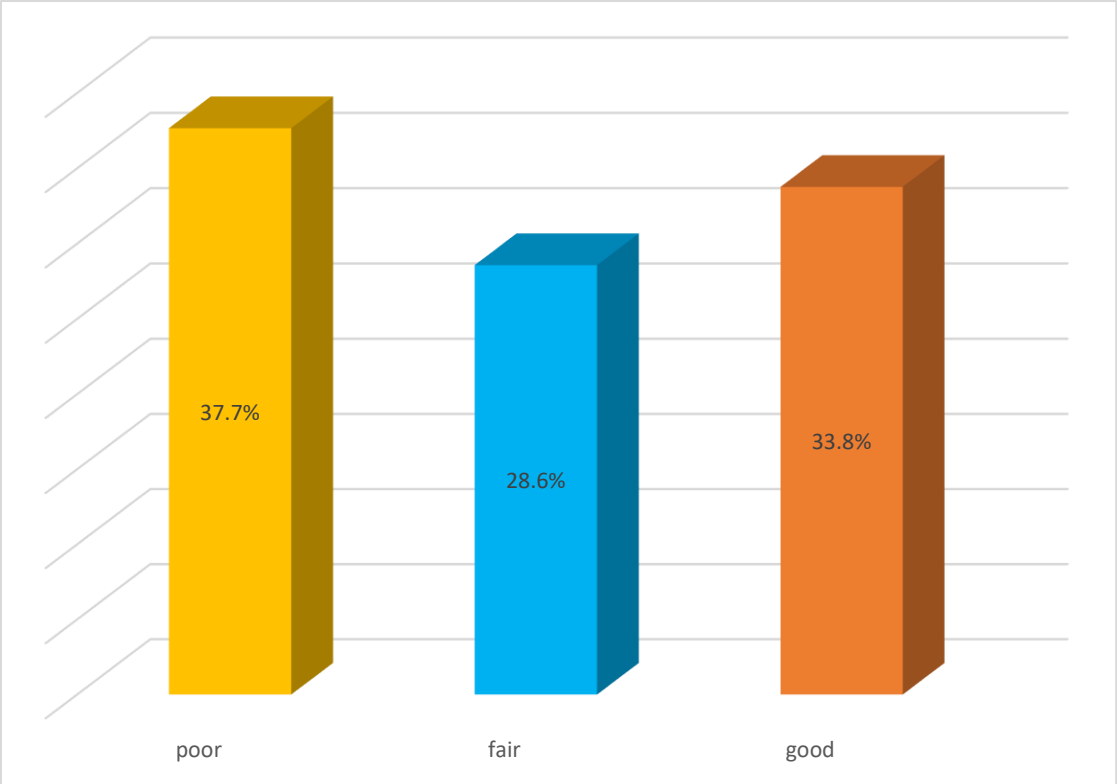


Figure 22: Role limitation due to emotional problems of the participants

Among the 77 participants, 37.7% of participants or 29 participants have poor status, 28.6% of participants or 22 participants have fair status, and 33.8% or 26 participants have good status. So, this demographic data shows that among 77 participants, poor status is higher than good status and good status is higher than the fair status. That means fair status is the lowest. (Figure 22)

4.3.5: Social functioning

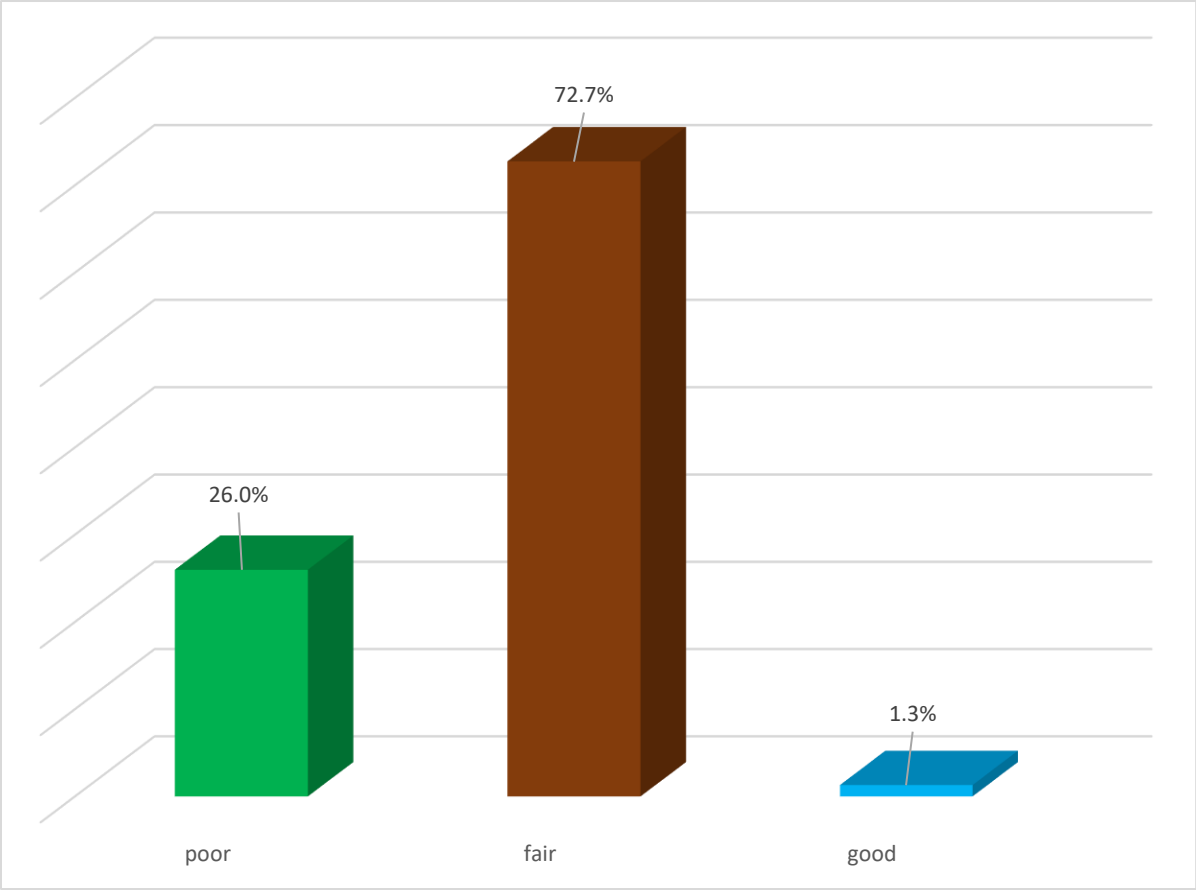


Figure 23: Social functioning of the participants

Among the 77 participants, 26% of participants or 20 participants have poor status, 72.7% of participants or 56 participants have fair status, and 1.3% or 1 participants have good status. So, this demographic data shows that among 77 participants, poor status is higher than fair status and fair status is higher than the good status. That means good status is the lowest. (Figure 23)

4.3.6: Emotional well being

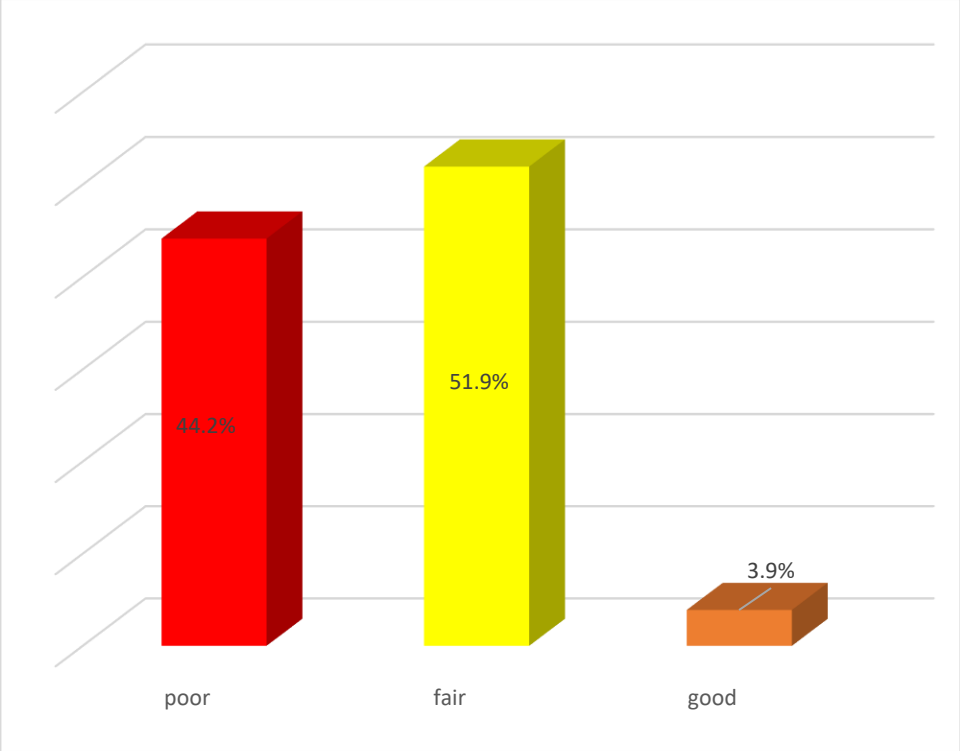


Figure 24: Emotional wellbeing of the participants

Among the 77 participants, 3.9% of participants or 3 participants have good status, 51.9% of participants or 40 participants have fair status, and 44.2% or 34 participants have poor status. So, this demographic data shows that among 77 participants, fair status is higher than poor status and poor status is higher than the good status. That means good status is the lowest. (Figure 24)

