EFFECTIVENESS OF PSYCHOTHERAPEUTIC INTERVENTION ON PSYCHOLOGICAL HEALTH AND ADJUSTMENT AMONG AMPUTEES WITH PROSTHESIS

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DECLARATION

I, **Ms. SARAH FATIMA DOGAR**, Registration No. **63-FSS/PHDPSY/F18** student of **PhD** in the subject of Psychology, session **2018 – 2025**, hereby declare that the matter printed in the thesis titled: **Effectiveness of Psychotherapeutic Intervention on Psychological Health and Adjustment among Amputees with Prosthesis** is my own work and has not been printed, published and submitted as research work, thesis or publication in any form in any University, Research Institute etc in Pakistan or abroad.

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Certified that the research work contained in this thesis titled**: Effectiveness of Psychotherapeutic Intervention on Psychological Health and Adjustment among Amputees with Prosthesis** has been carried out and completed by Ms. SARAH FATIMA DOGAR, Registration No. 63-FSS/PHDPSY/F18 under my supervision.

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Abstract

This comprehensive study endeavors to explore the efficacy of psychotherapeutic interventions in enhancing the psychological well-being and adjustment of individuals utilizing prosthetic limbs following amputation. Employing a rigorous pre-assessment and post-assessment design, the research unfolds across three distinct phases.

In Study 1, the focal point was the translation of the Trinity Amputation and Prosthesis Experience Scale Revised (TAPES-R) into Urdu, a meticulous process that involved employing the back translation method to seamlessly convert the scale from its original English format. A diverse cohort of prosthesis users, spanning the age range of 20 to 60 years, was engaged from various healthcare facilities. This phase unfolded in two crucial steps: firstly, cross-language validation, followed by the establishment of the psychometric properties of the translated scale.

Study 2, constituting the main research endeavor, revolved around the implementation of a meticulously crafted Psychotherapeutic Intervention Plan. Subsequent to the standardization of the scale, the TAPES-R (Gallagher et al. 2010), alongside the Depression, Anxiety, and Stress Scale DASS-21 (Lovibond & Lovibond, 1995), was meticulously administered to the carefully selected sample. This cohort consisted of 20 individuals, thoughtfully divided into two groups: a Control group comprising 10 participants and an Experimental group with an equal number. The Experimental group received the designated psychotherapeutic intervention, with a subsequent post-assessment phase aimed at quantifying the effects of psychotherapy on the participants.

Study 3 involved a follow-up assessment conducted approximately six weeks after the conclusion of the main study. Participants for this phase were randomly drawn from the Experimental group, their ages ranging from 20 to 60 years. Utilizing the Trinity Amputation and Prosthesis Experience Scale Revised (TAPES-RU) and the Depression, Anxiety, and Stress Scale

(DASS-21), this follow-up study sought to comprehensively evaluate the enduring impact of the psychotherapeutic intervention. The analytical framework for this study predominantly leveraged the statistical power of SPSS. The aim of the study was to assess how psychosocial and psychological adjustment are affected by lower limb amputation surgery. The study involved individuals who had undergone lower limb amputations. The results indicated that higher levels of anxiety symptoms and functioning during surgery were associated with poorer social adjustment to amputation and greater adjustment to constraints. Traumatic stress symptoms were also found to have a negative impact on overall and social adjustment. Additionally, perceived social support was identified as a mediator in the relationship between traumatic stress symptoms and adjustment to constraints.

