LEVEL OF DEPRESSION, ANXIETY AND STRESS AMONG THE PERSONS WITH AMPUTEE

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We the undersigned certify that we have carefully read and recommended to the faculty of medicine, university of Dhaka, for the acceptance of this dissertation entitled.

Level of Depression, Anxiety and Stress Among the Persons with Amputee

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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 same any publication, presentation or dissemination of information of the study. I would be bound to take consent from the department of Physiotherapy of Bangladesh Health Professions Institute (BHPI).

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CONTENTS

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Acronym

&	And
AKA	Above Knee Amputation
APA	American Psychological Association
BHPI	Bangladesh Health Professions Institute
BKA	Below Knee Amputation
BMRC	Bangladesh Medical Research Council
CRP	Centre for the Rehabilitation of the Paralysed
CVD	Cardiovascular Disease
DASS-21	Depression, Anxiety and Stress Scale – 21 items
DM	Diabetes Mellitus
IDF	International Diabetes Federation
IRB	Institutional Review Board
LLA	Lower Limb Amputation
P & O	Prosthetics and Orthotics
PTSD	Post-Traumatic Stress Disorder
PVD	Peripheral Vascular Disease
QoL	Quality of Life
ULA	Upper Limb Amputation
WHO	World Health Organization

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Abstract

Purpose: The purpose of the study was to identify the level of depression, anxiety and stress among the persons with amputee. ***Objectives:*** To identify the level of depression, anxiety & stress among the persons with amputee . To explore the Socio-demographic information of the participants. ***Methodology:*** The study was conducted by using cross sectional method. Total 70 samples were selected conveniently for this study from Prosthetics and Orthotics Department, CRP, Savar. All data were collected through face-to face interview and over phone by using a semi-structured research question technique. ***Results:*** Among 70 participants maximum age was 74 years and as follows minimum age was 16 years where mean age calculation was 39.94 ± 13.95 years. Among 70 participants 55.70% had extremely severe depression level, 34.30% had severe depression, 7.10% had moderate severity and 2.90% had mild depression level. 91.40% had extremely severe anxiety level and 8.60% had severe anxiety level. 52.90% had moderate stress level, where it decreases in 21.40% having severe stress level, 15.70% had extremely severe stress level, where mild and moderate respective to 7.10% of total number of the participants. A significant association was observed between age category and depression ($\chi 2$: 28.272, P- value: 0.001) and stress ($\chi 2$: 24.034, P- value: 0.020)**.** ***Conclusion:*** The results of the study suggest that depression, anxiety and stress are commonly experienced after amputation. The amputee group should have access to the amputee care program which will provide psychiatric care alongside rehabilitation.

Key words: Amputation, Depression, Anxiety, Stress

Word count: 9,900

CHAPTER- I INTRODUCTION

1.1 Background

A surgical method by which a part or the whole extremity is being removed is called amputation (Feinglass et al., 2012). Amputation is one of the significant causes of permanent disability. 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 & Sangeeta, 2013).

Amputation could be described as the removal of a body extremity by surgery or trauma. It may be done to treat injury, disease, or infection. It can be easily define as amputation is loss of all or part of a limb or extremity such as an arm, leg, foot, hand, toe, or finger (WebMD, 2017).

Amputation the removal of a body extremity by trauma or surgery is a physical disability that has not received considerable attention in psychosocial research. Trauma is the leading indication for amputation in younger people. Limb loss due to a traumatic injury is sudden and emotionally devastating (Copuroglu et al., 2010).

"Major" limb loss is defined as amputation above the elbow, below the elbow, above the knee, below the knee, or the foot. "Minor" limb loss is defined as amputation of the hand or digits. Lower limb amputations are much more frequent than upper limb and are most commonly the result of disease followed by trauma (Houtum et al ., 2012). The global frequency of amputation is challenging to determine, as rates vary widely both between and within countries (Holman et al., 2012).

A special case is that of congenital amputation, a congenital disorder, where fetal limbs have been cut off by constrictive bands. In some countries, amputation of the hands, feet or other body parts is or was used as a form of punishment for people who committed crimes (Ahmed et al., 2016). The amputation of a limb brings about several changes in the psychological and social functioning of an individual: alterations in self-concept and body image, decreased quality of life and loss of employment status or occupation (Falgares et al., 2019).

Such changes may reduce an individual's ability to maintain emotional well-being and promote maladaptive reactions, leading to psychosocial maladjustment such as anxiety and depression (Kratz et al., 2010).

Depression may be described as feeling sad, blue, unhappy, miserable or down in the dumps, Most of us feel this way at one time or another for short periods, True clinical depression is a mood disorder in which feelings of sadness, loss of interest, decreased energy, disturbed sleep, disturbed appetite, poor concentration, anger, or frustration interfere with everyday life for weeks or longer (Ducharme et al., 2012).

Depression is a mood disorder accompanied by low self-esteem, feeling of inadequacy, lack of self-sufficiency, and unfavorable self-impression.It is a painful experience that depends either on a violent blow or expectation of coming danger from an unknown source (Pashang et al., 2012).

Depression is a kind of mood disorder which may lead the person to attach with feeling of loneliness, sadness and anger in his daily life activities. It is getting common nowadays. And the people are suffering from this disorder in different ways. By having this kind of disorder may interfere in your daily activities, loosing time with result of lack production. Sometime it will take the people to relationship breakups and suffers from chronic diseases conditions like asthma, cancer, arthritis, cardiovascular disease and diabetes. Depression is very serious disease and it will go worse if we don't get a proper treatment for this. And those who are suffering from this kind of disease will get positive response after getting proper treatment for depression disorder from any health care center (Prefit and Szentagotai, 2018).

Depression is related to the disorder of mood that attack the feeling of person which cause loss of interest and sadness. We can use other term for this as clinical depression or depressive disorder, it shows that how you face the problem and deal with that to think, feel and response to the physical and emotional situations. Maybe you feel problems in your daily work related activities, and different kind of thoughts comes in your mind that no need to live. There are the symptoms of depression mentioning as following; Always feeling tearfulness, hopelessness and sadness, Feeling irritable on small issues, Loosing of interest in daily activities like sports and job, Sleep disorders like insomnia, Loosing of energy and feeling tiredness, Shortness of breath, anxiety, moving around, bad thinking and speaking, Self-harassment, guilt

and blaming himself for past failures, Fear of making decisions, losing of concentration and not proper thinking, Death thoughts, other bad thoughts like suicide attempts, Changes in personality and memory weakness, Pain and aches, Nausea, insomnia, appetite problem, loss of interest in personal relationship and fatigue, Loneliness, scaring to join the community people and programs. (Hasin et al., 2018).

Anxiety is a disease of mental health category which is lead to the disorders like; fear, worry, nervousness and apprehension. These disorder shows how a person face with behave and emotion and also severeness of anxiety shows it will affect the person seriously day to day life. The peoples who are suffering from severe kind of anxiety not only harmful but life threatening for their survival. Sign and symptoms of anxiety will sit with a person like alarm and effect bad actions on the human body. These alarms have been noticeable in human body like sweating, tachycardia and increase sensitivity (Felman, 2018). Anxiety is not a single symptomatic disorder, it occurs with a group of symptoms to the people. Sometime a person may suffer from anxiety attack which become without warning, while sometime they become panicky at noisy and party places. Some people were struggling with fear an accidents of driving, or obtrusive thoughts. Some people may live with chronic state of worrying about anything, tension and everything (Hasin et al., 2018).

The American psychological association (APA) disorders shows the anxiety is an emotion which is categorized by worried thoughts, feeling of tension and also increasing of blood pressure in physical changes. Anxiety is related with broad kind of disorders which is include with anxiousness, fear, nervous feelings and worrying. When you are in danger or feeling tension by fear of something which is hurting you then you will understand the effect of normal and regular anxiety. In case of regular anxiety in human minds there has been a condition or danger sign of alarm bells is ringing when a person feels fear and nervousness, start sweeting and increasing of heart beats (Hasin et al., 2018).

Stress is characterized as a set of requirements of quantitative or qualitative character that the person is not able to respond to positively, a stressful situation is characterized as a condition in which the intensity level of the stressful situation is higher than the person's ability to cope with the situation. Post-Traumatic Stress Disorder has been identified as one of the most commonly occurring mental illnesses

in combatants. PTSD symptoms of increased arousal, intrusion, avoidance and dissociation may improve within months in the majority of people, maladaptive coping responses in some may lead to long term mental health consequences such as alcohol and drug abuse, aggressive behavior, deliberate self-harm and even suicide (Abeyasinghe et al., 2012).

1.2 Rationale

The survivors suffer a lot after any devastation especially they suffer with post-traumatic stress related disorder. Traumatic limb amputation leads to higher levels of anxiety, depression and emotional stress in the individual. Adaptation to this event encounters a large number of physical changes such as impairments in physical functioning, prosthesis use, pain, changes in employment status or occupation and alterations in body image. In this study the investigator is interested to find out the level of the depression, anxiety, stress of persons with amputee. The result could be ensured us about psychological level of amputee person. However, Investigator feels that there have still limitations. Investigator is interested to find out survivors day to day lives, wellbeing after any injuries and psychological trauma which bring amputation to them. In this case, usually the survivors remain in a state of depression, anxiety and stress because most of them cannot go back to their job and also get affected by other influences like- jobless, family burden. However, it should be on focused that the survivors did not get support during this crisis period what they really deserve. The persons with limb prosthesis are still having mild to severe difficulty leading everyday life, therefore it is essential to investigate their psychological state. It could be making aware for further any hazardous incident and predicting impact. It could help to take precautionary management for the amputee persons. Still now there is no statistics about their psychological state. For this reason, the investigator is interested to know about their psychological state separately to find out the status of their life after this terrible incident.

1.3 Research question

What is the level of depression, anxiety and stress among amputee persons?

1.4 Objectives

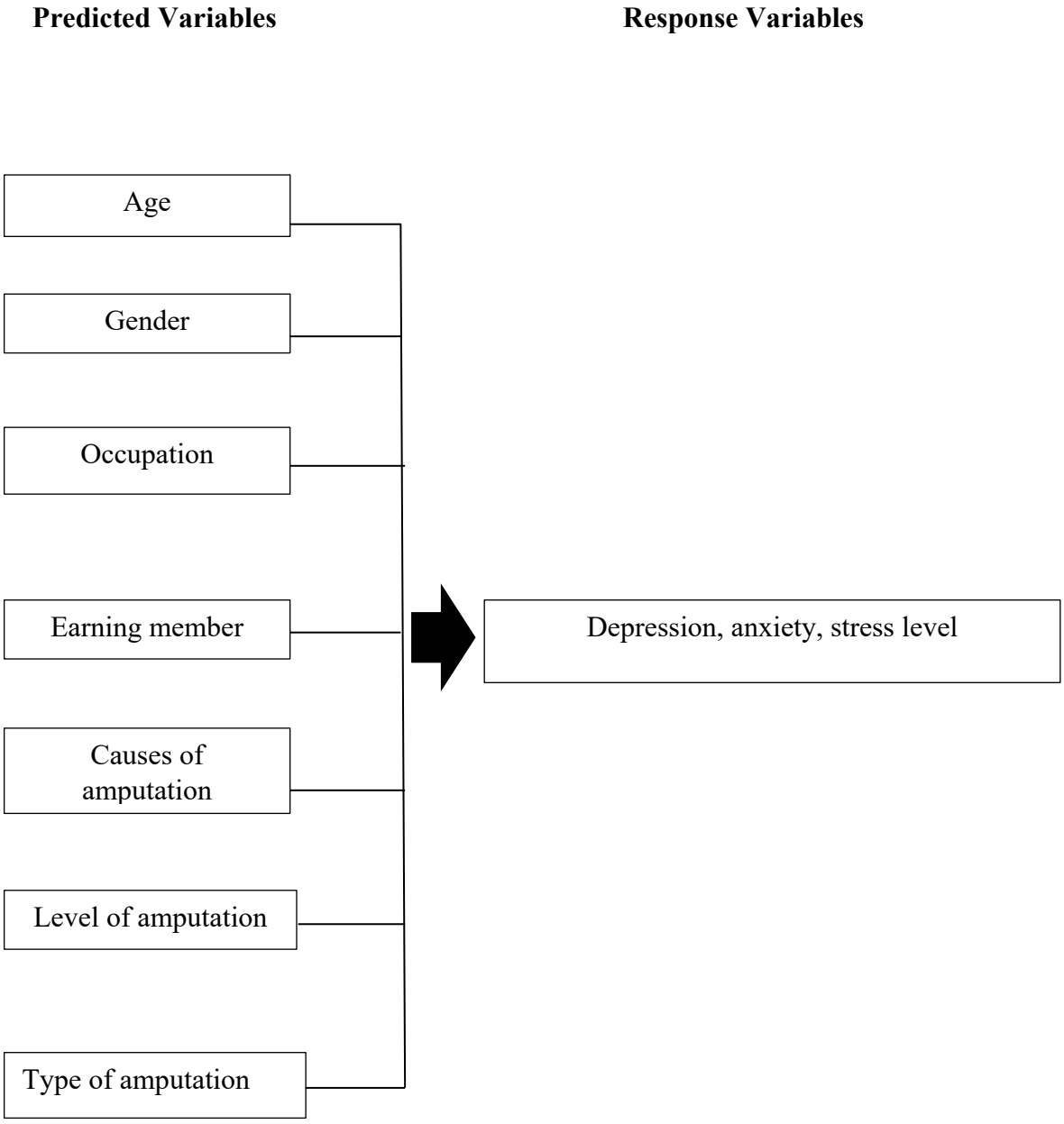
1.4.1 General objective

To identify the level of depression, anxiety and stress among amputee persons.

1.4.2 Specific objectives

1) To identify the socio-demographic information of the participants.
2) To identify the level of depression.
3) To identify the level of anxiety.
4) To identify the level of stress.
5) To identify the association between predicted variables & response variables.

1.5 Conceptual framework:



CHAPTER-II LITERATURE REVIEW

Amputation is the removal of a limb by trauma, medical illness, or surgery. As a surgical measure, it is used to control pain or a disease process in the affected limb, such as malignancy or gangrene. In some cases, it is carried out on individuals as a preventative surgery for such problems (Connel et al., 2016). Amputation leads a person to a permanent disability. It brings a dramatically change in the life, function and movement of the victims. These changed situations are experienced more by lower limb amputees than by upper limb amputees. The incidence of lower limb amputation is also higher than that of the upper limb (Calle Passcul et al., 2011). Limbs are very vital part of human body. But unfortunately because of illness or trauma loss of this limb or partial limb is called Amputation. Amputation leads to a permanent disability and brings many difficulties and limitation people's everyday life. It hampers persons Quality of Life (QoL) (Sinha et al., 2011).