4.3.7: Pain

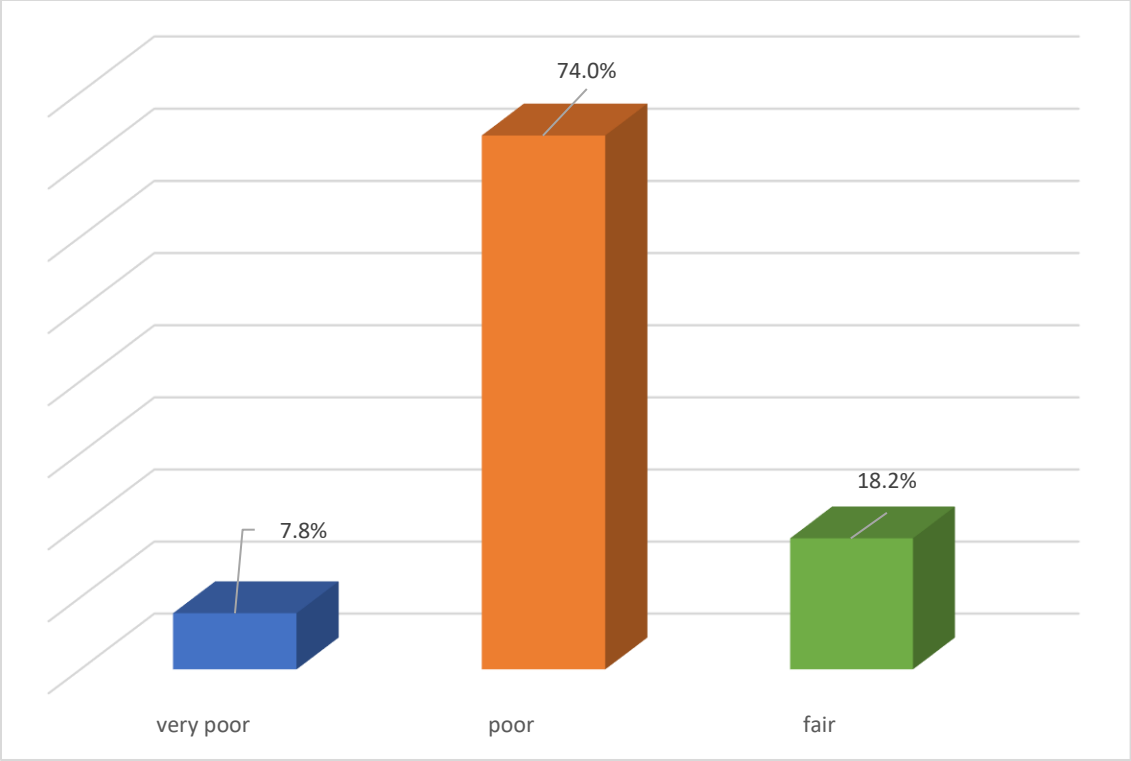


Figure 25: Pain of the participants

Among the 77 participants, 7.8% of participants or 6 participants have very poor status, 74% of participants or 57 participants have poor status, and 18.2% or 14 participants have fair status. So, this demographic data shows that among 77 participants, very poor status is higher than poor status and poor status is higher than the fair status. That means fair status is the lowest. (Figure 25)

4.3.8: Energy

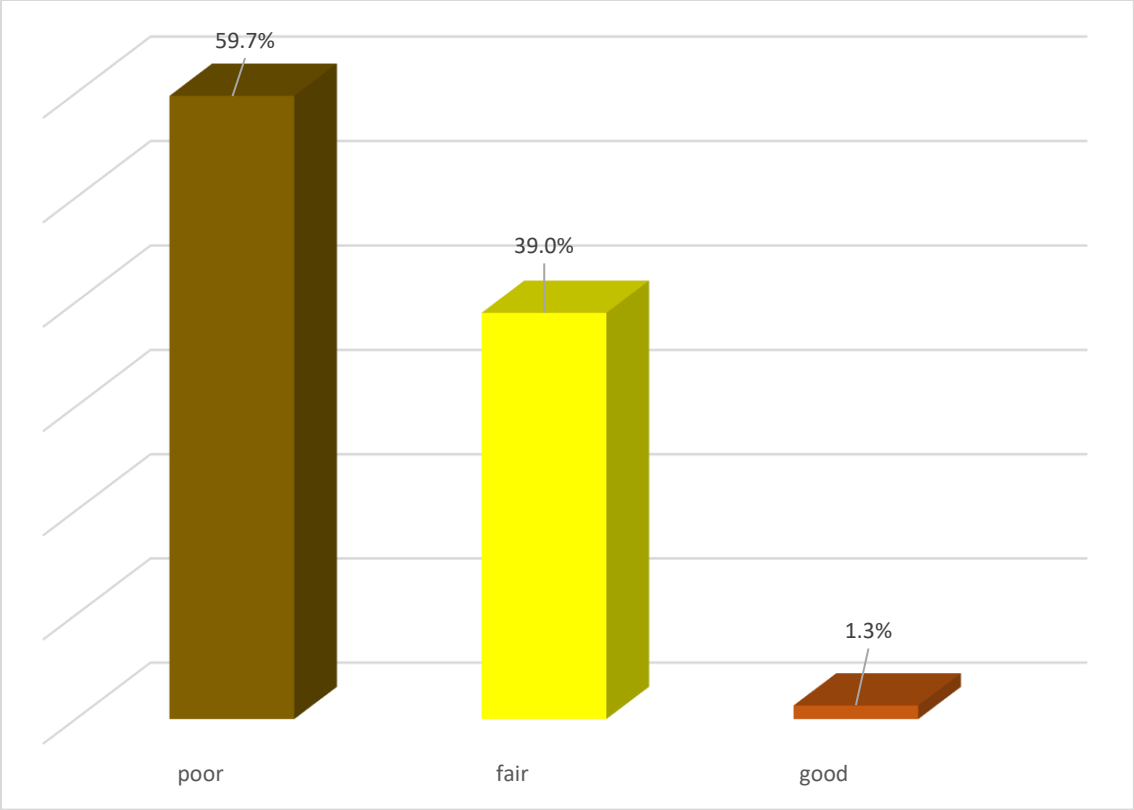


Figure 26: Energy of the participants

Among the 77 participants, 59.7% of participants or 46 participants have poor status, 39% of participants or 30 participants have fair status, and 1.3% or 1 participants have good status. So, this demographic data shows that among 77 participants, poor status is higher than fair status and fair status is higher than the good status. That means good status is the lowest. (Figure 26)

Table 03: Categorized level of different domains of SF-36 Quuestionnaire

Domains	Questions numbers	Score
General health	1, 2, 34, 36	(1) = 100 (2) = 75 (3) = 50 (4) = 25 (5) = 0
	33, 35	(1) = 0 (2) = 25 (3) = 50 (4) = 75 (5) = 100
Physical Functioning	3,4,5,6,7,8,9,10,11,12	(1) = 0 (2) = 100
Role limitations due to physical health	13,14,15, 16	(1) = 0 (2) = 100
Role limitations due to emotional problems	17,18,19	(1) = 0 (2) = 100
Emotional well being	24,25,28	(1) = 0 (2) = 20 (3) = 40 (4) = 60 (5) = 80 (6) = 100
	26,30	(1) = 100 (2) = 80 (3) = 60 (4) = 40 (5) = 20 (6) = 0
Social functioning	20	(1) = 100 (2) = 75 (3) = 50 (4) = 25 (5) = 0
	32	(1) = 0 (2) = 25 (3) = 50 (4) = 75 (5) = 100
Pain	21	(1) = 100 (2) = 80 (3) = 60 (4) = 40 (5) = 20

		(6) = 0
	22	(1) = 100 (2) = 75 (3) = 50 (4) = 25 (5) = 0
Energy	23,27	(1) = 100 (2) = 80 (3) = 60 (4) = 40 (5) = 20 (6) = 0
	29,31	(1) = 0 (2) = 20 (3) = 40 (4) = 60 (5) = 80 (6) = 100

(Doosti-Irani et al., 2018)

4.4 Association between sociodemographic information and Quality of life

4.4.1 Table: Association between age and quality of life

In Table- 02: This study found an association in between Age and quality of life (General health, pain, energy) among the participants. Age group 19-30 had found statistically significant with general health where the mean±SE 329.41±9.10, P value was 0.023. P<0.05. which may the highest among the often age group. Age group 31-42 had found statistically significant with pain where the mean±SE 138.24±8.29, P value was 0.038. P<0.05. which may the highest among the often age group. Age group <18 had found statistically significant with energy where the mean±SE 220±16.66, P value was 0.002. P<0.05. which may the highest among the often age group.