Keywords: Amputation, Prosthesis, Adjustment, Depression, Anxiety, Stress

Chapter 1

Introduction

When humans are born, the majority of us are fully developed human beings. The connections that connect the mind and body are formed by nerves, muscle, and bone. Unfortunately, illness or bad luck can disrupt this mechanism on occasion. A major setback, such as amputation, can change many aspects of one's life. Amputation is the process of removing a limb or part of it by sectioning one or more bones, while disarticulation is a surgery through the joint surface (Mohammed & Shebl, 2014**).** Usually considered as a mutilating procedure, it should be understood by health professionals as well as patients, as a reconstruct or, since it is able to relieve pain and provide function improvement in relation to the maintenance of the compromised limb, when the procedure is properly indicated (Schnur & Meier, 2014**).** An individual's center of gravity, range of motion, and ability to perform daily tasks such as dressing, using the restroom, and taking a shower are all affected when a limb is amputated as a result of an accident, infection, or disease. Amputation is one of the most widespread disabilities which is defined as the surgical, natural, part, or whole removal of a limb or projecting, skin-covered body component. Patients with amputations include clinical people that are highly diverse in terms of the condition's severity, etiology, gender, age distribution, and degree of physical and mental impairment (Gallagher & Maclachlan, 2001).

Amputation refers to the surgical removal of an entire physical portion. A substantial source of impairment in daily life is frequently discovered to be traumatic amputation. Those who have suffered amputations, then, eventually deal with social, economic, and psychological problems. These folks could experience loneliness and low self-esteem. Whatever the cause of the amputation accidental, abrupt, progressive, or linked to a disease—it affects the victims' quality of life (De Godoy et al., 2002). Amputation has a significant impact on society as a

whole since losing a limb results in the loss of several skills. A stigmatizing emotion, low self-esteem, social isolation, worries about one's overall body image, and issues about restrictions are all linked to limb loss. Amputations can result from accidents, natural disasters, and illnesses. Losing a limb is a traumatic experience mentally, and between 21 and 35 percent of those who have lost an extremity experience depression (Williams et al., 2004). One of the first processes that is defined is amputation of a limb. The development of limb amputation surgery and the history of warfare are intertwined. For those who had lost limbs, prosthetic design and use increased after World War II (Hierton, 1980, Bowker & Pritham, 2004).

It has been discovered that physical treatment significantly improves mental wellness (Pezzin et al., 2013). Poor body image, emotional issues, and a worse quality of life are some other typical psychological traumas. Because it shows a significant role in the progress of psychiatric illnesses, pain perception also serves an important purpose for psychological treatment (Hoffman et al., 2007). When physical health is being regained, health-related quality of life (HRQOL), which encompasses how physical and mental health are evaluated throughout time, is viewed as an extra key component for the evaluation of mental health. Although including psychological services and interventions in the rehabilitation process for amputees has become a quality standard, there are simply not enough research papers on mental health available (Willrich et al., 2005), and little is known about mental health and HRQOL during physical rehabilitation after amputation (Zidarov et al., 2009).

Amputation

Articulation must be distinguished from "amputation," which is the term for cutting off the osseous portion of a limb. Historical texts list amputation as one of the earliest known medical procedures. Rehabilitation has gained importance as a result of medical care's primary focus on

the potential of amputation to speed healing. For a very long time, the main causes of amputation were diseases or infections, like those spread by animals or gangrenes during warfare. According to Kempker and Martin (2016), theories on sepsis and antisepsis have significantly improved surgery procedures, which have an effect on patient health and survival rates. The importance of surgery and rehabilitation in primary healthcare increased after the first and second world wars. The rehabilitation of amputees received attention once a standard amputation procedure was adopted.

In addition to assisting the patient in regaining mobility and healing open wounds, rehabilitation also involved delivering and maintaining prosthesis. In terms of prosthetics, modern techniques today enable patients to set up a mobility schedule that is almost typical. How effectively the prosthesis is utilized, however, depends on the patient's health. Since high-tech prosthesis may not be covered by insurance or public health services, they are very expensive and hence almost impossible to afford. Rehabilitation methods and amputation surgery are currently carried out in a routine manner. The prevalence of vascular illnesses, such as diabetes mellitus (DM) and peripheral artery occlusion disease (PAOD), which are growing increasingly widespread as a result of poor lifestyle decisions, is highest in Western countries (Fowkes et al., 2013).