Bangladesh is a low-and-middle-income-country with a population of 160 million. Incidence rate of lower limb amputation in Bangladesh is largely unknown except a study published in 1997 that reviewed 6 years-worth of data from one district and estimated incidence rate to be 75 per 100,000 populations (Aftabuddin et al., 1997). The incidence of lower limb amputation varies significantly across the globe, ranging from 5.8 to 31 per 100,000 (Hisam et al., 2016).

The Amputee Coalition of America estimates that there are 185,000 new lower extremity amputations occurs each year just within the United States and also reported that there are nearly 2 million people living with limb loss in the United States (LLA, 2012). The ratio of upper limb to lower limb amputation is 1:4. Around 30% of USA amputee patient have lower limb loss and 10% upper limb loss patient (Cooper, 2014).

Special case is that of congenital amputation, a congenital disorder, where fetal limbs have been cut off by constrictive bands. In some countries, amputation of the hands, feet or other body parts is or was used as a form of punishment for people who committed crimes (Ahmed et al., 2016). Amputation may include solitary limbs (one-sided), both the upper or lower limbs (two-sided), or a blend of upper and lower limbs

amputation (numerous removals), amputation might be performed at different anatomical levels (De Laat et al., 2011).

"Major" limb loss is defined as amputation above the elbow, below the elbow, above the knee, below the knee, or the foot. "Minor" limb loss is defined as amputation of the hand or digits. Lower limb amputations are much more frequent than upper limb and are most commonly the result of disease followed by trauma (Van Houtum et al ., 2012). Trans tibial amputation is the most common type of major amputation seen in war and peace. Wartime amputations in battle usually occur as the result of trauma in young, healthy individuals and thus differ from those seen in civilian life. Since World War II, explosive munitions such as land mines, artillery, mortars, grenades, and bombs have been the most common cause of transtibial amputations (Van Hountum et al., 2012). Lower limb amputations were much more common than upper limb amputations, the former accounting for 94.8% of all amputations, and the latter for only 5.2%. Among all lower limb amputation cases, below-knee amputations were the most common, followed by above-knee amputations (Razak et al., 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. 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, 2013).

Most upper limb amputations (ULA) are caused by trauma at work in the form of occupational accidents. As a result, it is important to pay attention to the work and gender of patients (Brown et al., 2016). Sometimes it is not possible for patients to return to their previous job and there is a need for them to change their role or job (Jang et al., 2011).

LLA in both developed and developing has been found to change in their quality of life after amputation (Perkins et al., 2012), foot ulcers due to diabetics (37.6%), peripheral vascular diseases (31.7%), trauma, acute limb ischemia, infection, chronic osteomyelitis, elephantiasis, pressure sore and chronic wound are the indications for lower limb amputation in Sri Lanka (Ubayawansa, 2016). Lower limb amputation is a lasting surgery that has significant practical and sequelae that can impact the daily living activities of the person with amputation (Van Twillert et al., 2014).

Lower limb amputation is a permanent surgical procedure that has important functional and squeal that can influence the daily activity of the person with amputation (Van Twillert et al., 2014). Peripheral vascular diseases, trauma, diabetes, congenital anomalies, sensory problems and loss of functions are the common incidences for amputation around the world (Porter, 2003). In the cases of Osteosarcoma and Ewing sarcoma, being the most common bone cancers in the lower extremity, amputation is the best solution to avoid further spreading of disease. It will save the life of patients (Passguina, et. al., 2014).

Below knee amputations are the most common amputations those are representing 81% of trauma related amputations, there 47% expected increases in below knee amputation from 1995 to 2004 (Van Hountam et al., 2012). There are more than 1 million annual limb amputations globally, one every 30 seconds is even more troubling , particularly since the International Diabetes Federation (IDF) predicts that current global prevalence of diabetes will burgeon from 285 million to reach 435 million by 2030 (Advanced Amputee Solutions, 2016). The world-wide prevalence has been estimated that at 3–10% increasing to 15–20% among developed countries . Age is an important factors related with amputations, such as aged over 70 years can be risk factor for amputation with diabetics neuropathy. It classically presents as intermittent claudication and can lead to ulcers, gangrene and amputation (Patel et al., 2015).

The ratio of symptomatic to asymptomatic disease is up to one in three with as many as 50% never consulting a doctor. Over 90% of the annual 5000 major leg amputations undertaken in England can be attributed to arterial disease (Neher et al., 2016). While diabetes is a major cause of all amputations (major and minor) in England, the vast majority (over 90%) of the 5000 major amputations undertaken in England every year, in people over 50 years are related to Peripheral arterial disease (Thomas et al, 2016). Among males the percentage of major amputation associated with peripheral vascular disease (PVD) ranged from 51% in one study site to 93% in another. This percentage was similar in females with the exception of 30% associated with PVD at a single study site (Hoffsated et al., 2015). The proportion of lower limb amputations as a result of PVD was found to be lower in minor amputations and the proportion of LLAs as a result of trauma was high in minor amputations (Thomas et al., 2016).

Diabetes is one of the leading causes of severe morbidity and mortality. The number of people with diabetes in the world is expected to double between 2000 and 2030. The greatest absolute increases in the number of people with diabetes will be in the world (Worber et al., 2011). In the US, the majority of new amputations occur due to complications of the vascular system (the blood vessels), especially from diabetes. Between 2006 and 2008, there were an average of 133,735 hospital discharges for amputation per year in the US (Kneedy et al., 2014).

Limb deficiency occurs in association with other major congenital anomalies in 12% to 33% (Malaham et al., 2014). Amputation due to injury is relatively rare and is the cause of only 10–20% of lower-limb loss in the developed world (Kahle et al., 2016). Approximately 55% of civilian LLA for trauma are BKA, 40% AKA and 1% bilateral amputations. Because of the low incidence of bilateral amputation, most studies recruit low numbers of these amputees (Amaefula et al., 2015).

The most common causes of amputation are vascular diseases, trauma, malignancy, and congenital deficiency. Amputation rates have increased among cardiovascular patients, declined in individuals with trauma, and remained unchanged in patients with cancer and congenital amputations (Varma et al., 2014). Five-year review of lower limb amputation prevalence rates in England found that 39% of patients who underwent major amputations during this period had a primary diagnosis of diabetes. Moreover 43% had a diagnosis of CVD, with just 13.9% of measures being secondary to injury or trauma (Moxey et al., 2010).

Major limb amputation influences multiple aspects of an individual's life: his body image, mobility, self-care activities, psychosocial health, vocational and avocational opportunities (Ikram et al., 2014). Limb loss due to a traumatic injury is sudden and emotionally devastating (Copuroglu et al., 2010). The costs of limb amputation can be excessive in terms of initial hospital care, rehabilitation and ongoing community support, and this is especially so when patients can no longer cope independently in the community and may require long-term institutional care (Peach et al., 2012). In India, 70% of the amputees were victims of trauma and among the traumatic cases majority suffered a road traffic accident (Pooja & Sangeeta, 2013).

80% of these cases were consequences of limb ischemia. A high pace of urbanisation, developed modes of motorized transportation, and poor road conditions were identified as some factors leading to higher number of road accidents resulting in

amputation (Chalya et al., 2012). Research has shown that the incidence of LLA is up to 8-15 times higher in diabetic patients compared to non-diabetic patients and that up to 70% of people die within 5 years of having an amputation as a result of diabetes. Further, the number of people with diabetes in the United Kingdom has increased from 1.4 million to 2.9 million since 1996 and is likely to reach 5 million by 2025. It is also estimated that there are over three-quarters of a million people in the UK with undiagnosed diabetes and this may not become apparent until their first admission with non-salvageable lower limb sepsis (Mills et al., 2014).

The prevalence of lower extremity vasculopathy is varied based on the method used to detect the vasculopathy. In this regard, the prevalence of peripheral vascular disease in the Arab population ranges between 50 – 78.7 %.(Almoutaz et al., 2011) Some 82.9% of those with lower-limb amputation in Scotland have lost a limb due to peripheral vascular disease, with 38.6% of this group having undergone amputation due to diabetes (Callaghan et al., 2011).

Gaza Palestinians who had sustained war-related traumatic extremity amputations and were currently attending physical rehabilitation, nine out of ten had major amputations (85%) with unilateral lower extremity amputations as the most common type (64·5%). Nearly one in five amputees was a child. The majority of the amputees were young men, mostly family breadwinners (Heszlein et al., 2018). Amputation is a distressing experience that is likely to pose considerable challenges in terms of psychological and social adjustment (Geertzen et al., 2015).
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). 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 experience of depression in limb absence has also been found to be linked with other negative psychosocial outcomes that include elevated general anxiety (Atherton & Robertson, 2006), body image anxiety, feelings of vulnerability diminished self-esteem, phantom limb pain and neuroticism (Badura-Brzoza et al., 2006), general pain, lower levels of

perceived health and social support (Ikram et al., 2014), greater self-awareness of impairment, lower identification with the impairment (Senra, 2013), and lower perceived quality of life (Asano et al., 2008).

Individuals with acquired limb absence are also often reported to express dissatisfaction with their body image (Holzer et al., 2014). In addition to being linked with depression and general anxiety, dissatisfaction with one's body image after the loss of a lower limb has been associated with lower levels of self-esteem, lower levels of life satisfaction as well as reduced levels of physical activity (Tatar, 2010).

Studies suggested that depression is the part of life of old age disable people and declare that disability is the most risk factors for the people having depression disorder. Anxiety is also found as a risk factor for the old age people but not more dangerous like depression disease. How disability increasing due to depression, showed or explain the differences by medical condition, cognition and socioeconomic measures. For the anxiety they don't have any therapy to show here but the research showed that depression will decrease by having the proper treatment (Lenze et al., 2001). Anxiety and depression was the big part of level of impaired life quality, conditions of physical disability, noncompliance of medical treatment, increasing the usage of health care services and increasing rate of deaths (Yohannes, 2018).

A study is about the ex-military personals with physical disabilities like hearing, visual and physical impairments with mental health disorders. It is relay necessary to help and cure the personal of ex-military forces from the disability and psychological problems which they are facing. The further researches will help us to find the way to help them and find the solution for their well-being of ex-military personal with the disability they have, should find the types and act to treat them to overcome from the disease which they are suffering from (Stevelink et al., 2015). Major lower extremity amputation is a common procedure that results in a profound change in a patient's life (Chalya et al., 2012). Symptoms of depression were found in 67.7% of respondents, symptoms of anxiety in 72.2%, and post-traumatic stress disorder (PTSD) in 42%. The disabled and women had a poorer mental health status, and there was a significant relationship between the mental health status and traumatic events. Coping strategies included religious and spiritual practices (Hasin et al., 2018).

38.0% of participant with low physical disability have anxiety 66.7% of participant with high degree of physical disability have anxiety. 17.1% of participant with low physical disability have depression and 71.7% of participant with high degree of physical activity have depression. The study conclude that physical disability have positive relationship with anxiety and depression. The impact of physical disability on mental health varies with sex, age, duration of disease and extend of physical disability. The mental health of people with disability due must be attended in order to meet the health need of them (Jones et al., 2014). Major factors affects the Quality of life after amputation, Quality of life and people reintegration in the community depends upon coordination of services from immediate life saving measure to long term rehabilitation focus to minimize the factors related to poor physical, social, psychological function and Quality of life (Chu K et al., 2011)

Person with amputation are rarely tended to by their genuine names and rather they are called by their disability in its rudest and cruelest interpretation. They are additionally barred from social projects, local area exercises, diversion, games, aggregate occasions and so on. They have been either won't or debilitate in accessing any sporting occasions like films, theaters, parks and so on These individuals have indeed been avoided with regards to the cycle of social association and standard turn of events (Maqsood et al., 2015). People with lower limb amputation experience anxiety and depression following amputation of the lower extremity. These psychological reactions correlate significantly with age and marital status, and there is no correlation with level of amputation, mode of ambulation and indication for amputation (Moss et al., 2009). Another significant aspect of amputee health is that of psychological well-being (Ficke et al., 2012).

Amputation is also associated with morbidity and mortality.The survival rate varies across countries but mortality rate is generally high (Patel et al., 2015). Old age and higher anatomical level of amputation are associated with poor survival and the mortality rate is higher in both people with diabetes and people who do not have diabetes (Neher et al., 2016). Amputation level also has a significant effect on the psychological acceptance of the surgery by the amputee. The lower the amputation level, the less detrimental the psychological effect. It can be seen that the lower the level of amputation, the better the overall wellbeing of the subject (Patel et al., 2015).

Amputation is a distressing experience that is likely to pose considerable challenges in terms of psychological and social adjustment (Geertzen et al., 2015). Not only does this procedure incur permanent physical loss, it may also lead to restrictions in many other important life domains (Highsmith et al., 2016). The amputee most often oppress 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).

After discharge from rehabilitation, a long term acclimatization phase begins, during which the harsh realities of the disability are felt by the amputee patient in their own living environment without the direct support of the multidisciplinary rehabilitation team (Maqsood et al., 2015). Caregiving can influence several aspects of caregivers lives at physical, psychological, family, and social levels and may include deterioration of physical health and increased stress, anxiety, and depression (Ong et al., 2018). Limb amputation can lead to significant psychological and social dysfunction among some individuals, while many others adjust and function well (Desmond & MacLachlan, 2010). Depressive symptomatology is the most commonly documented mood disturbance following amputation, estimates suggest that between 13% and 32% of individuals with limb amputations might experience significant depressive symptoms at any one time (Wegener et al., 2009). Interposition in the amputee's distress addresses the psychological side of injury and healing which is foremost to physical rehabilitation. Investigators have noted high prevalence of depressive and anxiety symptoms in amputees (Czerniecki et al., 2012).

People with depression are often stigmatized by society and only a few receive proper treatment, the way symptoms of depression are identified in patients and theories related to etiology can influence their willingness to seek help and agree to treatment as well as influence the attitude and behavior of the community towards them (De Almeida et al., 2013).

Depression can make pain worse, make sleep difficult, sap the energy, take away the enjoyment and make it difficult to take good care of health (Arango-Lasprilla et al., 2011). A literature shows that the association between poor physical health and

psychological illnesses is seminary. Sometime the association of physical health with anxiety and depression is extremely less understandable, as depression is the most famous cause of disability in the globe so the rate of suicide attempts is considerably found high in many countries in the world. A survey which is based on population of national cross sectional of Australia, conducted that anxiety and depression shows the severe health problems which is impacting on the major part of the population over the world (Stanton et al., 2019). Furthermore, perception of social support has been shown to be related to general adjustment and lower levels of depression (Senra et al., 2011).