Table 4: Association between age and quality of life

Variables	Age	N	Mean±SE	Observed anova value (F)	P value
General health	<18	9	322.22±21.42	3.03	**.023**
	19-30	34	329.41±9.10		
	31-42	17	305.88±18.50		
	43-54	7	321.43±19.99		
	>54	10	257.50±12.38		
Physical functioning	<18	9	522.22±37.37	1.38	.248
	19-30	34	448.53±37.73		
	31-42	17	429.41±65.45		
	43-54	7	350.00±83.09		
	>54	10	310.00±69.44		
Role limitation due to physical health	<18	9	222.22±49.37	.681	.607
	19-30	34	170.59±25.86		
	31-42	17	182.35±34.55		
	43-54	7	200.00±48.79		
	>54	10	120.00±38.87		
Role limitation due to emotional problems	<18	9	133.33±47.14	.846	.501
	19-30	34	126.47±18.55		
	31-42	17	111.76±28.28		
	43-54	7	71.43±35.95		
	>54	10	70.00±21.34		
Social Functioning	<18	9	125.00±8.33	2.28	.069
	19-30	34	111.76±4.74		
	31-42	17	116.18±10.04		
	43-54	7	114.29±10.71		
	>54	10	85.00±10		
Emotional well being	<18	9	255.56±13.24	.210	.932
	19-30	34	242.94±10.38		
	31-42	17	247.06±12.59		
	43-54	7	242.86±19.72		
	>54	10	234.00±11.94		
Pain	<18	9	137.78±7.27	2.69	**.038**
	19-30	34	116.47±5.40		
	31-42	17	138.24±8.29		
	43-54	7	126.43±8.14		
	>54	10	105.00±12.15		
Energy	<18	9	220.00±16.66	4.76	**.002**
	19-30	34	198.82±6.14		
	31-42	17	204.71±10.36		
	43-54	7	211.43±19.44		
	>54	10	146.00±14.31		

4.4.2 Association between Gender and quality of life

In Table- 03: This study found an association in between Gender and quality of life (General health, social functioning, and energy) among the participants. Female had found statistically significant with general health where the mean±SE347.92±13.221, P value was .034. P<0.05. which may the highest among the often gender group. Female had found statistically significant with social functioning where the mean±SE 129.17±6.76, P value was .035. P<0.05. which may the highest among the often gender group. Female had found statistically significant with energy where the mean±SE 223.33±10.39, P value was .028, P<0.05. which may the highest among the often gender group.

Table 5: Association between Gender and quality of life

Variables	Gender	N	Mean±SE	Observed anova value (F)	P value
General health	male	65	306.92±7.781	4.64	**.034**
	female	12	347.92±13.221		
Physical functioning	male	65	410.77±28.76	1.920	.170
	female	12	508.33±9.55		
Role limitation due to physical health	male	65	173.85±17.442	.44	.834
	female	12	183.33±45.782		
Role limitation due to emotional problems	male	65	112.31±13.066	.013	.908
	female	12	108.33±37.856		
Social Functioning	male	65	107.69±4.09	4.16	**.035***
	female	12	129.17±6.76		
Emotional well being	male	65	240.92±6.58	1.60	.209
	female	12	261.67±13.36		
Pain	male	65	121.62±4.17	.947	.334
	female	12	131.67±7.96		
Energy	male	65	192±5.69	4.99	**.028**
	female	12	223.33±10.39		

4.4.3 Association between Educational level and quality of life

In Table- 04: This study found that there is no association between educational level and quality of life. All the p value is higher than P<0.05.

Table 6: Association between Educational level and quality of life

Variables	Educational level	N	Mean±SE	Observed Anova value (F)	P value
General health	No formal education	7	300±30.861	.545	.703
	primary	20	313.75±11.10		
	Secondary	24	319.79±10.63		
	Higher secondary	16	298.44±13.20		
	Graduate and above	10	330±32.01		
Physical functioning	No formal education	7	364.29±95.56	1.79	.138
	primary	20	467.50±39.11		
	Secondary	24	364.58±43.76		
	Higher secondary	16	406.25±61.21		
	Graduate and above	10	565±80.98		
Role limitation due to physical health	No formal education	7	71.43±56.54	2.37	.060
	primary	20	170±30		
	Secondary	24	187.50±28.43		
	Higher secondary	16	150±32.91		
	Graduate and above	10	270±44.84		
Role limitation due to emotional problems	No formal education	7	42.86±42.85	1.49	.212
	primary	20	105±26.63		
	Secondary	24	108.33±21.63		
	Higher secondary	16	118.75±18.75		

	Graduate and above	10	170±39.58		
Social Functioning	No formal education	7	107.14±8.98	.701	.594
	primary	20	105±8.03		
	Secondary	24	115.63±5.17		
	Higher secondary	16	106.25±6.65		
	Graduate and above	10	122.50±16.43		
Emotional well being	No formal education	7	214.29±17.84	1.18	.326
	primary	20	234±13.30		
	Secondary	24	247.50±10.41		
	Higher secondary	16	257.50±13.40		
	Graduate and above	10	256±11.47		
Pain	No formal education	7	122.86±12.33	1.30	.277
	primary	20	125.75±6.45		
	Secondary	24	123.96±5.97		
	Higher secondary	16	109.38±8.51		
	Graduate and above	10	138.50±13.82		
Energy	No formal education	7	188.57± 15.02	.187	.944
	primary	20	197± 9.76		
	Secondary	24	193.33± 10.19		
	Higher secondary	16	203.75± 9.16		
	Graduate and above	10	200±19.55		

4.4.4 Association between Marital status and quality of life

This study found that there is no association between Marital status and quality of life. All the p value is higher than P<0.05.

Table 07: Association between Marital status and quality of life

Variable	Marital status	N	Mean±SE	Observed Anova value (F)	P value
General health	Married	44	303.41±9.87	2.67	.106
	Unmarried	33	326.52±9.06		
Physical functioning	Married	44	419.32±34.37	.088	.767
	Unmarried	33	434.85±39.19		
Role limitation due to physical health	Married	44	177.27±20.26	.019	.891
	Unmarried	33	172.73±26.92		
Role limitation due to emotional problems	Married	44	104.55±15.57	.439	.509
	Unmarried	33	121.21±20.30		
Social Functioning	Married	44	105.11±5.36	3.51	.065
	Unmarried	33	118.94±4.62		
Emotional well being	Married	44	236.82±7.63	2.04	.157
	Unmarried	33	253.94±9.35		
Pain	Married	44	123.64±5.34	.019	.890
	Unmarried	33	122.58±5.14		
Energy	Married	44	190.91±7.28	1.76	.188
	Unmarried	33	204.85±7.23		

4.4.5 Association between living area and quality of life

This study found that there is no association between living area and quality of life. All the p value is higher than P<0.05.

Table 08: Association between living area and quality of life

Variable	living area	N	Mean±SE	Observed Anova value (F)	P value
General health	Rural	57	312.28±8.16	.951	.391
	Urban	14	328.57±17.35		
	Semi urban	6	287.50±23.93		
Physical functioning	Rural	57	403.51±32.44	1.10	.338
	Urban	14	485.71±38.66		
	Semi urban	6	500.00±63.24		
Role limitation due to physical health	Rural	57	184.21±19.02	.953	.390
	Urban	14	171.43±41.17		
	Semi urban	6	100.00±36.51		
Role limitation due to emotional problems	Rural	57	122.81±14.38	2.71	.073
	Urban	14	107.14±30.49		
	Semi urban	6	16.67±16.66		
Social Functioning	Rural	57	110.09±4.02	1.05	.353
	Urban	14	107.14±10.94		
	Semi urban	6	129.17±11.93		
Emotional well being	Rural	57	250.88±6.86	1.85	.164
	Urban	14	225.71±11.75		
	Semi urban	6	223.33±28		
Pain	Rural	57	122.54±4.36	.260	.772
	Urban	14	121.79±9.81		
	Semi urban	6	132.50±10.06		
Energy	Rural	57	202.46±6.13	1.83	.167
	Urban	14	177.14±10.02		
	Semi urban	6	190.00±21.13		

4.4.6 Association between Occupation before amputation and quality of life

This study found an association in between Occupation before amputation and quality of life. (General health, physical functioning, and Social Functioning). Non-government employee had found statistically significant with general health where the mean±SE343.18±18.49, P value was .041. P<0.05. which may the highest among the often occupation group. Student had found statistically significant with physical functioning where the mean±SE 523.91±44.10, P value was .016. P<0.05. which may the highest among the often gender group. Housewife had found statistically significant with where the mean±SE 129.35±5.59, P value was .008, P<0.05. which may the highest among the previous occupation group.

Table 09: Association between Occupation before amputation and quality of life

Variable	Occupation before amputation	N	Mean±SE	Observed Anova value (F)	P value
General health	Non-government employee	11	343.18±18.49	2.45	**.041**
	Businessman	7	310.71±28.79		
	Student	23	331.52±11.35		
	housewife	2	300.00±0		
	Day laborer	9	322.22±24.80		
	Unemployed	25	282.00±10.55		
Physical functioning	Non-government employee	11	481.82±49.20	3.01	**.016**
	Businessman	7	385.71±82.16		
	Student	23	523.91±44.10		
	housewife	2	500.00±50		
	Day laborer	9	466.67±62.36		
	Unemployed	25	302.00±47.73		
Role limitation due to physical health	Non-government employee	11	245.45±43.40	1.50	.200
	Businessman	7	100.00±21.82		
	Student	23	200.00±30.15		
	housewife	2	150.00±150		
	Day laborer	9	111.11±51.22		
	Unemployed	25	168.00±28.11		

Role limitation due to emotional problems	Non-government employee	11	163.64±38.78	1.47	.208
	Businessman	7	57.14±20.20		
	Student	23	134.78±25.62		
	housewife	2	100.00±100		
	Day laborer	9	66.67±37.26		
	Unemployed	25	100.00±17.32		
Social Functioning	Non-government employee	11	118.18±10.16	3.41	**.008**
	Businessman	7	100.00±19.67		
	Student	23	129.35±5.59		
	housewife	2	125.00±25		
	Day laborer	9	94.44±13.67		
	Unemployed	25	99.00±3.37		
Emotional well being	Non-government employee	11	263.64±11.38	1.90	.104
	Businessman	7	262.86±13.40		
	Student	23	255.65±11.24		
	housewife	2	250.00±10		
	Day laborer	9	208.89±23.83		
	Unemployed	25	232.00±9.73		
Pain	Non-government employee	11	123.18±9.07	1.03	.406
	Businessman	7	130.71±16.59		
	Student	23	128.70±7.25		
	housewife	2	132.50±22.50		
	Day laborer	9	133.33±13.35		
	Unemployed	25	111.60±5.06		
Energy	Non-government employee	11	218.18±11.58	1.76	.131
	Businessman	7	188.57±21.331		
	Student	23	209.57±9.31		
	housewife	2	210.00±10		
	Day laborer	9	191.11±12.07		
	Unemployed	25	179.20±9.41		

4.4.7 Association between present occupation and quality of life

This study found an association in between present occupation and quality of life. (Role limitation due to emotional problems, Social Functioning, Emotional wellbeing). Non-government employee had found statistically significant with Role limitation due to emotional problems The mean±SE 170.00±42.29, P value was .041. P<0.31 which is highest between the present occupation. Housewife had found statistically significant with social functioning where the mean±SE 133.33±16.66 P value was .001. P<0.05. which may the highest among the often-present occupation group. Unemployed had found statistically significant with emotional wellbeing where the mean±SE 293.33±26.66, P value was .004, P<0.05. which may the highest among the present occupation group.