Incidence And Prevalence Of Amputation

Estimating the worldwide occurrence of amputations presents a formidable challenge owing to the considerable disparities in amputation rates both among and within countries. (Holman, Young & Jeffcott, 2012). The Global Amputation Study, the largest global study of its kind, which has been going on for 12 years, employed a standardized methodology to determine how common lower limb amputation is in 10 different countries throughout the world. Despite controlling for age and gender distributions among individuals undergoing amputations, testing

centers discovered significant variations in the prevalence of lower limb amputations. In 2017, 57.7 million people were living with limb amputation due to traumatic causes worldwide. Leading traumatic causes of limb amputation were falls (36.2%), road injuries (15.7%), other transportation injuries (11.2%), and mechanical forces (10.4%). The highest number of prevalent traumatic amputations was in East Asia and South Asia followed by Western Europe, North Africa, and the Middle East, high-income North America and Eastern Europe. Based on these prevalence estimates, approximately 75,850 prosthetists are needed globally to treat people with traumatic amputations.

Morbidity And Mortality

Following a significant lower limb amputation, there looms a substantial threat of illness and mortality. Postoperative complications, encompassing cardiovascular ailments, pneumonia, and protracted wound healing, often attributed to stump infections, may necessitate a revision of the amputation site, relocating it to a more proximal position on the injured leg, as indicated by Aulivola et al. (2004). Moreover, a disquieting revelation emerges from the annals of medical research, revealing that individuals afflicted by diabetes are burdened with a twofold higher risk of heart failure and the need for additional amputations, when compared to their non-diabetic counterparts. This dark insight underscores the compelling evidence of augmented morbidity within the cohort of those enduring amputations precipitated by diabetes-related complications.

Current Trends In Amputation

An increase in the use of cutting-edge treatments has been linked to a decrease in the amputation rates among diabetics. The adjective cutting-edge often describes new advances in science and technology— a hospital might advertise its use of cutting-edge cancer treatments, for example. Art can be described as cutting-edge as well, if it uses innovative techniques or does

something completely new. Diabetes foot care programmes have proven to be quite successful in reducing need for amputation in people, suggesting that preventative healthcare and education for diabetics may also have had a substantial impact. The average age at which amputations are performed across all etiologies has increased as a result of these innovations and the typical population ageing.

Quality Of Life And Amputation

No matter whether vascular, traumatic, or orthopedic issues led to the amputation, the physical aspect of the body was the most involved independent cause. There is no doubt that the mutilating process affects these people's lives. Any severe bodily loss has a detrimental effect on a person's quality of life. Wald (2004) came to the conclusion that, given the multiple physical and psychological problems connected to occupational amputation, a comprehensive and all-encompassing rehabilitation approach is required. According to Singh's (2008) research, an individual's mobility and reintegration back into society are most likely to be impacted by their physical capabilities, general health, social environment, emotional state, and pain.

The ultimate goal of rehabilitation, according to Burger and Marincek (2007), is to help amputees become useful, independent members of society. The effects on the person and the adjustment process after limb amputation are incredibly complicated and dynamic processes that differ from person to person (Saradjian, Thompson & Datta, 2008). The emotional effects of physical injuries can be managed with medical care and rehabilitation, but they may last for many months, years, or perhaps the rest of the amputee's life. Another method of determining whether rehabilitation was successful is by a successful prosthetic limb fitting. One's independence and functional mobility both enhance when they use prosthesis. By improving functioning and improving one's self-image in a way that is acceptable from a cosmetic standpoint, prosthetics are

used (Saradjian, Thompson & Datta, 2008). The healing from an occupational amputation typically necessitates cognitive, emotional, and behavioural modifications (Wald, 2004).

Literature review

Many factors, including patient demographics such as age, gender, and educational level, have been studied in an attempt to reduce a person's psychological adjustment to losing a limb. Rehabilitating patients to their regular level of involvement and functioning is one of the key goals of treatment. Rehabilitating those who are now partially or completely handicapped includes retraining them and reeducating them (Kelly & Dowling, 2007) According to Horgan and MacLachlan (2004), depression has apparently been associated with less prosthesis use and decreased mobility in people with long-term amputations in the period immediately following their amputation. The process of getting used to prosthetics also highlighted how differently each person interacted with them (Saradjian, Thompson & Datta, 2008).