A study conducted in Taiwan to assess the incidence, risk and associated risk factors of depression in adult with physical and sensory disabilities. 749,491 people with physical or sensory disabilities 20 years and above were included in the study. The prevalence of depression was 6.29 per 1000 person per years. Among them 1.83 per 1000 person have major depression symptoms. The study found that type and severity of depression, gender, age, education socio-economic status, and marital status are associated with depression. The incidence of depression was higher in severe form of disability than in people with mild disability. The depression was higher in women with disabilities (2.24 per 1000) than in men with disabilities (1.55 per 1000). The incidence of depression was high among the people with disabilities with low income (6.10-7.50 per 1000) than in high income (4.91 per 1000). The incidence of depression was seen more in people with disability from rural (6.79 per 1000) area than in people with disabilities from urban area (5.51-6.10 per 1000). The study also reveals that depression among physical and or sensory disabilities was 3.7 folds higher than general population. The incidence of depression was higher in single people with depression (1.72 per 1000) than in married or divorce people with disabilities (1.85-2.67 per 1000). The study also reveals that the risk for depression increases along with severity of disability. The study also suggests government and family member of people with disabilities to give more attention on detecting and treating depression in the individual. The extra measures should be taken to prevent and treat depression among the people with disabilities (Shen et al., 2017).

A study conducted in America for assessing the depressive symptoms and utilization of health service among persons with limb loss (physical disabilities) shows prevalence of 28.7% among them. The depression symptoms was used for study. The study found factors like divorced or separates, low economic level, extreme back pain or phantom limb pain as the risk factors for depression among them. The study also revels higher education as protection against depression in people who lose their limbs. 22% of participant and 44.6% of participant with depression were using mental health service. Among the participant with depression 32.9% need mental health service but they were not receiving it and 67.1% does not need mental health service. The study conclude that management of pain and medical condition can decrease depressive symptoms. The awareness about depression and its treatment may increase the utilization of mental health service among the people who have loss limb (physical disability) (Darnall et al., 2005).

Furthermore, perception of social support has been shown to be related to general adjustment and lower levels of depression (Senra et al., 2011). A study using secondary data analysis provided preliminary knowledge of the environmental barriers, activity limitations and participation restrictions experienced by patients with a major limb amputation (Kahle 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 post-traumatic stress disorder (PTSD) following limb amputation is widely recognized yet poorly researched, even amongst those with traumatic limb loss (Wegener et al., 2011). PTSD is classified as an anxiety disorder within the International Classification of Diseases More than 85% of PTSD cases present initially as an Acute Anxiety Disorder immediately after the event but diagnostic criteria for PTSD must be met within six months of the stressful event or of the end of the period of stress. One of these categories includes persistent remembering or reliving of the stressor in intrusive flashbacks, vivid memories or recurring dreams or in experiencing distress when exposed to circumstances resembling or associated with the stressor (Hutton et al., 2009). Most presentations occurred in the first six months (60% for anxiety and 35% for depression). 83% of their patients attended a

psychiatric clinic at one point after their surgery but this had reduced to 10% after two years. They also found that mental health problems were significantly higher in their amputee group compared to non-amputees with severe extremity trauma which correlates with the theory that a sense of loss and grief about the limb involved is a significant contributing factor (Melcer et al., 2010).

Levels of anxiety and depression in traumatic amputees in the two conflicts of Vietnam and Iraq or Afghanistan may also be affected by changes in management and services for these conditions over time (Reiber et al., 2010). A significant increase in anxiety and depression compared to the population average with femoral amputation but not with tibial amputation, This suggests that the higher the severity of the injury, the more likely the patient will be to suffer from a mental illness (Perkins et al., 2012). An intriguing inverse relationship in that multiple amputees had lower levels of anxiety and depression, They attributed this to the possibility that those who had suffered an extreme level of injury were able to put their circumstances into perspective in that they were, quite simply, glad to still be alive and not focusing on their disability (Reiber et al., 2010).

Patients who were divorced or separated were twice as likely to suffer from depressive symptoms as those in a relationship. Another difficulty in analysing these differences between studies is the change in marriage habits in different populations over time. In the UK, 22% of marriages in 1970 had ended in divorce at 15 years compared to 33% in 1995 (Darnall et al., 2005).Traumatic limb amputation leads to higher levels of anxiety, depression and emotional stress in the individual (Vranceanu et al., 2014). Depression, anxiety and post-traumatic stress are among the predictors of poor long-term Quality of Life (QOL) and reliance on pain medication (Helmerhorst et al., 2014). The patients need to be treated using a multidisciplinary approach with the intervention of different members of the care team. This team consists of the physician, nurse, physiotherapist, occupational therapist, psychologist and, in the case of the presence of a disorder such as PTSD, a psychiatrist or psychologist (Kearns et al., 2018).

Greater active problem solving was negatively associated with depression and internalised anger, and positively associated with positive adjustment and acceptance of disability. Conversely, emotion-oriented coping and cognitive disengagement were

positively associated with depression, externalized hostility and lack of acceptance of disability, perception of social support has been shown to be related to general adjustment and lower levels of depression (Senra et al., 2011).

Anxiety and avoidance are associated with emotion-oriented coping, which in turn is associated with depression (Giorgio et al., 2019).

Depression symptoms did not play a significant role in the change of traumatic stress symptoms, which was not expected. However, this sample presented a lower prevalence of depression symptoms (Pedras et al., 2017). Traumatic stress symptoms are associated with mental and physical health deterioration and with a poor psychological functioning, no sociodemographic and clinical variables were associated with traumatic stress symptoms (Mills et al., 2006).

The intensity of the stressful situation itself can affect the abilities of people more than their age or gender, if the person uses some coping strategies in coping with everyday stressors, there is a high probability of effective coping with the load of the higher intensity, even amputations (Greenglass et al., 2006). Amputation of the limb represents a major event in a person's life with consequences that have not been fully studied. Physical consequences are mainly related to the inability to perform different life tasks, which were part of the person's life before. This creates a tremendous stress (Bhuvaneswar et al., 2007).

CHAPTER – III METHODOLOGY

3.1 Study design

The study was cross - sectional Study. This was a non-experimental study design. The studies were carried out at one time point or over a short period. A cross-sectional study design is used when the purpose of the study is descriptive, often in the form of a survey. Usually there was no hypothesis as such, but the aim is to describe a population or a subgroup within the population with respect to an outcome and a set of risk factors". Cross-sectional methods are studies aimed at determining the frequency of a particular attribute, such as a specific exposure, disease or any other health-related event, in a defined population at a particular point in time. Data can also be collected on individual characteristics, alongside information about outcome. In this way cross-sectional studies provided a "snapshot" of the outcome and the characteristics associated with it, at a specific point in time.

3.2 Study population

A population refers to the entire group of people or items that meet the criteria set by the investigator. Amputee patient is the study population from CRP.

3.3 Sampling

After taking permission from the ethical body of BHPI, the investigator had to find out the people following limb amputation. Those participants had fulfilled inclusion criteria as they are the participants of the study. The investigator had chosen CRP (Prosthetics & Orthotics department) as a study area for collecting data. Researcher has called the participants by mobile phoning and meet with them inside CRP. All the people with following limb amputation were selected for this study and that fulfilled the inclusion criteria. The investigator explained every participant about the research aim and objectives. The investigator had taken sampling from those who willingly participated in this research. The investigator had selected them through convenience sampling that are available in between the days of data collection.

3.4 Sample size

The equation of sample size calculation is given below-

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

$$= \left\{\left(\frac{1.96}{0.05}\right)\right\}^2 \times 0.5 \times 0.5$$

$$= 384$$

Here,

$Z\left(1-\frac{\alpha}{2}\right)$= 1.96

P (prevalence) =50%

And, q= (1-p)

= (1-0.5)

=0.5

d=0.05

Where,

n = Sample size

$Z\left(1-\frac{\alpha}{2}\right)$= linked to 95% confidence interval (use 1.96)

p = expected prevalence (as fraction of 1)

q = 1- p (expected non-prevalence)

d = margin of error at 5% (standard value of 0.05)

According to this equation the sample should be more than 384 people but due to lack of opportunity the study is conducted with 70 participants attending at prosthetics and orthotics department, CRP selected according to inclusion and exclusion criteria.

3.5 Inclusion Criteria

a. People with limb amputation.

b. Both male female were selected.

c. People who were willing to participate in the study.

3.6 Exclusion Criteria

a. Those who are not interested to attend the program at the time of data collection

b. People who have mental illness.

3.7 Data collection tools

Demographic information of the respondents was collected by using questionnaires. Demographic information included age, gender, educational level, marital status, occupation. Therefore, researcher added some points in demographic questionnaire like-causes of amputation, level of amputation, area of amputation. Moreover pen, papers, consent form were also included in the list of data collection tools.

3.7 Data collection

Data collection method was questionnaire and before collecting data, the study aims, objectives and study procedures were explained to participants. They were given the opportunity to ask questions and once they were satisfied they were asked to sign the written consent form. Once they signed the consent form, the researcher completed the DASS-21 along with the demographic data. Researcher collected data from 16-06-2021 to 15-10-2021. Researcher took help from in-charge of institute and persons who were participants in this research. In certain instances, the individual being assessed may not be able to complete the questionnaire (e, g, due to expressive or receptive language deficits, memory impairment, post traumatic distress etc.). In these instances, a person who was familiar with the individual being assessed could complete the form, provided that the individual being assessed was present when the form was completed.

3.9 Data Analysis:

Data were analyzed by using Statistical Package for the Social Science (SPSS) version 22 software. The variables were labeled in a list and the researcher created a computer-based data definition record file that contained a list of variables in order. The researcher inputted the name of the variables and defined the types, values, decimal, label alignment and data measurement level in the variable view of SPSS. The next task was to check the inputted data set to confirm that all data had been correctly copied from the questionnaire paper to the SPSS data view. The raw data is then ready to be analyzed in SPSS. Data were analyzed by descriptive statistics and calculated as percentages and presented by using tables, bar charts, pie charts etc. Microsoft office Excel 2010 was used to decorating the, bar charts and pie charts. By this study a lot of information were collected. All results gave idea about level of depression, anxiety and stress among the persons with amputee.

3.10 Ethical consideration

The proposal was submitted and prepared to the Institutional Review Board (IRB) and Bangladesh Health Profession Institute (BHPI) and approval was obtained from the board. The World Health Organization (WHO) and Bangladesh Medical Research Council (BMRC) guideline was al followed to conduct the study. A written/verbal consent was taken from participate before collecting of data. During the course of the study, the samples who were interested in the study had given consent forms and the purpose of the research and the consent form were explained to them verbally. The study did not interfere with their jobs. They were informed that their participation was fully voluntary and they had the right to withdraw or discontinue from the research at any time. They were also informed that confidentiality was maintained regarding their information. It should be assured the participant that his or her name or address would not be used. The participants were also informed that the research result would not be harmful for them.

CHAPTER-IV RESULTS

The study was conducted with 70 persons with amputation as participants in CRP (Prosthetic and orthotics department), the data provide the statistics of the participants.

4.1 Socio-demographic information

4.1.1 Age of the participants

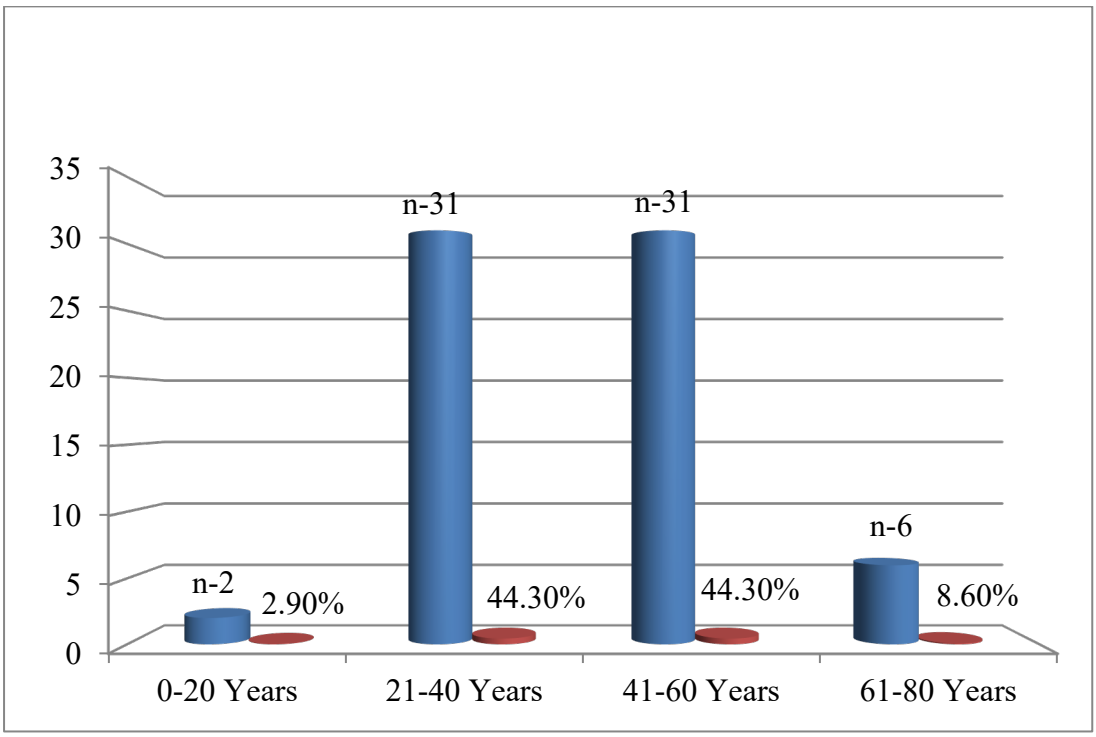


Figure-1: Age of the participants

In demograpic data shows that, In between 70 participants maximum age was 74 years and as follws minimum age was 16 years where mean age calculation was 39.9429±13.95 years. Here in between 0-20 years of age limit about 2.90% or 2 participants participated in this study. 44.30% or 31 participants were between 21-40 years of age. Also 31 participants or 44.30% of total participants were between 41-60 years of age. Only 6 participants or 8.60% of total participants were in between 61-80 years of age.