Table 10: Association between present occupation and quality of life

Variable	Present occupation	N	Mean±SE	Observed anova value (F)	P value
General health	Non-government employee	10	345.00±20	1.96	.095
	Businessman	5	340.00±37.58		
	Student	19	325.00±12.68		
	housewife	3	341.67±30.04		
	Day laborer	3	266.67±8.33		
	Unemployed	37	296.62±9.93		
Physical functioning	Non-government employee	10	530.00±74.98	1.85	.113
	Businessman	5	430.00±95.65		
	Student	19	494.74±46.50		
	housewife	3	516.67±33.33		
	Day laborer	3	483.33±142.40		
	Unemployed	37	350.00±37.36		
Role limitation due to physical health	Non-government employee	10	220.00±53.33	2.11	.074
	Businessman	5	40.00±24.49		
	Student	19	205.26±32.86		
	housewife	3	266.67±88.19		
	Day laborer	3	266.67±88.19		
	Unemployed	37	151.35±21.44		

Role limitation due to emotional problems	Non-government employee	10	170.00±42.29	2.63	**.031**
	Businessman	5	20.00±20		
	Student	19	142.11±27.90		
	housewife	3	166.67±88.19		
	Day laborer	3	166.67±88.19		
	Unemployed	37	83.78±13.14		
Social Functioning	Non-government employee	10	132.50±11.21	4.83	**.001**
	Businessman	5	130.00±9.35		
	Student	19	123.68±5.88		
	housewife	3	133.33±16.66		
	Day laborer	3	91.67±8.33		
	Unemployed	37	95.95±4.98		
Emotional well being	Non-government employee	10	268.00±12	3.78	.**004**
	Businessman	5	240.00±6.32		
	Student	19	251.58±12.54		
	housewife	3	293.33±26.66		
	Day laborer	3	146.67±29.05		
	Unemployed	37	238.38±8.10		
Pain	Non-government employee	10	135.50±12.46	1.43	.222
	Businessman	5	146.00±9		
	Student	19	125.00±7.05		
	housewife	3	113.33±23.15		
	Day laborer	3	95.00±7.63		
	Unemployed	37	118.92±5.36		
Energy	Non-government employee	10	222.00±12.45	1.58	.175
	Businessman	5	184.00±20.39		
	Student	19	207.37±11.05		
	housewife	3	213.33±13.33		
	Day laborer	3	166.67±24.03		
	Unemployed	37	187.57±7.48		

CHAPTER –V DISCUSSION

This population based cross sectional survey revealed the factors that are related to quality of life of lower limb amputation in Bangladesh. The purpose of the study was to find out the quality of life of lower limb amputee who are using prosthetic device. A study by Christensen et al., 2016 found that he identified HRQoL determinants for veteran amputees included: higher physical activity, years of education, higher phantom pain severity, duration of phantom pain, level of amputation and back pain. Amputees who had received educational services represented a higher percentage of veterans with a good physical HRQoL (40 cases, 87.0%) compared with others (66 cases, 69.5%), (p ¼ 0.02). Likewise, a good mental HRQoL was significantly higher among veterans who received additional education (41 cases, 89.1%) compared to those who had not since the amputation (65 cases, 68.4%), (p ¼ 0.01). Here in my study, found an association in between Age and quality of life (General health, pain, energy) among the participants. Age group 19-30 had found statistically significant with general health where the mean±SE 329.41±9.10, P value was 0.023. P<0.05. which may the highest among the often age group. Age group 31-42 had found statistically significant with pain where the mean±SE 138.24±8.29, P value was 0.038. P<0.05. which may the highest among the often age group. Age group <18 had found statistically significant with energy where the mean±SE 220±16.66, P value was 0.002. P<0.05. which may the highest among the often age group. This study found an association in between Gender and quality of life (General health, social functioning and energy) among the participants. Female had found statistically significant with general health where the mean±SE347.92±13.221, P value was .034. P<0.05. which may the highest among the often gender group. Female had found statistically significant with social functioning where the mean±SE 129.17±6.76, P value was .035. P<0.05. which may the highest among the often gender group. Female had found statistically significant with energy where the mean±SE 223.33±10.39, P value was .028, P<0.05. which may the highest among the often gender group. This study found that there is no association between educational level and quality of life. All the p value is higher than P<0.05. This study found that there is no association between Marital status and quality of life. All the

p value is higher than P<0.05. This study found that there is no association between living area and quality of life. All the p value is higher than P<0.05.

This study found an association in between Occupation before amputation and quality of life. (General health, physical functioning and Social Functioning). Non-government employee had found statistically significant with general health where the mean±SE343.18±18.49, P value was .041. P<0.05. which may the highest among the often occupation group. Student had found statistically significant with physical functioning where the mean±SE 523.91±44.10, P value was .016. P<0.05. which may the highest among the often gender group. Housewife had found statistically significant with where the mean±SE 129.35±5.59, P value was .008, P<0.05. which may the highest among the previous occupation group. This study found an association in between Occupation before amputation and quality of life. (Role limitation due to emotional problems, Social Functioning, Emotional well-being). Non-government employee had found statistically significant with Role limitation due to emotional problems The mean±SE 170.00±42.29, P value was .041. P<0.31 which is highest between the present occupation. Housewife had found statistically significant with social functioning where the mean±SE 133.33±16.66 P value was .001. P<0.05. which may the highest among the often-present occupation group. Unemployed had found statistically significant with emotional wellbeing where the mean±SE 293.33±26.66, P value was .004, P<0.05. which may the highest among the present occupation group.

However, a follow-up study conducted by the review authors found that quality of life was lower in their sample of lower-limb amputees than for the general population, and that higher quality of life was associated with employment status, use of a prosthesis, non-use of assistive devices other than a prosthesis (canes, crutches), lower residual limb and phantom pain, and other comorbidities (Sinha et al., 2011). Here in my study, Quality of life depends on use of prosthetic device, Age, Gender, occupation before amputation and present occupation. Among all lower limb prosthesis users most of the participants uses unilateral transtibial prosthesis (68.8% of the participants or 53 participants) more than unilateral transfemoral (26% of the participants or 53 participants). Unilateral transfemoral users were more than bilateral transtibial (3.9% of the participants or 3 participants) and

bilateral transtibial users were more than bilateral transfemoral (1.3% of the participants or 1 participants). Among the 77 participants, 7.8% of participants or 6 participants have very poor status, 74% of participants or 57 participants have poor status, and 18.2% or 14 participants have fair status. So, this demographic data shows that among 77 participants, very poor status is higher than poor status and poor status is higher than the fair status. That means fair status is the lowest.

A study by Knezevic, et al., 2015 showed that patients with lower extremity amputation scored lower than the control group on all SF- 36 variables (p0.05). Seventeen (61%) patients were with transfemoral, and 11 (39%) with transtibial level of amputation. The patients with transtibial amputations scored higher on physical functioning and general health status variables. Here in my study, I have not seen association between type of amputation and quality of life**.**

Limitation of the study:

The current study had some potential limitations. 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. It was taken only 77 samples. The quality of life of the persons with lower limb prosthesis could not be measured through small sample size. More samples could not able to collect by hospital base selection 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 samples could not arrange for the study. Time and resources were limited which have a great deal of impact on the study.

CHAPTER - VI CONCLUSION & RECOMMENDATION

6.1 Conclusion

Amputation is one of the most common disabilities due to accidents, trauma or birth occurring time. It is a serious condition that affects lives dramatically. It 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. This destructive condition not only affects the patient but also their family. Bangladesh is a developing country with low socio-economic condition and health services are not sufficient in the Government and non-government sector. Although amputation is one of the most serious problems that a person can survive, it is possible to return to a healthy, happy, and productive life after even completing prosthesis. From the moment of injury onward, specialized care is essential for maximization of health as well as psychosocial and functional adaptation. Measurement of the quality of life is not sufficient to describe the situation for individuals using a prosthetic limb. Through my study I've wanted to find out the quality of life of lower limb amputee who are using prosthetic device. In my study I've found that lower limb amputees reported neither good nor poor which is mostly near to fair quality of life. The important role of employment status and use of assistive devices were the key findings of this study. Through this study the authentic quality of life is measured fully, the inner and day to day situations cannot be visible in this study. Assessing QoL in its entirety is challenging because of its multidimensional nature. In the short period of time, it cannot adequately capture the heart of quality of life. This study shows at a glance of the participants' quality of life.