Causes of Amputation

Amputation Caused by Diabetes Mellitus

According to the American Diabetes Association (ADA) (2014), there are three different forms of Diabetes Mellitus (DM), including types 1, 2, and other particular types. (For instance, infections, endocrinopathies, or genetic flaws). The focus of the thesis is type 2 diabetes mellitus, which accounts for 90% of all cases of the condition and is the primary reason for amputation (Chen et al., 2012). Similar to DM type 1, hereditary transmission is significant in DM type 2. There is a 40% probability that a child will inherit DM if one parent has the condition. There is 80% likelihood that a child will inherit type 2 diabetes if both parents have it (Hien et al., 2014).

Amputation may occur as a result of diabetes's macrovascular complications, which may include peripheral vascular issues and morbidity. Diabetes is frequently caused by a combination of unfavourable lifestyle factors and a genetic component (Martin-Timon et al. 2014). A poor lifestyle is caused by a high-calorie or insufficient food, little or no exercise, or substance misuse. Diabetes mellitus is linked to obesity, cardiovascular risk factors such as hypertension, and abnormalities in lipoprotein metabolism. (Martin-Timon et al., 2014).

PAOD (Peripheral Arterial Occlusion Disease)

Atherosclerotic artery constriction is the primary cause of arterial occlusion, a systemic disease of the arteries. The discomfort brought on by limited blood flow is referred to as intermittent claudication (Criqui & Aboyans, 2015). There are many times more chances of having peripheral arterial occlusion disease if there are multiple risk factors for cardiovascular disease. Peripheral artery disease affects over eight million Americans and is associated with an increased risk of mortality, cardiovascular disease, functional limitation, and limb loss. In its most severe form, critical limb ischemia, patients are often treated with lower extremity (LE) amputation (LEA) (Fowkes et al., 2013). Elastic arteries, including those of the muscular type, are affected. The Ankle-Brachial Index (ABI) was created by measuring blood pressure at the ankle. ABI values that are excessively low are a sign of leg atherosclerosis (Criqui & Aboyans, 2015). Hypertonia, nicotine use, diabetes, inactivity, and obesity are the main risk factors for a PAOD (Criqui & Aboyans, 2015). Age, gender, and stress are other risk factors (Danese et al., 2005).

Sepsis

According to Stevenson et al., (2014), sepsis, or an infection, still poses a serious threat to public health in both developed and developing nations, where it is associated with a high fatality

rate of 29%. Although there is disagreement about how to define sepsis, it can be summed up as a systemic inflammatory reaction (Baudouin, 2009). Although the underlying cause of sepsis is unclear, hospitalised patients have shown a rise in sepsis. Sepsis can lead to amputation in a number of ways. One is by causing blood clots to form in the blood vessels. These blood clots can block the blood supply to the limbs, leading to tissue death and gangrene. Sepsis can also lead to amputation by causing damage to the nerves that control the limbs. (Vincent et al., 2006). Elderly adults with chronic illnesses who have received invasive treatments are often affected (Jarman et al., 2004). Sepsis and diabetic Charcot feet are more common in diabetic patients. The patient's life is frequently saved only as a last resort through surgery and/or amputation.

Accident/ Trauma

There has been a 3.9% decrease in non-fatal injuries as a result of better safety measures like airbags, seat belts, or occupational safety training (Raina & co, 2016). With the exception of the military, where traumatic amputation plays a large role, accidents thus only account for a small part of amputation causes (Staruch et al., 2016). Accidents frequently occur into the primary and secondary amputation cause categories: In an initial amputation, the limb has already been amputated. Rarely, and only when the surgeon acts fast, are replantation possible.

Secondary amputations take longer because there may be several weeks, months, or even years between the damage and the amputation procedure. Depending on the reason for their amputation, trauma amputee patients tend to be more male and younger than other amputee groups (Varma et al., 2014). Because prosthetics can be utilized at an earlier age, trauma amputees may find it simpler to reintegrate into society. On the other hand, being younger is also linked to having worse mental health and lower HRQOL (Melcer et al., 2013).