4.1.2 Gender of the participants

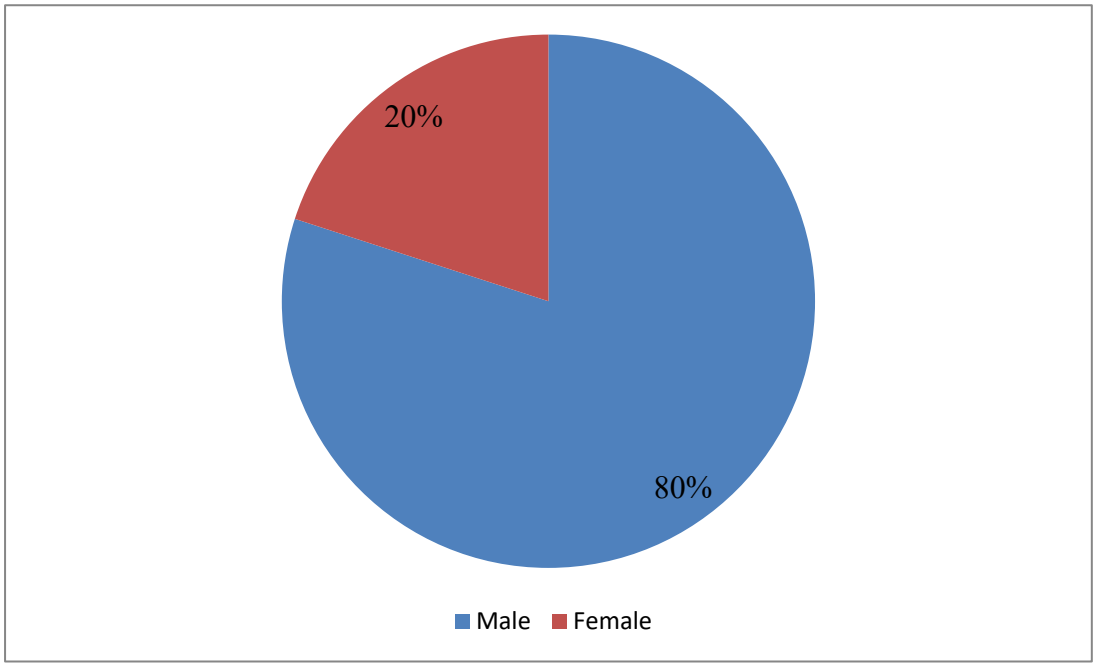


Figure-2: Gender of the participants

Demographic data shows that, among 70 participants most of the participants were male, in number it was 56 and female were 14. In which male 80% rather than female 20%.

4.1.3 Living area of the participants

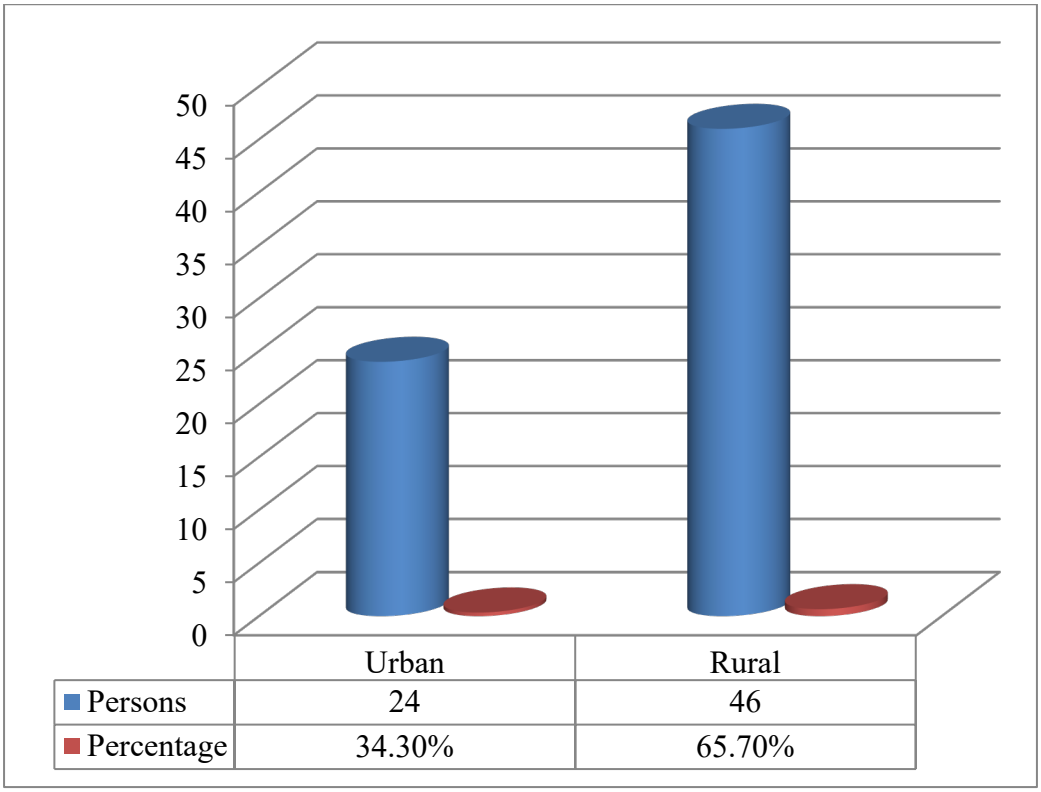


Figure-3: Living area of the participants

Most of the participants live in rural area about 65.70% or 46 persons where 34.30% or 24 person live in urban area.

4.1.4 Education of the participants

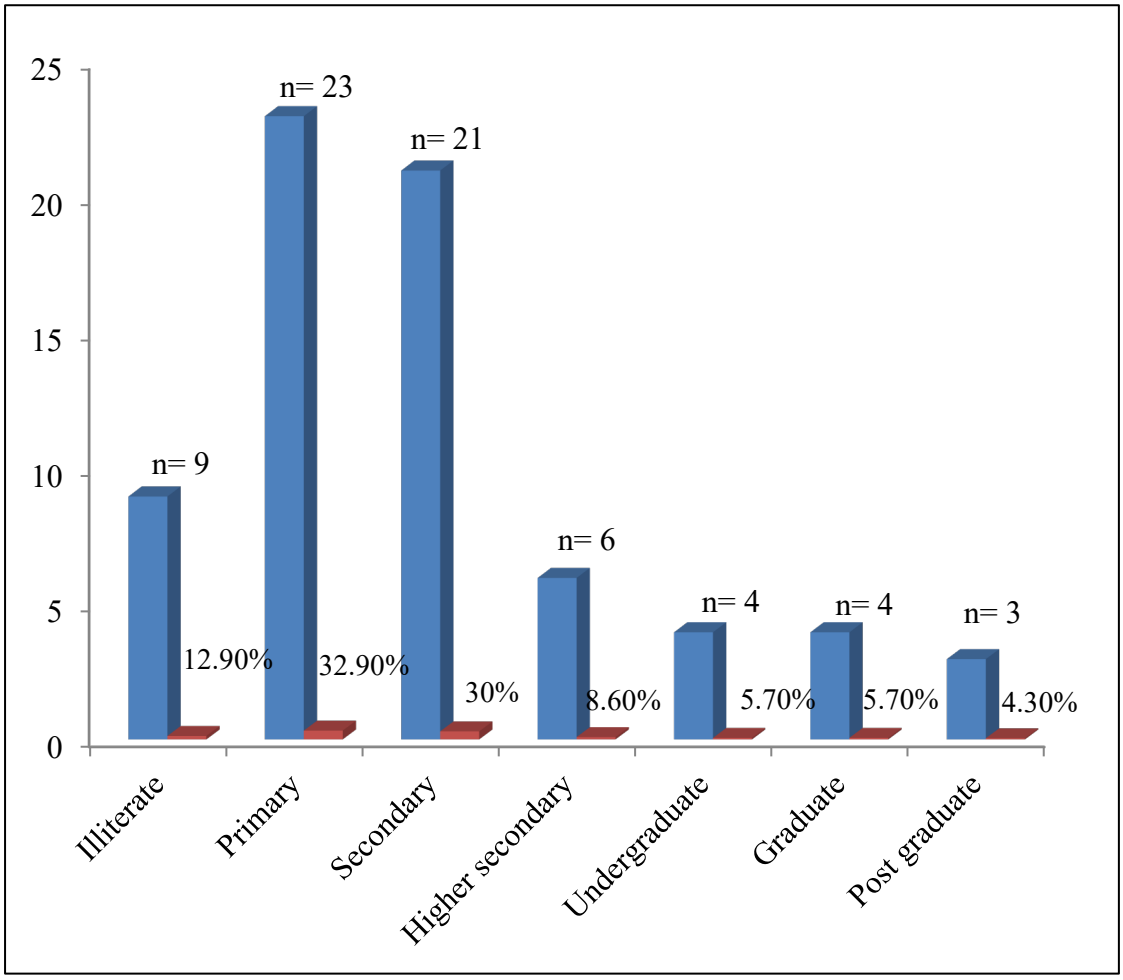


Figure-4: Education of the participants

In case of education maximum participants received or completed their primary education 32.90% or 23 participants, 30.00% or 21 participants completed or received their secondary education, 6 participants or 8.60% went for higher secondary, 5.70% or 4 participants went for undergraduate and also the same number and percentage follows for graduate level. Only 3 participants or 4.30% went for post graduate degree and in between 70 participants 9 participants or 12.90% were illiterate.

4.1.5 Marital status of the participants

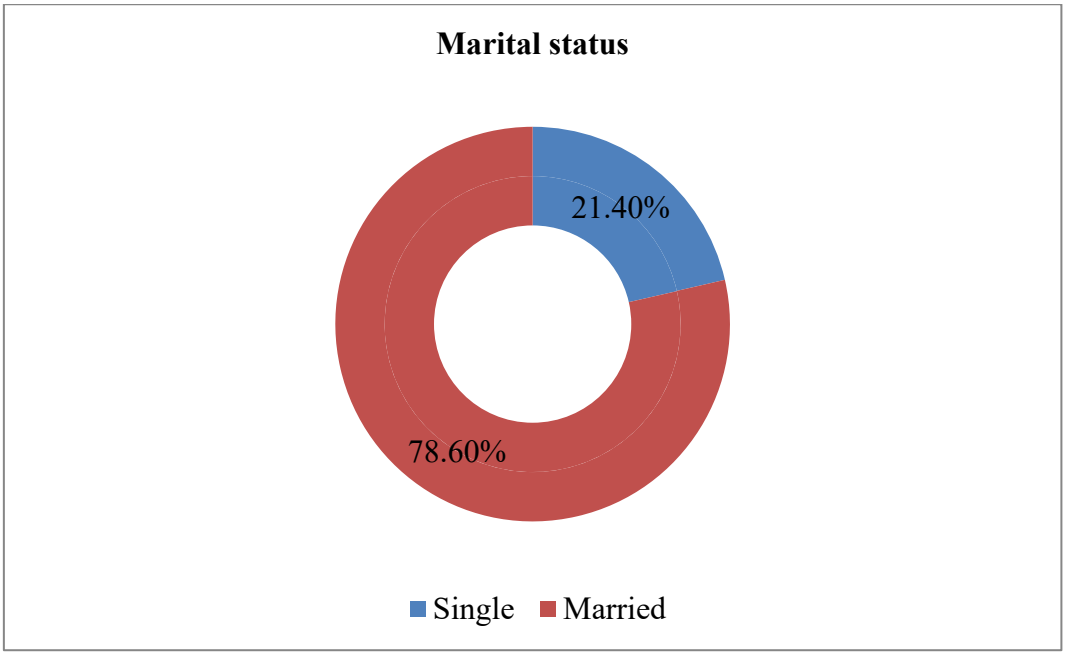


Figure-5: Marital status

In case of their marital status 55 participants or 78.60% which was majority of number of attendance were married, where 21.40% or 15 participants were single or unmarried.

4.1.6 Occupation of the participants

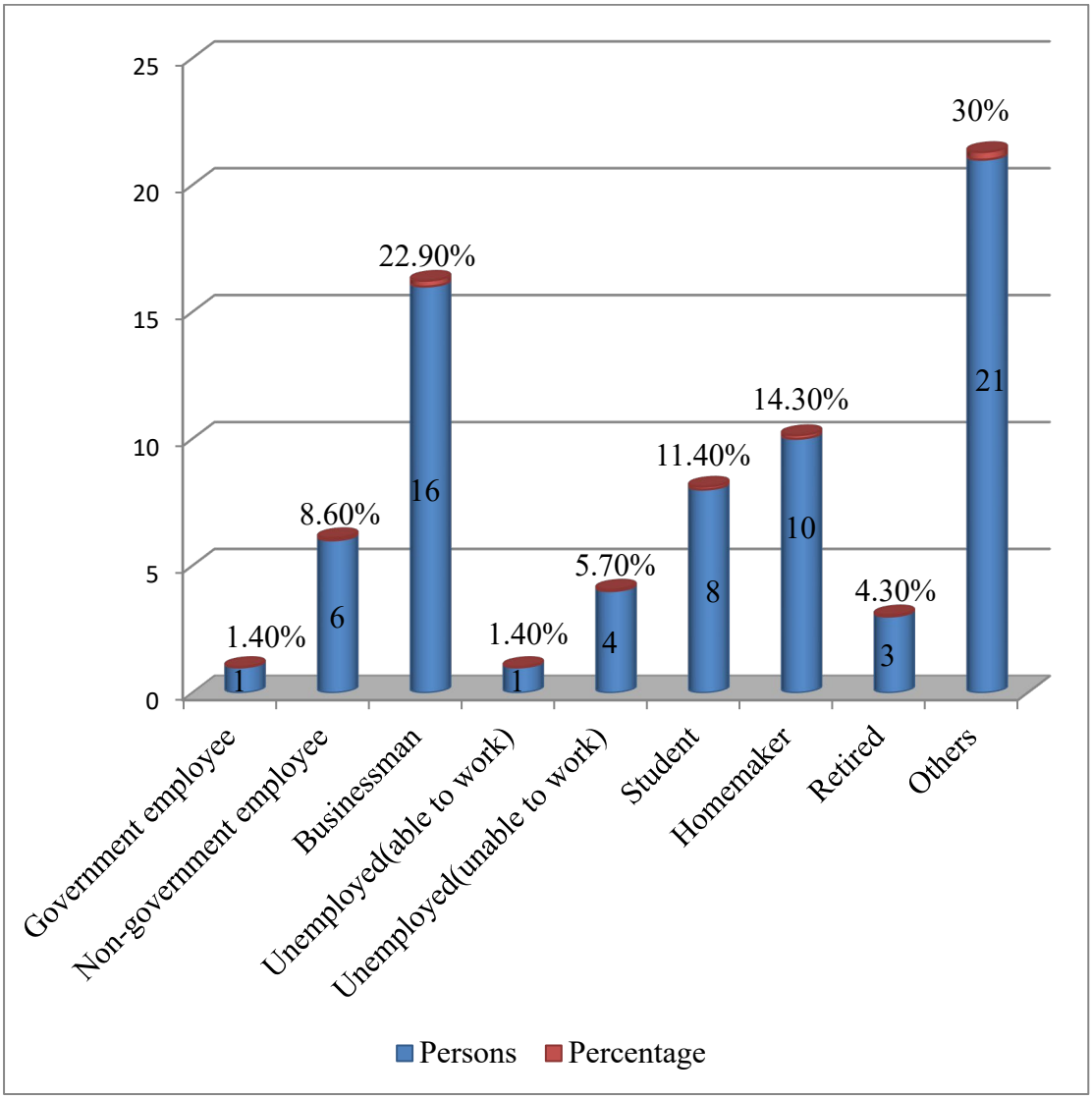


Figure-6: Occupation of the participants

Most of the participants lays on others category which was 30% or 21 participants of total attendance. Where it included rickshaw puller, driver, farmer, day laborer or other local works. Where 16 participants or 22.90% of total were businessman. 10 participants or 14.30% were homemaker. 8 participants or 11.40% were student. 6 participants or 8.60% were non-government employee where 1 participants or 1.40% was government employee. 4 participants or 5.70% unemployed just because of their inability to work. 1 participants or 1.40% was able to work though unemployed. 3 participants or 4.30% of total participants went for retired.