6.2 Recommendations

The aim of this study was to find out the quality of life of lower limb amputee who are using prosthetic device and the result which found from the study has fulfilled the aim of this research project. The following recommendations are- Should take more samples for generating the result and make more valid and reliable. Should do pilot study to establish the appropriateness of the questionnaire. Sample should collect from different hospital, clinic, institute and organization in different district of Bangladesh to generalize the result. This is an undergraduate study and doing the same study at graduate level will give more precise output. There were some limitations 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 amputee patients in Bangladesh for better results and perspectives.

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APPENDIX

সম্মতিপত্র

আসসালামু আলাইকুম/নমস্কার,

আমি অমৃতা চৌধুরী, এই গবেষণা প্রকল্পটি বাংলাদেশ হেলথ প্রফেশন্স ইন্সটিটিউট (বিএইচপিআই) এ পরিচালনা করছি যা আমার চতুর্থ বর্ষ বিএসসি ইন ফিজিওথেরাপি কোর্স অন্তর্ভুক্ত। আমার গবেষণার শিরোনাম হল – **"কৃত্রিম পা ব্যবহারকারীদের জীবনযাত্রার মান"।** এর মাধ্যমে আমি কৃত্রিম পা ব্যাবহারকারীদের জীবনযাত্রার মান জানতে চাই। আমি এখন আপনাকে এ সম্পর্কিত কিছু প্রশ্ন করতে চাচ্ছি। এতে আনুমানিক ২০-৩০ মিনিট সময় নিব।

আমি আপনাকে অবগত করছি যে, এটা আমার গবেষণার অংশ এবং যা অন্য কোন উদ্দেশ্যে ব্যবহার হবেনা। আপনি যেসব তথ্য প্রদান করবেন তার গোপনীয়তা বজায় থাকবে। আমি আরও নিশ্চিত করছি যে, এই তথ্যের উৎস অপ্রকাশিত থাকবে এবং তা শুধু গবেষণার কাজেই ব্যবহৃত হবে।

এই গবেষণায় আপনার অংশগ্রহন স্বেচ্ছাপ্রণোদিত এবং আপনি যেকোন সময় এই গবেষণা থেকে নেতিবাচক ফলাফল ছাড়াই নিজেকে প্রত্যাহার করতে পারবেন। এছাড়াও কোন নির্দিষ্ট প্রশ্ন অপছন্দ হলে সাক্ষাৎকারের সময় সেই প্রশ্নের উত্তর না দেওয়ার অধিকার আপনার আছে।

এই গবেষণার অংশগ্রহণকারী হিসেবে যদি আপনার কোন প্রশ্ন থাকে তাহলে আপনি আমাকে, অমৃতা চৌধুরী (০১৫২১৫৩৭৯৫২) অথবা/এবং আমার সুপারভাইজার অধ্যাপক মোহাম্মদ ওবায়দুল হক(০১৭৩০০৫৯৬৪০), উপাধ্যক্ষ, বিএইচপিআই, সিআরপি, সাভার, ঢাকা-১৩৪৩ তে যোগাযোগ করতে পারেন।

সাক্ষাৎকার শুরু করার আগে আপনার কি কোন প্রশ্ন আছে?

সুতরাং আমি কি আপনার অনুমতিতে এই সাক্ষাৎকার শুরু করতে পারি?

☐ হ্যাঁ ☐ না

১। অংশগ্রহণকারীর সাক্ষর ও তারিখ _____

২। উপাত্ত সংগ্রহকারীর সাক্ষর ও তারিখ _____

৩। গবেষকের স্বাক্ষর ও তারিখ _____

CONSENT STATEMENT

Assalamualaikum/ Namashker,

I am Amrita Chowdhury, 4th professional B. Sc. in Physiotherapy student of Bangladesh Health Professions Institute (BHPI) affiliated to the Faculty of Medicine, University of Dhaka. To obtain my bachelor's degree, I have to conduct a research project and it is a part of my study. My research title is **"Quality of life of lower limb amputee who are using prosthetic device''** By this I would like to know the quality of life of lower limb amputee who are using prosthetic device. Now I want to ask some related questions. This will take approximately 20-30 minutes.

I would like to inform you that this is part of my research, and I will not use it for any other purpose. All information provided by you will be treated as confidential. Moreover, I will ensure you that the source of information remains anonymous, and it will be used only for my research.

Your participation in this research is voluntary and you may withdraw yourself at any time during this research without any negative consequences. You also have the right not to answer a particular question that you do not like or want to answer during interview.

If you have query about the research as a participant, you may contact me (01521537952) and/or my research supervisor Prof. Md. Obaidul Haque (01730059640) Vice principal, BHPI, CRP, Savar, Dhaka-1343.

Do you have any question before I start?

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

☐ Yes ☐ No

Signature and date of the participant _____

Signature and date of the interviewer _____

Signature and date of the witness _____

প্রশ্নপত্র

ক.ব্যাক্তিগত তথ্য

তথ্য গ্রহনের তারিখ	
রোগীর নাম	
ঠিকানা	
মোবাইল নাম্বার (যদি থাকে)	

খ. সমাজ এবং জনতাত্ত্বিক তথ্য

প্রশ্নাবলী		প্রতিক্রিয়া		কোড
১.	বয়স			
২.	লিঙ্গ	১.	পুরুষ	১
		২.	নারী	২
৩.	শিক্ষাগত যোগ্যতা	১.	অশিক্ষিত	১
		২.	প্রাথমিক	২
		৩.	মাধ্যমিক	৩
		৪.	উচ্চমাধ্যমিক	৪
		৫.	স্নাতক বা তদোর্ধ	৫
৪.	বৈবাহিক অবস্থা	১.	বিবাহিত	১
		২.	অবিবাহিত	২
৫.	বসবাসের স্থান	১.	গ্রাম	১
		২.	শহর	২
		৩.	মফস্বল	৩
৬.	অঙ্গহানির পূর্বে পেশা	১.	সরকারি কর্মচারী	১
		২.	বেসরকারি কর্মচারী	২
		৩.	ব্যবসায়ী	৩
		৪.	ছাত্র	৪
		৫.	গৃহিণী	৫
		৬.	অবসরপ্রাপ্ত	৬
		৭.	দিনমজুর	৭
		৮.	বেকার	৮
৭.	বর্তমান পেশা	১.	সরকারি কর্মচারী	১
		২.	বেসরকারি কর্মচারী	২
		৩.	ব্যবসায়ী	৩
		৪.	ছাত্র	৪
		৫.	গৃহিণী	৫
		৬.	অবসরপ্রাপ্ত	৬
		৭.	দিনমজুর	৭
		৮.	বেকার	৮

গ. অঙ্গহানি সম্পর্কিত তথ্য

প্রশ্নাবলী		প্রতিক্রিয়া		কোড
৮.	অঙ্গহানির ধরন	১.	হাঁটুর নিচে	১
		২.	হাঁটুর উপরে	২
		৩.	গোড়ালি	৩
৯.	অঙ্গহানির কারণ	১.	দূর্ঘটনা	১
		২.	রোগগত	২
১০.	অঙ্গহানির তারিখ			
১১.	অঙ্গহানির অবস্থান	১.	ডান	১
		২.	বাম	২
		৩.	উভয় পার্শ্বে	৩
১২.	কৃত্রিম পা-এর ধরণ	১.	হাঁটুর নিচে একপার্শ্বে	১
		২.	হাঁটুর নিচে উভয়পার্শ্বে	২
		৩.	হাঁটুর উপর একপার্শ্বে	৩
		৪.	হাঁটুর উপরে উভয়পার্শ্বে	৪
		৫.	গোড়ালিতে একপার্শ্বে	৫
		৬.	গোড়ালিতে উভয়পার্শ্বে	৬
১৩.	আপনি কতদিন যাবত কৃত্রিম পা ব্যবহার করছেন?	১.	৬ মাসের কম	১
		২.	৬ মাস – ১ বছর	২
		৩.	১ বছরের বেশি	৩
১৪.	আপনি দিনে গড়ে কত ঘন্টা কৃত্রিম পা ব্যবহার করেন?	_____ ঘন্টা		
১৫.	আপনি কি কৃত্রিম পা ব্যবহার করে চেয়ার থেকে উঠতে সক্ষম?	১.	হ্যাঁ	১
		২.	না	২
১৬.	আপনি কি কৃত্রিম পা ব্যবহার করে বাড়িতে হাঁটতে সক্ষম?	১.	হ্যাঁ	১
		২.	না	২
১৭.	আপনি কি কৃত্রিম পা ব্যবহার করে বাড়ির বাহিরে অসমতল ভূমিতে হাঁটতে সক্ষম?	১.	হ্যাঁ	১
		২.	না	২
১৮.		১.	হ্যাঁ	১

	আপনি কি কৃত্রিম পা ব্যবহার করে বাড়ির বাইরে ঝড়ো আবহাওয়ায় হাঁটতে সক্ষম?	২.	না	২
১৯.	আপনি কি কৃত্রিম পা ব্যবহার করে হাতল ছাড়া সিঁড়ির কয়েকটি ধাপ উঠতে পারেন?	১.	হ্যাঁ	১
		২.	না	২
২০.	আপনি কি কৃত্রিম পা ব্যবহার করে হাতল ছাড়া সিঁড়ি থেকে কয়েকটা ধাপ নামতে সক্ষম?	১.	হ্যাঁ	১
		২.	না	২