Bone tumors

Bone tumors are categorized by the ICD-10 as benign (C0, C41, or C79.5) or malignant (C0, C79.5) (D16, D48). Primary bone tumors and secondary bone tumors are the two main kinds of bone tumors. Secondary bone malignancies are metastases of tumors that were initially found in other regions of the body, whereas primary bone tumors frequently have an indirect impact on bone tissue. Primary malignant bone tumors account for roughly 6% of all cancers in adolescents and young adults in the United States. A limb amputation might be the only way to cure primary bone cancer for some people. (Varma et al., 2014 & Sarcoma, 2017)

Post-amputation Pain

Phantom limb pain (PLP)

PLP has undergone a great deal of research (Bosmans et al., 2010; Casale et al., 2009). It is categorized by the ICD-10 as neuropathic pain, which must be distinguished from the perception of a missing limb, and is known as pain in the absent limb. Phantom experiences are categorized as unpleasant or not painful in the literature (Flor, 2002). An examination of the research literature on PLP reveals that there are wide variations in the proportions of patients reporting PLP. 50–80% of patients report having PLP, which is a common range. Studies have shown that having a lower limb amputated, being a man, how long it has been after the amputation and how recently the amputation occurred are protective variables to prevent PLP (Bosmans et al., 2010). The long-term outcome results, though, continue to be inconsistent. Melzack's (1989) neural matrix theory predominated in prior decades, despite the fact that different theories concerning the evolution of PLP have been produced through research. But over the past 10 years, Flor's (2008) cortical

reorganization theory has received the greatest support, claiming that amputation is linked to neuro-plastic alterations in the sensory and motor cortices.

Stump pain

A localized skin alteration, such as an infection of the skin, bone, or tissue, can cause pain to be felt just adjacent to the stump, which is what is referred to as "stump pain." Other reasons of this type of pain include scars, neuromas, neuropathic pain, and a prosthesis that is not fitted properly. The two distinct types of stump pain are acute and chronic. About 50% of patients feel pain in their stumps after an amputation (Kooijman et al., 2000).

Back pain

Once an amputee reaches a particular level of health, using crutches while walking is an essential part of therapy. It's possible that amputees have back issues as a consequence of the disability (Morgenroth et al., 2010). Back problems are hence considered to be a drawback of an amputation. 62.3% of the patients examined by Ephraim et al., (2005) after an amputation reported back pain. The author of the thesis oversaw an internal clinical evaluation at the Vienna General Hospital that looked at retrospective data on more than 400 patients' post-amputation pain. 66% of the factors after amputation were related to pain, which included back discomfort, stump pain, and phantom limb pain. The effects of pain phenomena on coping mechanisms, depressive symptoms, substance use, and financial situations are significant. It was discovered that a higher PLP was significantly positively connected with a higher level of depressive symptoms.

Relevant Psychological Disorders Caused after Amputation

Psychosocial treatment is necessary for one-third of the patients admitted to inpatient rehabilitation facilities (Bengel et al., 2013). Numerous psychological conditions that either emerged as a result of the 20 patients' physical suffering or that were pre-existing diseases must be treated by psychologists working in the orthopedic rehabilitation context. The most common and significant disorders listed in the ICD-10 are described.

Anxiety Disorders

Anxiety and fear symptoms are the most common ones associated with anxiety disorders. Worrying about the future and reacting horrified to the present are characteristics of anxiety. Fear is one emotion that can take the form of physical symptoms. Phobias, panic episodes, generalized anxiety disorder, social anxiety disorder, and other anxiety phenomena are all examples of anxiety disorders. Drug usage or attempts at drug withdrawal can cause anxiety disorders, but they can also be passed down from generation to generation. Anxiety and other mental illnesses frequently co-occur, especially when eating disorders, personality disorders, bipolar disorders, and depression are present. The term "anxiety" is used to describe the four different experience kinds of somatic symptoms, physical tension, and mental worry. Anxiety can be treated with behavioral therapy, medication, and lifestyle modifications (Cuijpers et al., 2014). A doctor will only recommend medication if all other therapy options have failed to produce the desired effects. Women are more likely than men to have anxiety disorders (2:1 ratio).