4.1.7 Family member of the participants

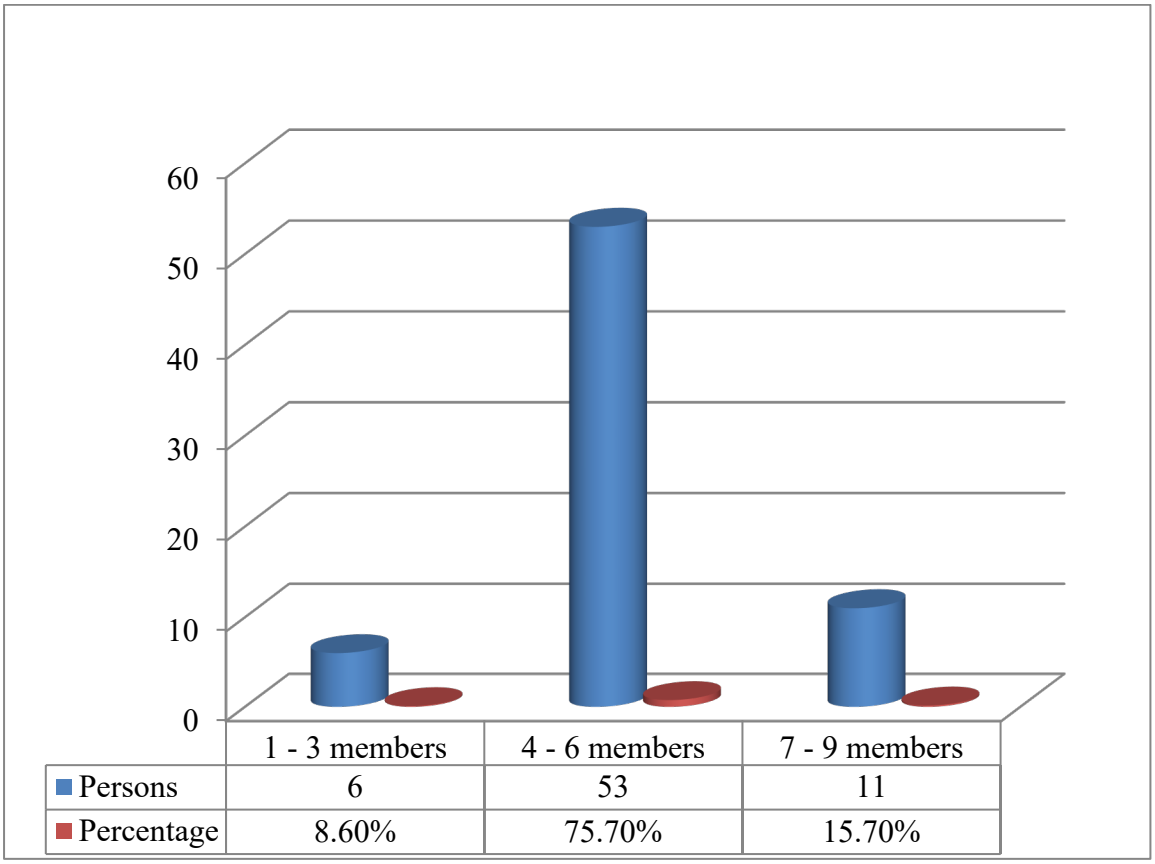


Figure-7: Family member of the participants

53 participants or 75.70% had at least 4-6 members in their family. Where 11 participants or 15.70% of total number was having 7-9 members in their family. 6 participants or 8.60% had 1-3 members in their family.

4.1.8 Earning member of family of the participants

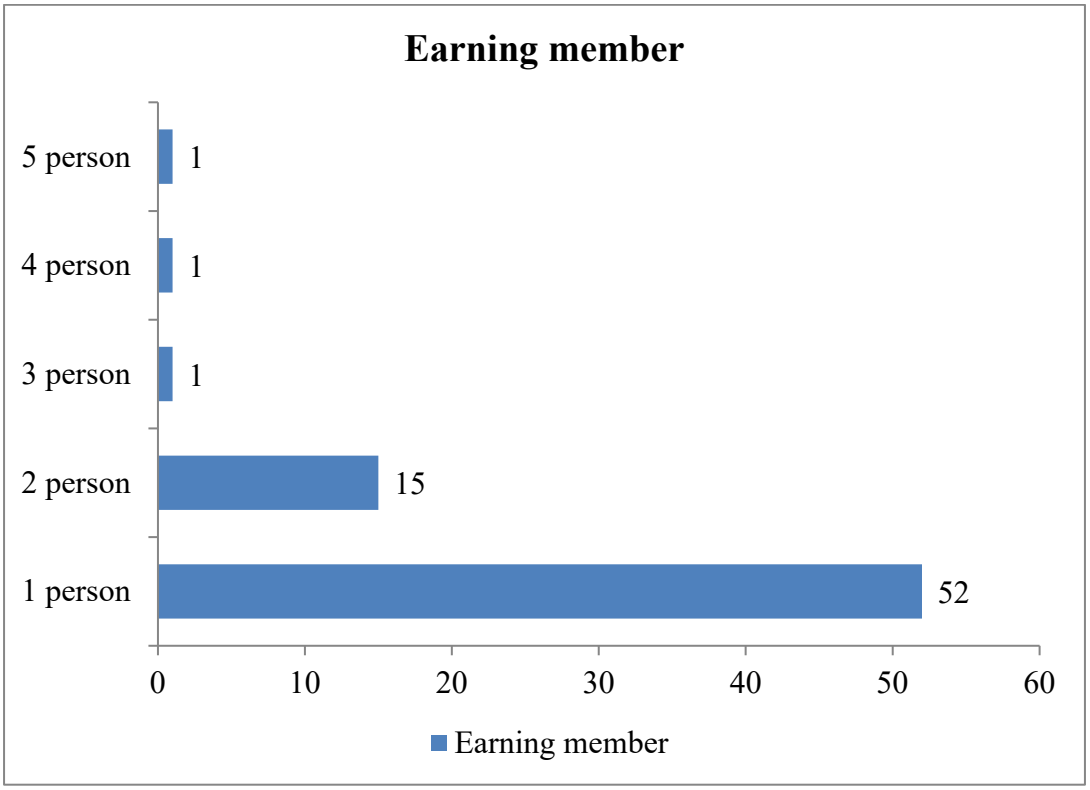


Figure-8: Earning member of family of participants

52 participants had 1 earning member in their family, 15 participants had 2 earning member, 3 participants each had respective to 3, 4 and 5 earning member in their family.

4.1.9 Causes of amputation

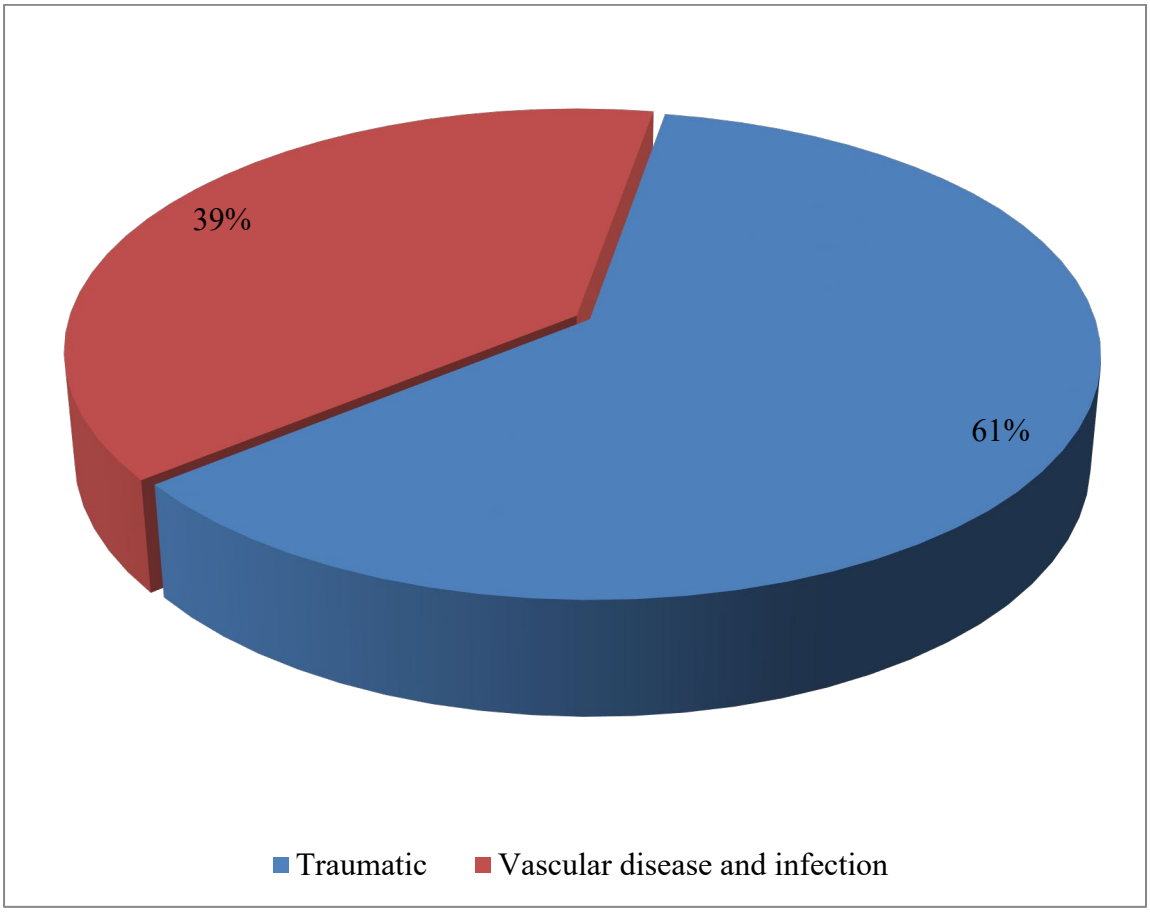


Figure-9: Causes of amputation

Most participants about 43 or 61% were amputee because of trauma, where 27 participants or 39% were became amputee person just because of vascular disease and infection.

4.1.10 Level of amputation

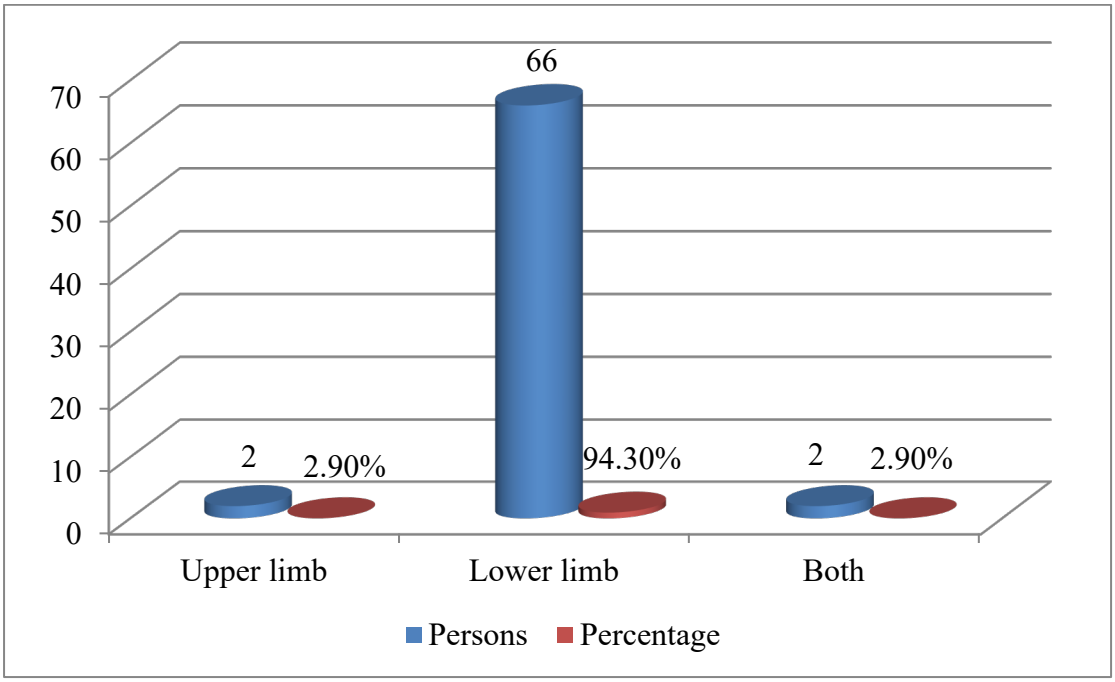


Figure-10: Level of amputation

In this study 66 participants or 94.30% went for lower limb amputation where 2 participants or 2.90% went for upper limb amputation. 2 participants or 2.90% alongside went for both limb amputations.