ঘ. রোগীর জীবনের গুণগতমান

এস এফ ৩৬ প্রশ্নপত্র

এই প্রশ্নগুলোতে আপনার স্বাস্থ্য সম্পর্কে আপনার মতামত জানতে চাওয়া হয়েছে। এই তথ্যগুলি দ্বারা আপনি কি অনুভব করেন এবং কতটা ভালোভাবে আপনার প্রাত্যহিক কর্মসম্পাদনে সক্ষম সে ব্যাপারে নজর রাখতে সাহায্য করবে। এই সমীক্ষাটি সম্পূর্ণ করার জন্য আপনাকে ধন্যবাদ।

নিম্নলিখিত প্রতিটি প্রশ্নের উত্তরগুলোর মাঝে যেটিকে আপনার সবচেয়ে সঠিক বলে মনে হয়, অনুগ্রহপূর্বক সেগুলাতে টিক চিহ্ন দিন।

সাধারণ স্বাস্থ্যঃ

প্রশ্নাবলী		প্রতিক্রিয়া	কোড
১.১	সাধারণভাবে বলতে, আপনার মতে আপনার স্বাস্থ্য হলঃ	১. চমৎকার ২. খুব ভালো ৩. ভালো ৪. মোটামুটি ৫. খারাপ	১ ২ ৩ ৪ ৫
১.২	গত এক বছর এর সাথে তুলনা করলে আপনার সাস্থ্য কেমন?	১. গত এক বছরের তুলনায় এখন অনেক ভালো ২. গত এক বছরের তুলনায় এখন খানিকটা ভালো ৩. প্রায় গত এক বছরের মতন ৪. গত এক বছরের তুলনায় এখন কিছুটা খারাপ ৫. গত এক বছরের তুলনায় এখন অনেক খারাপ	১ ২ ৩ ৪ ৫

কার্যকলাপের সীমাবদ্ধতাঃ

নিম্নলিখিত প্রশ্নগুলো আপনি একটি সাধারণ দিনে যেসব কাজকর্ম করে থাকেন সেই সম্পর্কিত। আপনার স্বাস্থ্য কি আপনার কাজকর্ম বাঁধা হয়ে দাঁড়িয়েছে? যদি হয়, তবে কতটুকু?

প্রশ্নাবলী		প্রতিক্রিয়া	কোড
২.১	খুব পরিশ্রমসাধ্য কাজগুলি, যেমন দৌড়ানো, ভারী জিনিস তোলা শ্রমসাধ্য খেলাধুলা করা	১. হ্যাঁ, অনেকখানি বাঁধা হয়ে দাঁড়িয়েছে ২. হ্যাঁ, খানিকটা বাঁধা হয়ে দাঁড়িয়েছে ৩. না, একেবারেই বাঁধা হয়নি	১ ২ ৩
২.২	অপেক্ষাকৃত কম পরিশ্রমসাধ্য কাজগুলি, যেমন, টেবিল সরানো, ঘর ঝারু দেওয়া, বাগানে কাজ করা অথবা সাইকেল চালানো	১. হ্যাঁ, অনেকখানি বাঁধা হয়ে দাঁড়িয়েছে ২. হ্যাঁ, খানিকটা বাঁধা হয়ে দাঁড়িয়েছে ৩. না, একেবারেই বাঁধা হয়নি	১ ২ ৩
২.৩	মুদিখানা পণ্যদ্রব্য তোলা বহন করা -	১. হ্যাঁ, অনেকখানি বাঁধা হয়ে দাঁড়িয়েছে ২. হ্যাঁ, খানিকটা বাঁধা হয়ে দাঁড়িয়েছে ৩. না, একেবারেই বাঁধা হয়নি	১ ২ ৩
২.৪	কয়েক তলা সিঁড়ি বেয়ে উঠা -	১. হ্যাঁ, অনেকখানি বাঁধা হয়ে দাঁড়িয়েছে ২. হ্যাঁ, খানিকটা বাঁধা হয়ে দাঁড়িয়েছে ৩. না, একেবারেই বাঁধা হয়নি	১ ২ ৩
২.৫	এক তলা সিঁড়ি বেয়ে উঠা -	১. হ্যাঁ, অনেকখানি বাঁধা হয়ে দাঁড়িয়েছে ২. হ্যাঁ, খানিকটা বাঁধা হয়ে দাঁড়িয়েছে ৩. না, একেবারেই বাঁধা হয়নি	১ ২ ৩
২.৬	ঝুঁকে কিছু করা, হাঁটু গেড়ে বসা, নিচু হয়ে কাজ করা -	১. হ্যাঁ, অনেকখানি বাঁধা হয়ে দাঁড়িয়েছে ২. হ্যাঁ, খানিকটা বাঁধা হয়ে দাঁড়িয়েছে ৩. না, একেবারেই বাঁধা হয়নি	১ ২ ৩
২.৭	এক মাইলের বেশি হাঁটা -	১. হ্যাঁ, অনেকখানি বাঁধা হয়ে দাঁড়িয়েছে ২. হ্যাঁ, খানিকটা বাঁধা হয়ে দাঁড়িয়েছে ৩. না, একেবারেই বাঁধা হয়নি	১ ২ ৩
২.৮	কয়েকশত মিটার হাঁটা -	১. হ্যাঁ, অনেকখানি বাঁধা হয়ে দাঁড়িয়েছে ২. হ্যাঁ, খানিকটা বাঁধা হয়ে দাঁড়িয়েছে ৩. না, একেবারেই বাঁধা হয়নি	১ ২ ৩
২.৯	একশো মিটার হাঁটা -	১. হ্যাঁ, অনেকখানি বাঁধা হয়ে দাঁড়িয়েছে ২. হ্যাঁ, খানিকটা বাঁধা হয়ে দাঁড়িয়েছে ৩. না, একেবারেই বাঁধা হয়নি	১ ২ ৩
২.১০	নিজে নিজে গোসল করা বা জামাকাপড় পড়া -	১. হ্যাঁ, অনেকখানি বাঁধা হয়ে দাঁড়িয়েছে ২. হ্যাঁ, খানিকটা বাঁধা হয়ে দাঁড়িয়েছে ৩. না, একেবারেই বাঁধা হয়নি	১ ২ ৩

শারীরিক স্বাস্থ্যজনিত সমস্যাঃ

বিগত ৪ সপ্তাহে, প্রাত্যহিক জীবনের কাজগুলো সম্পাদন করতে গিয়ে আপনার স্বাস্থ্যের জন্য আপনি কী পরিমাণ সমস্যার মুখে পড়েছেন?

প্রশ্নাবলী		প্রতিক্রিয়া	কোড
৩.১	আপনার কর্মস্থলে এবং অন্যান্য কাজগুলোতে আপনি কম সময় দিয়েছেন -	১. হ্যাঁ ২. না	১ ২
৩.২	আপনি যতটুকু চেয়েছিলেন তার চেয়ে কম কাজ করেছেন -	১. হ্যাঁ ২. না	১ ২
৩.৩	আপনার নিজের কাজ বা অন্যান্য কাজেই সীমাবদ্ধ ছিলেন -	১. হ্যাঁ ২. না	১ ২
৩.৪	আপনার নিজের কাজ বা অন্যান্য কাজ করতে গিয়ে অসুবিধা বোধ করেছিলেন -	১. হ্যাঁ ২. না	১ ২

মানসিক স্বাস্থ্যজনিত সমস্যাঃ

বিগত ৪ সপ্তাহে, প্রাত্যহিক জীবনের কাজগুলো সম্পাদন করতে গিয়ে আপনার মানসিক সমস্যার কারণে আপনি নিচের কোন সমস্যাগুলোর মুখে পড়েছেন? (যেমন – মানসিক চাপ বা দুশ্চিন্তাগ্রস্থ হওয়া)

প্রশ্নাবলী		প্রতিক্রিয়া	কোড
৪.১	আপনার কর্মস্থলে এবং অন্যান্য কাজগুলোতে আপনি কম সময় দিয়েছেন	১. হ্যাঁ ২. না	১ ২
৪.২	আপনি যতটুকু চেয়েছিলেন তার চেয়ে কম কাজ করেছেন	১. হ্যাঁ ২. না	১ ২
৪.৩	অন্যান্য সময়ের চেয়ে কাজে কম মনোযোগ দিয়েছেন?	১. হ্যাঁ ২. না	১ ২

সামাজিক কার্যকলাপঃ

প্রশ্নাবলী		প্রতিক্রিয়া	কোড
৫.১	বিগত ৪ সপ্তাহে আপনার শারীরিক বা মানসিক সমস্যাগুলি আপনার পরিবার, বন্ধুবান্ধুব, প্রতিবেশী বা গোষ্ঠীর সাথে সামাজিক কাজকর্মে কতখানি বাঁধা সৃষ্টি করেছে?	১. একেবারে না ২. সামান্য রকম ৩. মাঝামাঝি রকম ৪. অনেকখানি ৫. অত্যন্ত বেশিরকম	১ ২ ৩ ৪ ৫

ব্যথাঃ

প্রশ্নাবলী		প্রতিক্রিয়া	কোড
৬.১	গত ৪ সপ্তাহে, আপনি কতখানি শারীরিক ব্যথা অনুভব করেছেন?	১. একদম ২. খুব অল্প ৩. অল্প ৪. সহনীয় ৫. বেশি ৬. খুব বেশি	১ ২ ৩ ৪ ৫ ৬
৬.২	গত ৪ সপ্তাহে, আপনি কতখানি শারীরিক ব্যথা আপনার প্রাত্যহিক কাজে কি পরিমাণ বাঁধা সৃষ্টি করেছে (ঘরে ও বাইরে)	১. একদম ২. অল্প ৩. সহনীয় ৪. বেশি ৫. খুব বেশি	১ ২ ৩ ৪ ৫