Body image anxiety and social functioning

The scientific community has devoted considerable attention to studying the occurrence of body image concerns that lead to disabilities, alongside the profound psychological distress

associated with them. This dual focus reflects the recognition of the multifaceted impact such issues can have on individuals' lives. One frequent misconception is that because of the nature of amputation, people must reconcile their pre- and post-amputation self-images as well as their imagined or "ideal" selves (Breakey, 1997). Additionally, adjustments to their self-image are required due to changes in both their physical capabilities and appearance (Rybarczyk et al., 1995).

The significance of body image concerns in the psychological transition to amputation may be partially explained by the impact of perceived social stigma and responses from others. This is one feature of body image concern that stands out in particular. Numerous quantitative researches have shown how societal stigma, both real and imagined, influences how people cope with amputation and how they develop body image issues. Indeed, it has been proposed that the apprehensions related to how one might be perceived by others and their subsequent reactions play a substantial role in shaping the development of a new self-concept following an amputation. This underscores the intricate interplay between one's self-perception and the external perceptions and responses of others in the intricate process of self-identity reconstruction post-amputation. Rybarczyk & Behel, 2008).

More recently, a quantitative study revealed a positive correlation between difficulties with psychosocial adjustment and affective discomfort and public but not private self-consciousness (Atherton & Robertson, 2006). This demonstrates that during the adjustment process, the individual's expectations and actual responses to the amputation were more significant than the individual's own perception of themselves. Even some who assert that they are content with their appearance have been seen covering their amputations in public because they fear that it may offend or worry others (Saradjian et al., 2008).

However, not all studies discovered that individuals desired to conceal or cover up their amputations. Attempts to "conceal" the amputation were frequently deemed superfluous, and instead, people felt obliged to aggressively showcase their prosthetic device, usually in complex ways, by customizing and adorning their device in specific ways. (Murray, 2009).

Murray (2009) asserts that the 16 who liked to flaunt their equipment frequently did so because failing to do so would impair their capacity to complete their daily activities. These were folks who preferred usefulness over aesthetics. This study emphasizes the importance of a person's satisfaction with their own physical appearance and the impact they believe it has on how other people view them when taken as a whole.

While the research areas of anxiety, depression, and body image issues in individuals with amputations may seem more apparent, there exists a profound and intricate connection between these aspects and the way they are perceived by the public. Saradjian and colleagues (2008) have astutely noted that a person's social experiences become deeply entwined with the alterations in their self-image brought about by amputation. In essence, how individuals perceive themselves in social contexts holds equal significance in their adjustment process as their personal self-perception.

The process of coping with the loss of a body part often triggers a range of emotional reactions, including shock, anger, and anxiety, as elucidated by Rybarczyk et al. (2004). There is often a struggle to reconcile their former self-image with their new physical appearance.

However, as individuals gradually come to terms with their altered appearance, their concerns about how others perceive and react to their physical differences tend to subside. Numerous studies underscore the importance of appearing "normal," especially when utilizing a

prosthetic device. This normalcy not only helps individuals in concealing their disability from others but also allows them to reclaim a sense of normalcy in their self-perception.

When disabilities and physical differences are conspicuously evident in social settings, whether among strangers or acquaintances, it is frequently observed that others may find it challenging to respond appropriately. Comments perceived as patronizing, awkward, or embarrassing, often accompanied by staring or a narrow focus on the affected abilities, can compound the discomfort experienced by individuals with amputations. Consequently, the desire to conceal their amputation often arises from a genuine fear of such reactions, as corroborated by Hamill et al. (2010) and Sjödahl et al. (2004).

In many instances, individuals using prosthetic devices are afforded the opportunity to conceal their physical differences, thereby mitigating these uncomfortable feelings and potential negative social consequences. The ability to hide a portion of themselves is pivotal as it allows them a temporary respite from the challenges associated with everyday social interactions. It permits them to selectively share personal information about themselves and exert some control over how others perceive them, as highlighted by Saradjian et al. (2008), Gallagher and MacLachlan (2001), and Murray (2009).