4.1.11 Area of amputation

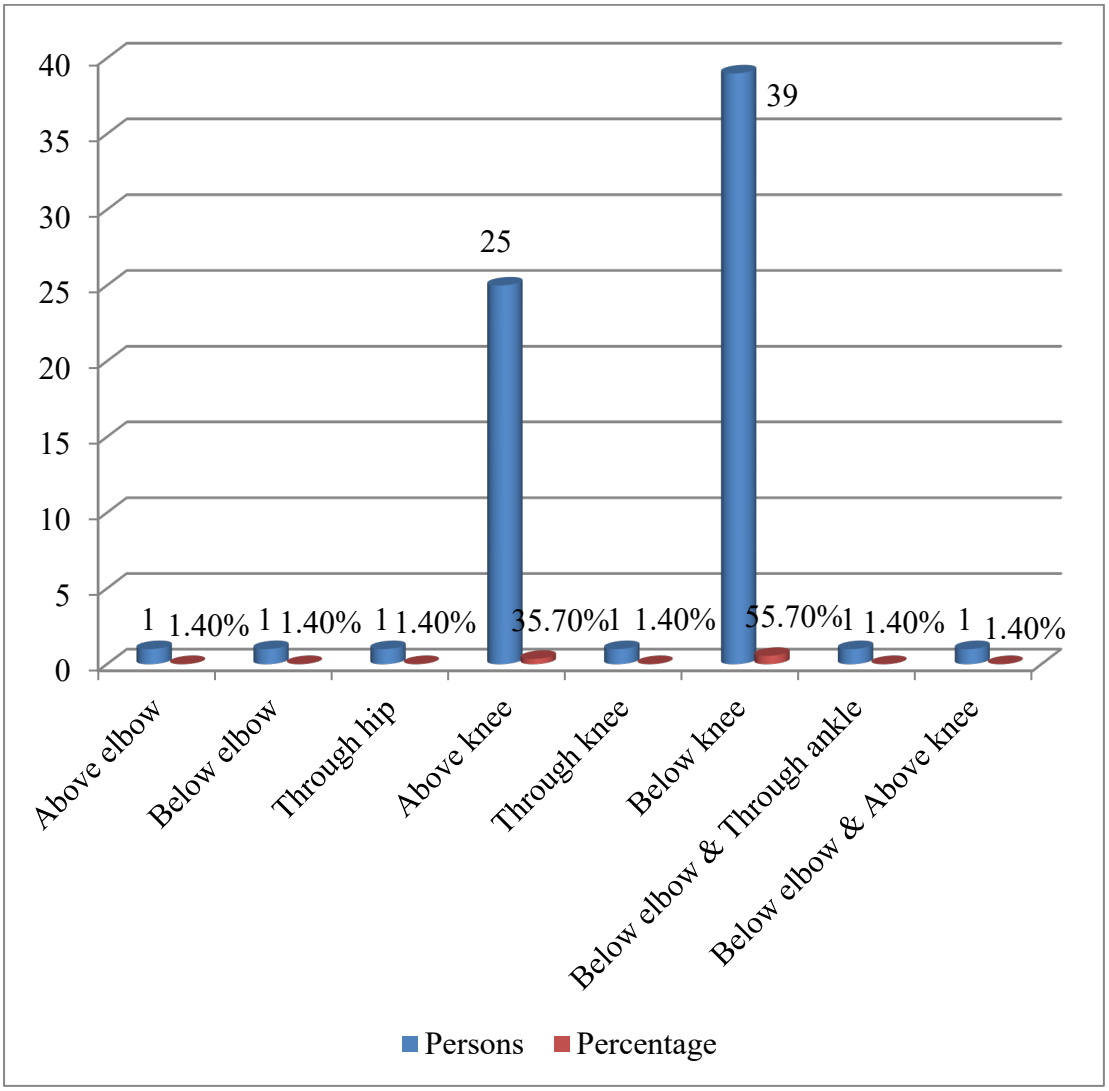


Figure-11: Area of amputation

Most of the cases of this study about 39 participants or 55.70% were gone for below knee amputation and afterwards 25 participants or 35.70% were above knee amputee. Above elbow, below elbow, through hip, through knee, below elbow and through ankle, below elbow and above knee each of them bears 1 participants or 1.40%.

4.1.12 Types of amputation

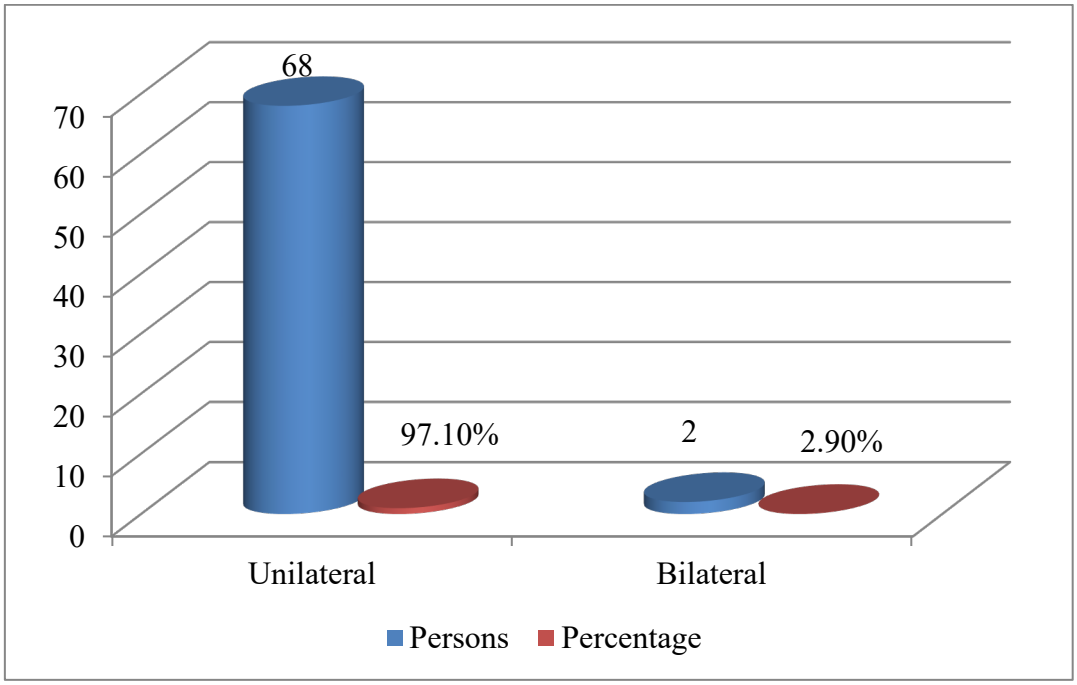


Figure-12: Types of amputation

68 participants or 97.10% were unilateral amputee and 2 participants or 2.90% were bilateral amputee in this study.

4.2. Level of depression of the participants

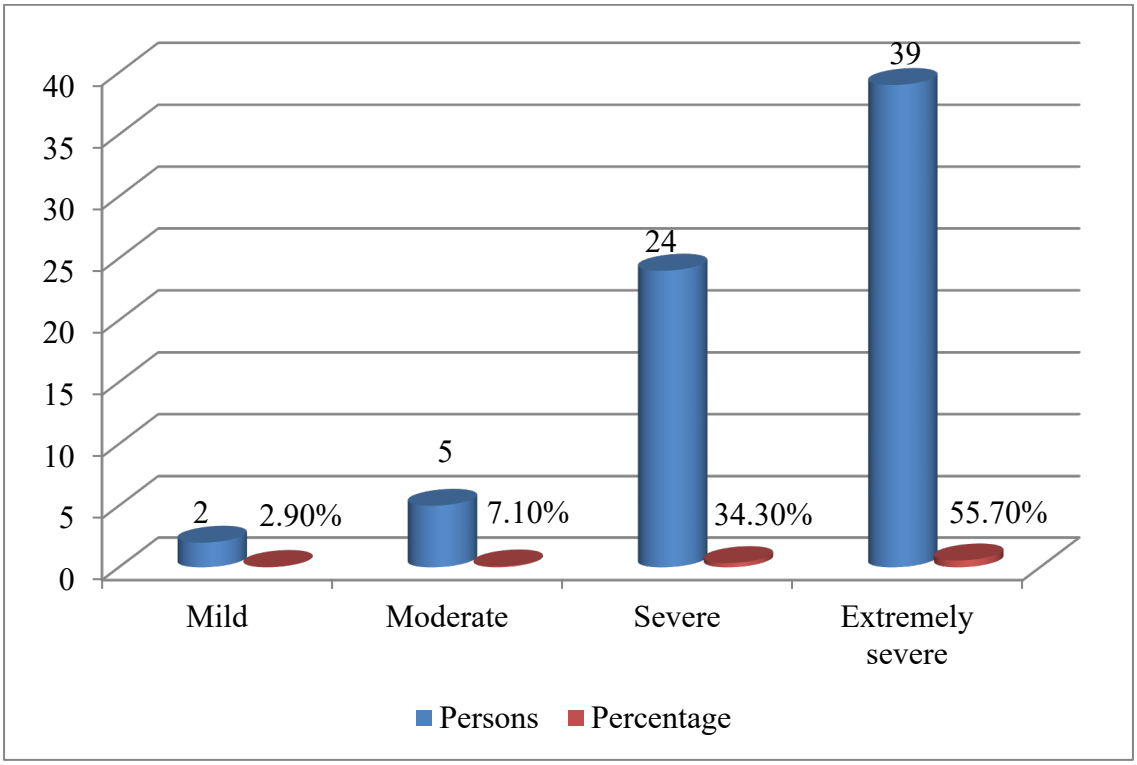


Figure-13: Depression level of the participants

Among 70 participants 39 participants or 55.70% had extremely severe depression level, where 24 participants or 34.30% had severe depression, 5 participants or 7.10% had moderate severity and 2 participants or 2.90% had mid depression level.

4.3 Level of anxiety of the participants

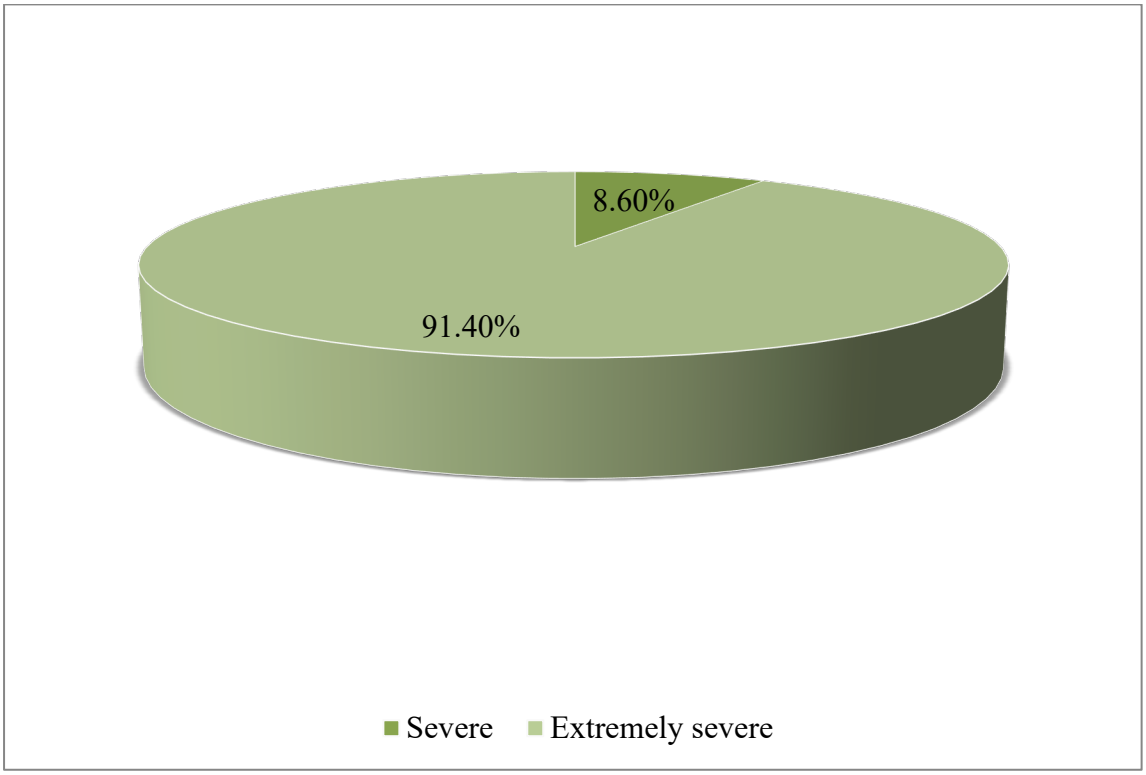


Figure-14: Anxiety level of the participants

Through this conducted study 64 participants or 91.40% had extremely severe anxiety level and 6 participants or 8.60% had severe anxiety level.

4.4 Level of stress of the participants

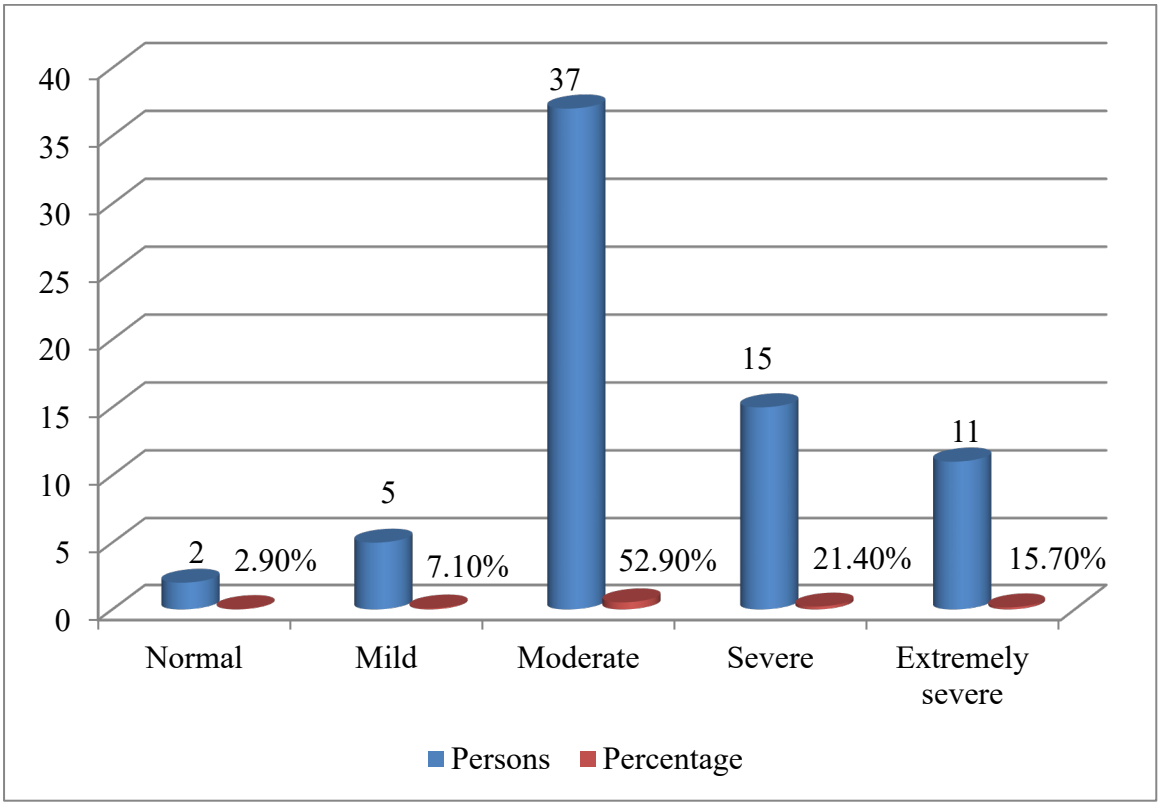


Figure-15: Stress level of the participants

Among 70 participants, 37 participants or 52.90% had moderate stress level, where it decreases in 15 participants or 21.40% having severe stress level, 11 participants or 15.70% had extremely severe stress level, where mild and moderate respective to 5 participants or 7.10% and 2 participants of total number of the participants.