শক্তি এবং আবেগঃ

বিগত ৪ সপ্তাহে, আপনার শারীরিক অবস্থা কেমন ছিল এবং আপনি কেমন অনুভব করেছিলেন নিচের প্রশ্নগুলো সেই সম্পর্কিত। প্রতিটি প্রশ্ন এর জন্য আপনি যেমন অনুভব করেছিলেন সে অনুযায়ী সবচেয়ে প্রযোজ্য উত্তরটি দিন।

গত ৪ সপ্তাহে কতবার –

প্রশ্নাবলী		প্রতিক্রিয়া	কোড
৭.১	আপনি কি খুব স্বাচ্ছন্দবোধ করেছিলেন	১. সবসময় ২. অধিকাংশ সময় ৩. অনেকটা সময় ৪. কিছুটা সময় ৫. সামান্য কিছু সময় ৬. একদমই না	১ ২ ৩ ৪ ৫ ৬
৭.২	আপনি কি খুব বিচলিত ছিলেন?	১. সবসময় ২. অধিকাংশ সময় ৩. অনেকটা সময় ৪. কিছুটা সময় ৫. সামান্য কিছু সময় ৬. একদমই না	১ ২ ৩ ৪ ৫ ৬
৭.৩	আপনি কি এমনই হতাশাগ্রস্থ হয়ে পড়েছিলেন যে কোনকিছুই আপনাকে উদ্দীপিত করতে পারছিল না?	১. সবসময় ২. অধিকাংশ সময় ৩. অনেকটা সময় ৪. কিছুটা সময় ৫. সামান্য কিছু সময় ৬. একদমই না	১ ২ ৩ ৪ ৫ ৬
৭.৪	আপনি কি খুব স্থির এবং শান্ত ছিলেন?	১. সবসময় ২. অধিকাংশ সময় ৩. অনেকটা সময় ৪. কিছুটা সময় ৫. সামান্য কিছু সময় ৬. একদমই না	১ ২ ৩ ৪ ৫ ৬
৭.৫	আপনার কি প্রচুর প্রাণশক্তি ছিল?	১. সবসময় ২. অধিকাংশ সময় ৩. অনেকটা সময় ৪. কিছুটা সময় ৫. সামান্য কিছু সময় ৬. একদমই না	১ ২ ৩ ৪ ৫ ৬
৭.৬	আপনি কি মানসিক হতাশ ও মনমরা হয়ে পড়েছিলেন?	১. সবসময় ২. অধিকাংশ সময় ৩. অনেকটা সময়	১ ২ ৩

		৪. কিছুটা সময়	৪
		৫. সামান্য কিছু সময়	৫
		৬. একদমই না	৬
৭.৭	আপনি কি বিপর্যস্থবোধ করছিলেন?	১. সবসময়	১
		২. অধিকাংশ সময়	২
		৩. অনেকটা সময়	৩
		৪. কিছুটা সময়	৪
		৫. সামান্য কিছু সময়	৫
		৬. একদমই না	৬
৭.৮	আপনি কি আনন্দে ছিলেন?	১. সবসময়	১
		২. অধিকাংশ সময়	২
		৩. অনেকটা সময়	৩
		৪. কিছুটা সময়	৪
		৫. সামান্য কিছু সময়	৫
		৬. একদমই না	৬
৭.৯	আপনি কি ক্লান্ত ছিলেন?	১. সবসময়	১
		২. অধিকাংশ সময়	২
		৩. অনেকটা সময়	৩
		৪. কিছুটা সময়	৪
		৫. সামান্য কিছু সময়	৫
		৬. একদমই না	৬

সামাজিক কার্যক্রমে অংশগ্রহণঃ

প্রশ্নাবলী		**প্রতিক্রিয়া**	**কোড**
৮.১	বিগত ৪ সপ্তাহে, আপনার শারীরিক এবং মানসিক সমস্যাগুলো আপনাকে সামাজিক কার্যক্রমে কী পরিমাণ বাঁধার সৃষ্টি করেছে? (যেমন - বন্ধু-বান্ধব এবং আত্মীয়-স্বজনদের সাথে দেখা করতে যাওয়া	১. সবসময়	১
		২. অধিকাংশ সময়	২
		৩. অনেকটা সময়	৩
		৪. কিছুটা সময়	৪
		৫. একদমই না	৫

সাধারণ স্বাস্থ্যঃ

নিম্নলিখিত বিবৃতিগুলো প্রত্যেকটি আপনার ক্ষেত্রে কতটুকু সত্য বা মিথ্যা?

প্রশ্নাবলী		প্রতিক্রিয়া	কোড
৯.১	আমার মনে হয় অন্যান্য মানুষের চেয়ে একটু বেশি অসুস্থ হয়ে পড়ি -	১. সম্পূর্ণ সত্য ২. অধিকাংশ সত্য ৩. জানি না ৪. অধিকাংশ মিথ্যা ৫. সম্পূর্ণ মিথ্যা	১ ২ ৩ ৪ ৫
৯.২	আমি আমার জানাশোনা মানুষ গুলোর মতই সুস্থ্য -	১. সম্পূর্ণ সত্য ২. অধিকাংশ সত্য ৩. জানি না ৪. অধিকাংশ মিথ্যা ৫. সম্পূর্ণ মিথ্যা	১ ২ ৩ ৪ ৫
৯.৩	আমি আমার স্বাস্থ্য খারাপ হবার আশংকা করি	১. সম্পূর্ণ সত্য ২. অধিকাংশ সত্য ৩. জানি না ৪. অধিকাংশ মিথ্যা ৫. সম্পূর্ণ মিথ্যা	১ ২ ৩ ৪ ৫
৯.৪	আমার স্বাস্থ্য অনেক ভালো	১. সম্পূর্ণ সত্য ২. অধিকাংশ সত্য ৩. জানি না ৪. অধিকাংশ মিথ্যা ৫. সম্পূর্ণ মিথ্যা	১ ২ ৩ ৪ ৫

QUESTIONNAIRE

A. Personal Information

Date of assessment	
Patient's name	
Address	
Contact number (if possible)	

B. Socio-demographic Information

Questions	Response	Code
1.Age		
2. Sex	1. Male 2. Female	1 2
3. Educational level	1. No formal education 2. Primary 3. Secondary 4. Higher secondary 5. Graduate and above	1 2 3 4 5
4. Marital status	1. Married 2. Unmarried	1 2
5. Living area	1. Rural 2. Urban 3. Semi urban	1 2 3
6. Occupation before amputation	1. Government employee 2. Non-government employee 3. Businessman 4. Student 5. Housewife 6. Retired 7. Day laborer 8. Unemployed	1 2 3 4 5 6 7 8

7. Present occupation	1. Government employee 2. Non-government employee 3. Businessman 4. Student 5. Housewife 6. Retired 7. Day laborer 8. Unemployed	1 2 3 4 5 6 7 8

C. Amputation Related Information

Questions	Response	Code
8. Type of amputation	1. Transtibial (TT) 2. Transfemoral (TF) 3. Symes	1. 2. 3.
9. Cause of amputation	1. Accident 2. Pathological	1. 2.
10. Date of amputation		
11. Site of amputation	1. Right 2. Left 3. Bilateral	1. 2. 3.
12. Type of prosthesis	1. Unilateral TT 2. Bilateral TT 3. Unilateral TF 4. Bilateral TF 5. Unilateral Symes 6. Bilateral Symes	1. 2. 3. 4. 5. 6.

13. How long you are using prosthesis?	1. Less than 6 months 2. 6 months – 1 year 3. More than 1 year	1. 2. 3.
14. How many hours do you use the prosthesis in an average per day?		
15. Are you able to get up from chair by using lower limb prosthesis?	1. Yes 2. No	1. 2.
16. Are you able to walk in home by using lower limb prosthesis?	1. Yes 2. No	1. 2.
17. Are you able to walk outside on uneven ground by using lower limb prosthesis?	1. Yes 2. No	1. 2.
18. Are you able to walk outside on inclement weather by using lower limb prosthesis?	1. Yes 2. No	1. 2.
19. Are you able to go up a few steps (stairs) without a handrail by using lower limb prosthesis	1. Yes 2. No	1. 2.
20. Are you able to go down a few steps (stairs) without a handrail by using lower limb prosthesis	1. Yes 2. No	1. 2.

D: participants quality of life scale

SF-36 QUESTIONNAIRE

Please answer the 36 questions of the Health Survey completely, honestly, and without interruptions.