4.5 Association between predicted variables & response variables

Chi- square test was performed to detect the significance of the association between predicted variables and response variables.

A significant association was observed between age category and depression ($\chi 2$ - value: 28.272, P- value: 0.001) and stress ($\chi 2$ - value: 24.034, P- value: 0.020).

Table- 1: Association between predicted variables & response variables

Predicted variables:	**Response variables:**	**Depression**	**Anxiety**	**Stress**
Age		$\chi 2$ – value: 28.272	$\chi 2$ – value: 0.847	$\chi 2$ – value: 24.034
		P- value: **0.001***	P- value: 0.838	P- value: **0.020***
Gender		$\chi 2$ – value: 1.991	$\chi 2$ – value: 3.691	$\chi 2$ – value: 0.966
		P- value: 0.574	P- value: 0.055	P- value: 0.915
Occupation		$\chi 2$ – value: 10.976	$\chi 2$ – value: 8.947	$\chi 2$ – value: 16.729
		P- value: 0.989	P- value: 0.347	P- value: 0.988
Earning member of the family		$\chi 2$ – value: 4.475	$\chi 2$ – value: 0.767	$\chi 2$ – value: 20.296
		P- value: 0.973	P- value: 0.943	P- value: 0.207
Causes of amputation		$\chi 2$ – value: 4.195	$\chi 2$ – value: 2.186	$\chi 2$ – value: 5.082
		P- value: 0.241	P- value: 0.139	P- value: 0.279
Level of amputation		$\chi 2$ – value: 5.466	$\chi 2$ – value: 0.398	$\chi 2$ – value: 9.035
		P- value: 0.486	P- value: 0.820	P- value: 0.339
Type of amputation		$\chi 2$ – value: 3.946	$\chi 2$ – value: 0.193	$\chi 2$ – value: 1.836
		P- value: 0.267	P- value: 0.660	P- value: 0.766

*** Significant**

CHAPTER- V DISCUSSION

The amputation of a limb brings about several changes in the psychological and social functioning of an individual. In this study in between 70 participants maximum age was 74 years and as follws minimum age was 16 years where mean age calculation was 39.9429 years. Most of the participants were in age range of 21-60 years about 88.60%, where it included youth, adult. Other 8.60% were senior adult. Only 2.90% were adolescent. Lower limb amputations are more often done usually at the age between fifties and seventies, average age of the patients with amputation was 65 years (Hirsh et al., 2010). People who sustain traumatic limb amputation, whether military or civilian, are typically working-age adults in otherwise good health. The circumstances surrounding disease-related amputation and the associated long-term prognoses differ substantially from those surrounding traumatic amputation (Dougherty, 2001). Negative relationship of age with development of depression and anxiety symptoms has been reported (Nunes et al., 2012). Another study found no significant difference in major depressive disorder post-amputation with respect to age (Karira et al., 2011).

However, noted a positive relationship between advanced age and psychological disorders (Rybarczyk et al., 1995). This study also found positive relation between age, depression and stress. Where the interaction between age and time since amputation did not predict depression (Frank et al., 1984). Younger participants readily seek help for their psychological problems in comparison to older people (Ebrahimzadeh et al., 2004). Which is consistent with this study. Among 70 participants 80% were male as dominant comparatively to female in this study.

Amputations are more common among males than females (Yakubu et al., 1996). Male predominance could be derived from the reason that ours is a patriarchal type of society where the men are the bread earners of the family and the women usually prefer to stay at home. Another reason could be that men report for rehabilitation and also seek help for their psychological problems more readily. Similar findings have also been reported where they reported 75% of patients were male (Cavanagh et al., 2006).

In other research showed before that gender does not prove to be significant predictor (Solgajová et al., 2015). The majority of patients are males with range of 14–65 years

(mean age: 33.29 years) which means that it most commonly involves the reproductive age group (Malik et al., 2012).

Most of the participants live in rural area about 65.70% or 46 persons where 34.30% or 24 person live in urban area in this study. Another research reported that majority (81%) of their cases were from rural areas. Most likely explanation for that observation was that the majority (74.9%) of the population in their state was from rural back ground (Mansoor et al., 2010).

Education maximum participants received or completed their primary education 32.90% or 23 participants, 30.00% or 21 participants completed or received their secondary education, 6 participants or 8.60% went for higher secondary, 5.70% or 4 participants went for undergraduate and also the same number and percentage follows for graduate level. Only 3 participants or 4.30% went for post graduate degree and in between 70 participants 9 participants or 12.90% were illiterate. Low literacy rates is explained on the basis that most of the people who visit government hospitals of their valley are from poor background where it is very difficult for people to achieve and afford formal education. The other reason could be that Jammu & Kashmir is one of the states of India where literacy rates are low (54.46%) than average in India (Mansoor et al., 2010). Study of amputees reported that majority of their patients were uneducated (Shukla et al., 1982).

55 participants or 78.60% which was majority of number of attendance were married, where 21.40% or 15 participants were single or unmarried in this study. Unmarried patients and those married with no kids were more prone to develop depressive tendencies. It has been reported that single patients and patients with no social support had more depression and anxiety (Hawamdeh et al., 2008). Amputees who were married had a lower rate of mental health problems (Nunes et al., 2012). Patients who were divorced or separated were twice as likely to suffer from depressive symptoms as those in a relationship (Darnall et al., 2005).Most of the participants lays on others category which was 30% or 21 participants of total attendance.

Where it included rickshaw puller, driver, farmer, day laborer or other local works. Where 16 participants or 22.90% of total were businessman. 10 participants or 14.30% were homemaker. 8 participants or 11.40% were student. 6 participants or 8.60% were non-government employee where 1 participants or 1.40% was government employee. 4 participants or 5.70% unemployed just because of their inability to work. 1 participants or 1.40% was able to work though unemployed. 3

participants or 4.30% of total participants went for retired. Unemployed patients suffers from depression than others (Hawamdeh et al., 2008).

In this study 52 participants had 1 earning member in their family, 15 participants had 2 earning member, 3 participants each had respective to 3, 4 and 5 earning member in their family. The unemployed status of male members can have a direct impact on the family's income and living standards, since in India the male is traditionally the primary earning member of the family (Mathur, 1994).

Most participants in this study about 43 or 61% were amputee because of trauma, where 27 participants or 39% were became amputee person just because of vascular disease and infection. Previous study in Bangladesh found that vascular diseases as the most common indication of limb amputation (Aftabuddin et al., 1997). Another research found that traumatic amputees were at greater risk of significant depressive symptoms when compared to amputation secondary to vascular causes and cancer (Darnall et al., 2005). Patients with lower limb amputation are included in the group of patients with chronic diseases; their amputation is often a result of their chronic disease (diabetes mellitus, arteriosclerosis).The patients are usually informed about a potential amputation as a result of their chronic disease which they have had for several months, thus they have adequate time to prepare for such a situation (Hampel et al., 2005).

In this study 66 participants or 94.30% went for lower limb amputation where 2 participants or 2.90% went for upper limb amputation. 2 participants or 2.90% alongside went for both limb amputations. Previously not significant research found for this study. In this study 68 participants or 97.10% were unilateral amputee and 2 participants or 2.90% were bilateral amputee in this study. Not significant association found here in this study.

Among 70 participants 39 participants or 55.70% had extremely severe depression level, where 24 participants or 34.30% had severe depression, 5 participants or 7.10% had moderate severity and 2 participants or 2.90% had mid depression level. A study from India, reported that 63% of the amputee were suffering from major depressive disorder (Mansoor et al., 2010).

(Reiber et al., 2010) found an intriguing inverse relationship in that multiple amputees had lower levels of anxiety and depression, Younger amputees had increased psychological symptoms and increased rate of depression. Through this conducted study 64 participants or 91.40% had extremely severe anxiety level and 6 participants

or 8.60% had severe anxiety level. In a recent report concluded that 67% of all amputees did not cope with their amputation and became depressive while 15% developed symptoms of anxiety (Shukla et al., 1982).

Among 70 participants, 37 participants or 52.90% had moderate stress level, where it decreases in 15 participants or 21.40% having severe stress level, 11 participants or 15.70% had extremely severe stress level, where mild and moderate respective to 5 participants or 7.10% and 2 participants of total number of the participants. Previously research also not significant as associate with the conducted study. Well-known fact that anxiety symptoms are associated with traumatic stress symptoms (Cavanagh et al., 2006).

Limitations of the study:

100% accuracy will not be possible in any research so that some limitation may exist. Regarding this study, there were some limitations or barriers to consider the result of the study. The limitation of this study was small sample size. It was taken only 70 samples. Due to time limitation and COVID-19 spread out least of data was collected over phone. Also To conduct the research project on this topic, time period was very limited. Time and resources were limited which have a great deal of impact on the study. Convenience sampling often suffers from biases because this method may represent the views of a specific group and not the entire population. In this study sample was conducted at Centre for the Rehabilitation of the Paralysed (CRP) which may not represent the whole country. No research has been done before on this topic specifically. So there was little evidence to support the result of this project in the context of Bangladesh.

CHAPTER-VI CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion:

Amputation is one of the leading causes of poor functioning, hampered daily living activities and a socioeconomic challenge. This is particularly true for developing countries like Bangladesh, where health support system including the rehabilitation system is not within the reach of ordinary people. It is clear that, this destructive condition not only affects the patient but also their family. Bangladesh is a developing country with low socio-economic condition where people are not enough concerned about psychological terms and implications. Health services are not sufficient in the Government and non-government sector. Through this study level of depression, anxiety, stress may not defined well but a view may articulated through this. There is no related research in our country, so it will help further level for next several years.

6.2 Recommendations:

Regular follow up for the patients must be included after rehabilitation period. The amputee group should have access to the amputee care program which will provide psychiatric care alongside rehabilitation. Family support, enhance willpower to survive, so it will be better to provide family education that it is a situation where nobody have any options.

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APPENDICES

Appendix-I Permission letter

Permission letter

16/06/2021

The Head of the program

Centre for the Rehabilitation of the Paralysed (CRP),

Chapain, Savar, Dhaka-1343.

Subject: Seeking permission for data collection of 4th year physiotherapy research project.

Respected Sir,

With due respect and humble submission to state that I am Md. Nasim Mahmud, student of 4th Professional B.Sc. in Physiotherapy at Bangladesh Health Professions Institute (BHPI). The ethical committee has approved my research project entitled on **"Level of depression, anxiety and stress among the persons with amputee"** under the supervision of Prof. Md. Obaidul Haque, Professor of physiotherapy and Vice principal (BHPI),CRP, Savar, Dhaka-1343, Bangladesh. Conducting this research project is partial fulfillment of the requirement for the degree of B.Sc. in physiotherapy. I want to collect data for my research project from the patients of Prosthetics & Orthotics (P&O) department, CRP-Savar. So, I need permission for data collection from the Prosthetics & Orthotics (P&O) department of CRP-Savar. I would like to assure that anything of my study will not be harmful for the participants.

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

Sincerely,

Md. Nasim Mahmud.

Md. Nasim Mahmud
4th professional B.Sc. in Physiotherapy
Roll: 04, Session: 2015-16, ID: 112150275

BHPI, CRP, Savar , Dhaka-1343, Bangladesh

Recommended and forwarded to P&O Head for kind consent
16.06.21

Forwarded & Recommended
16.06.21
Prof. Md. Obaidul Haque
Vice-Principal
BHPI, CRP, Savar, D...

For Md. Azizul Islam Mollah
P&O dept...

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

Ref:

Date:

CRP/BHPI/IRB/06/2021/466

16/06/2021

To
Md. Nasim Mahmud
B.Sc. in Physiotherapy
Session: 2015-16, Student ID: 112150275
BHPI, CRP, Savar, Dhaka-1343, Bangladesh.

Subject: Approval of the thesis proposal **"Level of Depression, Anxiety and Stress among the persons with Amputee"** by ethics committee.

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

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

The purpose of the study is to determine the level of depression, anxiety and stress among the persons with amputee. The study involves use of a questionnaire to identify the level of depression, anxiety and stress among the persons with amputee, that may take 20 to 25 minutes to answer the questionnaire and there is no likelihood of any harm to the participants. The members of the Ethics committee have approved the study to be conducted in the presented form at the meeting held at 8.30 am on 1st March, 2020 at BHPI (23rd 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

Appendix-II Consent form (Bengali & English)

সম্মতি পত্র

আসসালামুয়ালাইকুম,আমি মোঃ নাসিম মাহমুদ , বি এস সি ইন ফিজিওথেরাপীর, বি এইচ পি আই ,সি আর পি সাভার ঢাকা—১৩৪৩ এর চতুর্থ বর্ষের একজন ছাত্র। আমি আপনাকে আমার এই গবেষণা কার্যক্রম এ অংশগ্রহন করতে বলছি। এই ফর্ম টি আপনাকে আমার গবেষণা বিষয়ে তথ্য দিবে। আমি আমার গবেষণা সম্পর্কে যে কোন বর্ণনা এবং আপনার প্রশ্নের উত্তর দিব। আমার গবেষণার শিরোনাম '' অঙ্গহানি হওয়া ব্যাক্তিদের দুশ্চিন্তা , উদ্বেগ ,মানসিক চাপ এর মাত্রা ''। এই গবেষণার উদ্দেশ্য অঙ্গহানি হওয়া ব্যাক্তিদের দুশ্চিন্তা , উদ্বেগ ,মানসিক চাপ এর মাত্রা নিরূপণ করা । এটি প্রায় ২০-৩০ মিনিট নিবে।

এই গবেষণা চলাকালীন আপনি যদি কোন ধরনের মানসিক অস্বস্তি , সামাজিক এবং অর্থনৈতিক ঝুঁকি ,শারীরিক ঝুঁকি বা অন্য কোন সমস্যা বোধ করেন তাহলে আমাকে বলবেন । এই গবেষণায় অংশগ্রহন করার জন্য আপনাকে কোন পারিশ্রমিক দেওয়া হবে না । সকল তথ্য গোপন থাকবে এবং তা সংরক্ষিত থাকবে ।

আপনার অংশগ্রহণ সম্পূর্ণই ঐচ্ছিক এবং আপনি যে কোন সময় আপনি এটা বাদ দিতে পারবেন যদি আপনার মনে হয় এটা আপনার জন্য ক্ষতিকর । আপনার যে কোন সুনির্দিষ্ট প্রশ্নের উত্তর দেওয়ারও অধিকার আছে । আপনার যদি এই গবেষণা কোন জিজ্ঞাসা থাকে, আপনি আমার সুপারভাইজার প্রফেসর মোঃ ওবায়দুল হক ,প্রফেসর অফ ফিজিওথেরাপি এবং ভাইস প্রিন্সিপাল, বি এইচ পি আই , সি আর পি ,সাভার ,ঢাকা ।

শুরু করার পূর্বে আপনার কি কোন প্রশ্ন আছে?