GENERAL HEALTH:

Questions		Response	Code
1.1	In general, would you say your health is?	1. Excellent 2. Very Good 3. Good 4. Fair 5. Poor	1 2 3 4 5
1.2	Compared to one year ago, how would you rate your health in general now?	1. Much better now than one year ago 2. Somewhat better now than one year ago 3. About the same 4. Somewhat worse now than one year ago 5. Much worse than one year ago	1 2 3 4 5

LIMITATIONS OF ACTIVITIES:

The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

Questions		Response	Code
2.1	Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports.	1. Yes, Limited a lot 2. Yes, Limited a Little 3. No, Not Limited at all	1 2 3
2.2	Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	1. Yes, Limited a lot 2. Yes, Limited a Little 3. No, Not Limited at all	1 2 3
2.3	Lifting or carrying groceries	1. Yes, Limited a lot 2. Yes, Limited a Little 3. No, Not Limited at all	1 2 3
2.4	Climbing several flights of stairs	1. Yes, Limited a lot 2. Yes, Limited a Little 3. No, Not Limited at all	1 2 3
2.5	Climbing one flight of stairs	1. Yes, Limited a lot 2. Yes, Limited a Little 3. No, Not Limited at all	1 2 3
2.6	Bending, kneeling, or stooping	1. Yes, Limited a lot 2. Yes, Limited a Little 3. No, Not Limited at all	1 2 3
2.7	Walking more than a mile	1. Yes, Limited a lot 2. Yes, Limited a Little 3. No, Not Limited at all	1 2 3
2.8	Walking several blocks	1. Yes, Limited a lot 2. Yes, Limited a Little 3. No, Not Limited at all	1 2 3

2.9	Walking one block	1. Yes, Limited a lot 2. Yes, Limited a Little 3. No, Not Limited at all	1 2 3
2.10	Bathing or dressing yourself	1. Yes, Limited a lot 2. Yes, Limited a Little 3. No, Not Limited at all	1 2 3

PHYSICAL HEALTH PROBLEMS:

During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

Questions		Response	Code
3.1	Cut down the amount of time you spent on work or other activities	1. Yes 2. No	1 2
3.2	Accomplished less than you would like	1. Yes 2. No	1 2
3.3	Were limited in the kind of work or other activities	1. Yes 2. No	1 2
3.4	Had difficulty performing the work or other activities (for example, it took extra effort)	1. Yes 2. No	1 2

EMOTIONAL HEALTH PROBLEMS:

During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

Questions		Response	Code
4.1	Cut down the amount of time you spent on work or other activities	1. Yes 2. No	1 2
4.2	Accomplished less than you would like	1. Yes 2. No	1 2

4.3	Didn't do work or other activities as carefully as usual	1. Yes 2. No	1 2

SOCIAL ACTIVITIES:

Questions		Response	Code
5.1	Emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?	1. Not at all 2. Slightly 3. Moderately 4. Severe 5. Very Severe	1 2 3 4 5

PAIN:

Questions		Response	Code
6.1	How much bodily pain have you had during the past 4 weeks?	1. None 2. Very Mild 3. Mild 4. Moderate 5. Severe 6. Very Severe	1 2 3 4 5 6
6.2	During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?	1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely	1 2 3 4 5

ENERGY AND EMOTIONS:

These questions are about how you feel and how things have been with you during the last 4 weeks. For each question, please give the answer that comes closest to the way you have been feeling.

Questions		Response	Code
7.1	Did you feel full of pep?	1. All of the time	1
		2. Most of the time	2
		3. A good Bit of the Time	3
		4. Some of the time	4
		5. A little bit of the time	5
		6. None of the Time	6
7.2	Have you been a very nervous person?	1. All of the time	1
		2. Most of the time	2
		3. A good Bit of the Time	3
		4. Some of the time	4
		5. A little bit of the time	5
		6. None of the Time	6
7.3	Have you felt so down in the dumps that nothing could cheer you up?	1. All of the time	1
		2. Most of the time	2
		3. A good Bit of the Time	3
		4. Some of the time	4
		5. A little bit of the time	5
		6. None of the Time	6
7.4	Have you felt calm and peaceful?	1. All of the time	1
		2. Most of the time	2
		3. A good Bit of the Time	3
		4. Some of the time	4
		5. A little bit of the time	5
		6. None of the Time	6
7.5	Did you have a lot of energy?	1. All of the time	1
		2. Most of the time	2
		3. A good Bit of the Time	3
		4. Some of the time	4
		5. A little bit of the time	5
		6. None of the Time	6

7.6	Have you felt downhearted and blue?	1. All of the time 2. Most of the time 3. A good Bit of the Time 4. Some of the time 5. A little bit of the time 6. None of the Time	1 2 3 4 5 6
7.7	Did you feel worn out?	1. All of the time 2. Most of the time 3. A good Bit of the Time 4. Some of the time 5. A little bit of the time 6. None of the Time	1 2 3 4 5 6
7.8	Have you been a happy person?	1. All of the time 2. Most of the time 3. A good Bit of the Time 4. Some of the time 5. A little bit of the time 6. None of the Time	1 2 3 4 5 6
7.9	Did you feel tired?	1. All of the time 2. Most of the time 3. A good Bit of the Time 4. Some of the time 5. A little bit of the time 6. None of the Time	1 2 3 4 5 6

SOCIAL ACTIVITIES:

Questions		**Response**	**Code**
8.1	During the past 4 weeks, how much of the time has your	1. All of the time 2. Most of the time	1 2

	physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?	3. Some of the time 4. A little bit of the time 5. None of the Time	3 4 5

GENERAL HEALTH:

How true or false is each of the following statements for you?

Questions		Response	Code
9.1	I seem to get sick a little easier than other people	1. Definitely true 2. Mostly true 3. Don't know 4. Mostly false 5. Definitely false	1 2 3 4 5
9.2	I am as healthy as anybody I know	1. Definitely true 2. Mostly true 3. Don't know 4. Mostly false 5. Definitely false	1 2 3 4 5
9.3	I expect my health to get worse	1. Definitely true 2. Mostly true 3. Don't know 4. Mostly false 5. Definitely false	1 2 3 4 5
9.4	My health is excellent	1. Definitely true 2. Mostly true 3. Don't know 4. Mostly false 5. Definitely false	1 2 3 4 5

Approval of thesis proposal

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

Ref: CRP/BHPI/IRB/03/2022/570

Date: 02/03/2022

Amrita Chowdhury
4th Year B.Sc. in Physiotherapy
Session: 2016 – 2017
BHPI, CRP, Savar, Dhaka- 1343, Bangladesh

Subject: Approval of the research project proposal **"Quality of life of lower limb amputee who are using prosthetic device"** by ethics committee.

DearAmrita Chowdhury,
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 and Prof. Md. Obaidul Haque as thesis supervisor. The Following documents have been reviewed and approved:

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

The purpose of the study is to find out the quality of life of lower limb amputee who are using prosthetic device. Since the study involves questionnaire that takes maximum 20-30 minutes and have no likelihood of any harm to the participants, the members of the Ethics committee approved the study to be conducted in the presented form at the meeting held at 09:00 AM on 12th October, 2021 at BHPI (30th 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

CRP-Chapain, Savar, Dhaka-1343, Tel : 7745464-5, 7741404
E-mail : principal-bhpi@crp-bangladesh.org, Web: bhpi.edu.bd, www.crp-bangladesh.org

Institutional Review Board (IRB) Approval

The Chairman
Institutional Review Board (IRB)
Bangladesh Health Professions Institute (BHPI), CRP
Savar, Dhaka-1343. Bangladesh

Subject: Application for review and ethical approval.

Dear sir,

With due respect, I am Amrita Chowdhury, student of final year B.Sc. in Physiotherapy program at Bangladesh Health Professions Institute (BHPI) the academic institute of Centre for the Rehabilitation of the Paralysed (CRP) under the Faculty of Medicine, University of Dhaka. As per the course curriculum, I have to conduct a research project. My title is "**Quality of life of lower limb amputee who are using prosthetic device".** I am doing this under the supervision of Prof. Md. Obaidul Haque, Vice Principal, BHPI.

The purpose of the study is to find out the quality of life of Lower limb amputee who are using prosthetic device. The data will be collected face-to-face interview by using short form 36 questionnaire to explore the quality of life of lower limb amputee people at Prosthetics & Orthotics department, CRP Savar. The interview may take 20 to 30 minutes to fill in the questionnaire and there is no likelihood of any harm to the participants. Data collectors will receive informed consent from all participants and the collected data will be kept confidential.

Therefore, I look forward to having your kind approval for the research project and to start data collection. I can also assure you that I will maintain all the requirements for study.

Sincerely,

Amrita

Amrita Chowdhury
Final Year B.Sc. in Physiotherapy
Session: 2016 – 2017,
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

Thesis presentation date: 12th October 2021

Head of department
B.Sc in Physiotherapy, BHPI
Md. Shofiqul Islam
Associate Professor & Head
Department of Physiotherapy
Bangladesh Health Professions Institute (BHPI)
CRP, Chapain, Savar, Dhaka-1343

Recommendation from the Supervisor

09.02.22

Prof. Md. Obaidul Haque

Vice Principal, BHPI.

Permission letter

Permission Letter

Date: March 20, 2022
To
The Head
Department of Prosthetics and Orthotics
Centre for the Rehabilitation of the Paralysed (CRP)
Chapain, Savar, Dhaka-1343
Through: Head, Department of Physiotherapy, BHPI.
Subject: **Prayer for seeking permission to collect data for conducting research project.**

Respected Sir,

With due respect and humble submission to state that I am Amrita Chowdhury, a student of 4th year B.Sc. in physiotherapy at Bangladesh Health Professions Institute (BHPI). The Ethical committee has approved my research project entitled: **"Quality of life of lower limb amputee who are using prosthetic device"** under the supervision of Prof. Md. Obaidul Haque, Vice Principal, BHPI. I want to collect data for my research project from the Department of Prosthetics and Orthotics at CRP from the month of March to June, 2022. So, I need permission for data collection from the Prosthesis and Orthotics Department of CRP-Savar. I would like to assure that anything of the study will not be harmful for the participants and the department itself.

I, therefore pray and hope that you would be kind enough to grant my application and give me permission for data collection and oblige thereby.

Yours faithfully,

Amrita
Amrita Chowdhury
4th Year B.Sc. in Physiotherapy
Class Roll: 22; Session: 2016-17
Bangladesh Health Professions Institute (BHPI)
(An academic Institution of CRP)
CRP-Chapain, Savar, Dhaka-1343

Forwarded
Shafiq
24.03.2022

Recommended
23.03.2022
Prof. Md. Obaidul Haque
Vice-Principal
BHPI, CRP, Savar, Dhaka

Shafiq
ID: 912
02/04/2022