আমি কি আপনার সম্মতি নিয়ে ইন্টারভিউ শুরু করতে পারি?

হ্যাঁ ☐ না ☐

প্রশ্ন কারীর সাক্ষর ও
তারিখ.....

অংশগ্রহণকারীর সাক্ষর ও তারিখ .....

"Informed consent"

Assalamu Alaikum, I am Md. Nasim Mahmud, 4th Year B.Sc in Physiotherapy student, BHPI, CRP, Savar, Dhaka-1343. I am asking you to participate in a research study. This form is designed to give you information about this study. I want to describe this study to you and answer any of your questions. My project title is **"Level of depression, anxiety and stress among the persons with amputee"** The purpose of this study To identify the level of depression, anxiety and stress among amputee persons.This will take approximately 20 - 30 minutes.

During the interview period if you feel any emotional disturbance, social and economic risk and any other discomfort, physical risk please tell me, I will stop the interview immediately. I am committed that the study will not harmful or risk for you. There is no payment for taking part in the study. All information provided by you will be treated as confidential and in the event of any report or publication it will be ensured that the source of information remains anonymous.

Your participation in this study is voluntary and you may withdraw yourself at any time during this study without any negative consequences. You also have the right not to answer a particular question that you don't like or do not want to answer during interview. If you have any query about the study or your right as a participant, you may contact with me or my supervisor Prof. Md. Obaidul Haque, Professor of physiotherapy and vice principal, BHPI, CRP, Savar, Dhaka. Do you have any questions before I start?

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

YES ☐ NO ☐

Signature of the Investigator & Date: .....

Signature of the Participant & Date: .....

Appendix-III Questionnaire (Bengali & English)

" অঙ্গহানী হওয়া ব্যক্তিদের বিষণ্ণতা ,উদ্বেগ ও মানসিক চাপ এর মাত্রা "

সামাজিক - জনতাত্ত্বিক প্রশ্ন

প্রশ্নকারীর নামঃ..... ইন্টারভিউ এর তারিখঃ.....

প্রথম অংশঃ অংশগ্রহণকারীর পরিচিতি

নামঃ.....
আইডিঃ.....
ঠিকানাঃ.....মোবাইলঃ .....

দ্বিতীয় অংশঃ জনতাত্ত্বিক প্রশ্ন

সিরিয়াল	প্রশ্ন	উত্তর	কোড
০১	বয়স	বছরঃ	
০২	লিঙ্গ	1. পুরুষ 2. মহিলা	1 2
০৩	বাসবাসের স্থান	1. শহর 2. গ্রাম	1 2
০৪	শিক্ষাগত যোগ্যতা	1. অশিক্ষিত 2. প্রাথমিক 3. মাধ্যমিক 4. উচ্চমাধ্যমিক 5. অস্নাতক 6. স্নাতক 7. স্নাতকোত্তর	1 2 3 4 5 6 7
০৫	বৈবাহিক অবস্থা	1. ব্যাচেলর 2. বিবাহিত 3. পৃথক 4. তালাকপ্রাপ্ত 5. অবিবাহিত	1 2 3 4 5
০৬	পেশা	1. সরকারি চাকুরীজীবী 2. বেসরকারি চাকুরীজীবী 3. ব্যাবসায়ি 4. বেকার (কাজ করতে পারে) 5. বেকার (কাজ করতে পারে না) 6. ছাত্র 7. গৃহিণী 8. অবসরপ্রাপ্ত 9. অন্যান্য	1 2 3 4 5 6 7 8 9

সিরিয়াল	প্রশ্ন	উত্তর	কোড
০৭	পরিবারের লোকসংখ্যা	সংখ্যাঃ	
০৮	উপার্জন ক্ষম লোক	সংখ্যাঃ	
০৯	অঙ্গহানির কারণ		
১০	অঙ্গহানির স্তর	1. উপরের অঙ্গ 2. নিচের অঙ্গ	1 2
১১	অঙ্গহানির জায়গা	1. কনুয়ের উপর 2. কনুয়ের নিচে 3. কাঁধের মাঝে 4. হিপের মাঝে 5. হাঁটুর উপর 6. হাঁটুর নিচে 7. হাঁটুর মাঝে 8. গোড়ালির মাঝে	1 2 3 4 5 6 7 8
১২	অঙ্গহানির ধরন	1. এক পাশ 2. উভয়পাশ	1 2

"তৃতীয় অংশঃ দুশ্চিন্তা উদ্বেগ এবং মানসিক চাপ পরিমাপক"

দুশ্চিন্তাঃ

০ আমার ক্ষেত্রে প্রযোজ্য নয় - কখনই না

১ আমার জন্য অল্পমাত্রায় বা কখনো কখনো প্রযোজ্য - মাঝেমাঝে

২ আমার জন্য বেশ কিছু মাত্রায় বা বেশ খানিকটা সময়ের জন্য প্রযোজ্য - প্রায়শই

৩ আমার জন্য খুব বেশই মাত্রায় বা বেশিরভাগ সময়ের জন্য প্রযোজ্য - প্রায় সবসময়

সিরিয়াল	প্রশ্ন	কখনই না = ০	মাঝেমাঝে = ১	প্রায়শই = ২	প্রায় সবসময় = ৩	স্কোর
১৩	ইতিবাচক কোন অনুভূতিই আমার মধ্যে কাজ করত না					
১৪	নিজ উদ্যোগী হয়ে কোন কাজ শুরু করা আমার জন্য কঠিন হত					
১৫	আমার মনে হচ্ছিল ভবিষ্যতে আমার ভাল কিছুরই আশা নেই					
১৬	আমি মনমরা এবং বিষণ্ন অনুভব করতাম					
১৭	কোন কিছুতেই আমি বেশী আগ্রহী হতে পারতাম না					
১৮	আমি অনুভব করতাম ব্যাক্তি হিসেবে আমার বিশেষ কোন মূল্য নেই					
১৯	জীবন টা অর্থহীন মনে হত					
				মোট		

উদ্বেগঃ

০ আমার ক্ষেত্রে প্রযোজ্য নয় - কখনই না

১ আমার জন্য অল্পমাত্রায় বা কখনো কখনো প্রযোজ্য - মাঝেমাঝে

২ আমার জন্য বেশ কিছু মাত্রায় বা বেশ খানিকটা সময়ের জন্য প্রযোজ্য - প্রায়শই

৩ আমার জন্য খুব বেশই মাত্রায় বা বেশিরভাগ সময়ের জন্য প্রযোজ্য - প্রায় সবসময়

সিরিয়াল	প্রশ্ন	কখনই না = ০	মাঝেমাঝে = ১	প্রায়শই = ২	প্রায় সবসময় = ৩	স্কোর
২০	আমি বুঝতে পারতাম যে আমার গলা শুকিয়ে আসছে					
২১	আমার শ্বাসকষ্টের অনুভূতি হত (যেমন অতিদ্রুত শ্বাসপ্রশ্বাস, শারীরিক পরিশ্রম ছাড়াই নিঃশ্বাস বন্ধ হয়ে আসা)					
২২	আমার শরীর কাঁপার অভিজ্ঞতা হয়েছিল (যেমন হাত কাঁপা) ।					
২৩	আমি এমন পরিস্থিতি সম্পর্কে দুশ্চিন্তাগ্রস্ত ছিলাম যেখানে আমি তীব্রভাবে আতঙ্কিত হতে পারি এবং এমন কোন কাজ করতে পারি যাতে অন্যরা আমাকে বোকা মনে করবে ।					
২৪	আমার মনে হত এই বুঝি আমি হটাত তীব্রভাবে আতঙ্কগ্রস্ত হচ্ছি					
২৫	শারীরিক পরিশ্রম না করলেও আমি হৃদপিণ্ডের কাজ করা বুঝতাম					
২৬	যথাযথ কারণ ছাড়াই আমি ভীতসন্ত্রস্ত বোধ করতাম ।					
				মোট		

মানসিক চাপঃ

০ আমার ক্ষেত্রে প্রযোজ্য নয় - কখনই না

১ আমার জন্য অল্পমাত্রায় বা কখনো কখনো প্রযোজ্য - মাঝেমাঝে

২ আমার জন্য বেশ কিছু মাত্রায় বা বেশ খানিকটা সময়ের জন্য প্রযোজ্য - প্রায়শই

৩ আমার জন্য খুব বেশই মাত্রায় বা বেশিরভাগ সময়ের জন্য প্রযোজ্য - প্রায় সবসময়

সিরিয়াল	প্রশ্ন	কখনই না = ০	মাঝেমাঝে = ১	প্রায়শই = ২	প্রায় সবসময় = ৩	স্কোর
২৭	কোন উৎকণ্ঠা বা উত্তেজনামূলক কাজের পর আরামদায়ক অবস্থায় ফিরে আসা আমার জন্য কঠিন ছিল ।					
২৮	আমার মধ্যে বিভিন্ন পরিস্থিতিতে অতিরিক্ত প্রতিক্রিয়া করার প্রবণতা ছিল।					
২৯	আমার মনে হত আমি খুব বেশী স্নায়ু চাপে ভুগছি					
৩০	আমি অনুভব করতাম যে আমি খুব বেশি অস্থির হয়ে যাচ্ছি					
৩১	আরাম বোধ করা আমার জন্য কঠিন হত					
৩২	আমার কাজে বাধা হয় এমন যে কোন জিনিস ই আমার কাছে অসহ্য লাগত					
৩৩	আমি অনুভব করতাম আমি একটুতেই মনে ব্যাথা পাই					
				মোট		

DASS ২১ স্কোর

দুশ্চিন্তা স্কোর	উদ্বেগ স্কোর	মানসিক চাপ স্কোর

সিভিয়ারিটি	দুশ্চিন্তা	উদ্বেগ	মানসিক চাপ
নরমাল	০-৪	০-৩	০-৭
মাইল্ড	৫-৬	৪-৫	৮-৯
মডারেট	৭-১০	৬-৭	১০-১২
সিভিয়ার	১১-১৩	৮-৯	১৩-১৬
এক্সট্রেম্লি সিভিয়ার	১৪+	১০+	১৭+

"Level of depression, anxiety and stress among the persons with amputee"

Socio-demographic questionnaire

Name of Interviewer: ..... Date of interview: .....

"Part one: Respondent Identification"

Name of Respondent: ..... ID no: .....

Address: .....Contact number: .....

"Part two: Demographic Information"

SN	Questions	Response	Code
01.	How old are you?	Years:	
02.	Gender	1. Male 2. Female	1 2
03.	Living area	1. Urban 2. Rural	1 2
04.	Level of education	1. Illiterate 2. Primary 3. Secondary 4. Higher Secondary 5. Undergraduate 6. Graduate 7. Post graduate	1 2 3 4 5 6 7
05.	Marital status	1. Single 2. Married 3. Separated 4. Divorced 5. Unmarried	1 2 3 4 5
06.	Employment status	1. Government employee 2. Non-government employee 3. Businessman 4. Unemployed(able to work) 5. Unemployed(unable to work) 6. Student 7. Homemaker 8. Retired 9. Others	1 2 3 4 5 6 7 8 9

SN	Questions	Response	Code
07.	Family member	Number:	
08.	Earning member	Number:	
09.	Cause of amputation		
10.	Level of amputation	1. Upper limb 2. Lower limb	1 2
11.	Area of amputation	1. Above elbow 2. Below elbow 3. Through shoulder 4. Through hip 5. Above knee 6. Through knee 7. Below knee 8. Through ankle	1 2 3 4 5 6 7 8
12.	Types of amputation	1. Unilateral 2. Bilateral	1 2

"Part three: Depression, Anxiety & Stress Scale"

- **Depression: (Over the past week)**

0 Did not apply to me at all – NEVER

1 Applied to me some degree, or some of time – SOMETIMES

2 Applied to me to a considerable degree, or a good part of time – OFTEN

3 Applied to me very much, or most of the time – ALMOST ALWAYS

SN	Questions	N=0	S=1	O=2	AA=3	Score
13.	I couldn't seem to experience any positive feeling at all					
14.	I found it difficult to work up the initiative to do thing					
15.	I felt that I had nothing to look forward to					
16.	I felt down-hearted and blue					
17.	I was unable to become enthusiastic about anything					
18.	I felt I wasn't worth much as a person					
19.	I felt that life was meaningless					
				Totals:		

❖ **Anxiety: (Over the past week)**

0 Did not apply to me at all – NEVER

1 Applied to me some degree, or some of time – SOMETIMES

2 Applied to me to a considerable degree, or a good part of time – OFTEN

3 Applied to me very much, or most of the time – ALMOST ALWAYS

SN	Questions	N=0	S=1	O=2	AA=3	Score
20.	I was aware of dryness of my mouth					
21.	I experienced breathing difficulty(eg, excessively rapid breathing, breathlessness in the absence of physical exertion)					
22.	I experienced trembling(eg, in the hands)					
23.	I was worried about situations in which I might panic and make a fool of myself					
24.	I felt I was close to panic					
25.	I was aware of the action of my heart in the absence of physical exertion(eg, sense of heart rate increase, heart missing a beat)					
26.	I felt scared without any good reason					
				Totals:		

❖ **Stress: (Over the past week)**

0 Did not apply to me at all – NEVER

1 Applied to me some degree, or some of time – SOMETIMES

2 Applied to me to a considerable degree, or a good part of time – OFTEN

3 Applied to me very much, or most of the time – ALMOST ALWAYS

SN	Questions	N=0	S=1	O=2	AA=3	Score
27.	I found it hard to wind down					
28.	I tended to over-react to situations					
29.	I felt that I was using a lot of nervous energy					
30.	I found myself getting agitated					
31.	I found it difficult to relax					
32.	I was intolerant of anything that kept me from getting on with what I was doing					
33.	I felt I was rather touchy					
				Totals:		

DASS 21 SCORE

Depression Score	Anxiety Score	Stress score

Severity	Depression	Anxiety	Stress
Normal	0-4	0-3	0-7
Mild	5-6	4-5	8-9
Moderate	7-10	6-7	10-12
Severe	11-13	8-9	13-16
Extremely severe	14+	10+	17+