The overarching narrative here establishes a profound connection between the psychological ramifications of amputation and the complex interplay with body image issues. The pivotal role of prosthetic devices in helping individuals maintain a self-image aligned with their personal identity, while also navigating social acceptance, underscores the intricate nature of this experience.

Affective distress and reaction to amputation

Affective distress has received a lot of attention in the substantial research on the psychological impacts of amputation. Studies help us to start putting together a view of what people feel when they come across this specific set of conditions. There seems to be sufficient of indication to support the notion that post-amputation populations frequently experience increases in anxiety and depression (Atherton & Robertson, 2006)

Some claim that the stated rates of anxiety and depression in this group are not accurate due to methodological issues with the cross-sectional designs used in these studies and variations in measures or classification criteria when using the same measure (Horgan & MacLachlan, 2004). In a recent longitudinal research that assessed the existence of these symptoms, grief and anxiety symptoms were reported to have risen at a second time point, 2 years following discharge, although appearing to have decreased soon after amputation. (Singh et al., 2009). The increased reporting at follow-up raises issues about the various reasons why negative effects may have subsided following in-patient therapy. The concepts that there is less assistance at home than in a hospital setting, that self-confidence is weaker, and that continual professional physical and psychological care is required may have some theoretical consequences. (Coffey et al., 2009; Desmond & MacLachlan, 2006; Singh et al., 2009).

Depression

However, the theoretical underpinnings, while informative, can only take us so far in truly comprehending the profound experiences of individuals grappling with limb loss. In the realm of quantitative research, depression and anxiety have indeed been linked to various critical outcomes, including practical and societal limitations, overall adjustment, social integration, self-perceptions

related to appearance, and restrictions in public engagement or mobility (Atherton & Robertson, 2006; Coffey et al., 2009; Williamson et al., 1994). Yet, despite earnest attempts to quantify and analyze these associations, grasping the intricacies of the limb loss experience necessitates delving into the unique significance of these emotional and behavioral responses.

Qualitative research, offering a more nuanced perspective, has unveiled common emotional trends among individuals coping with amputation. These thematic threads include grief, simmering anger, pervasive discontent, profound shock, self-imposed blame, poignant isolation, and an unsettling sense of vulnerability. These emotional facets coalesce with the previously documented depressive and anxious symptoms, as observed in prior studies (Liu et al., 2010; Rybarczyk et al., 2004; Senra et al., 2012; Sjödahl et al., 2004). Notably, depressive symptoms have been intimately linked to feelings of solitude and a palpable reliance on the support of friends and family (Senra et al., 2012). In accordance with the seminal work of Rybarczyk and colleagues (1992), the most influential determinants of depression ratings encompassed perceived health, the scaffolding of social support, and the uneasy specter of social discomfort.

Further investigations have underscored the profound relevance of body image, a facet transcending age, time elapsed since amputation, or the specific site of limb loss. It was found to be a formidable predictor, independently, for depression, quality of life, and the adjustment to prosthetics (Rybarczyk et al., 1995). Moreover, these studies have illuminated the significant impact of an individual's perception of social stigma, which looms large in the realm of depression and emotional well-being.

In essence, while quantitative research unveils important associations, it is through the lens of qualitative exploration that we gain deeper insight into the rich tapestry of emotions and

experiences that shape the lives of those who have undergone limb loss. This nuanced understanding is essential in guiding more empathetic and effective interventions aimed at improving the well-being and adjustment of individuals navigating the challenging terrain of limb loss.

Substance dependence

Drug dependence, substance misuse, and substance intoxication are differentiated in ICD-10. The excessive use of psychoactive chemicals that can be damaging to one's health is referred to as substance abuse. This harm could be psychological or physical, such as hepatitis contracted through the use of infected needles or despair brought on by alcohol misuse. Dependence is characterized by improper use of psychoactive substances and the impression of their abuse (Dilling & Freyberger, 2011). Substance abuse can be related to a single substance, a group of compounds, or a large number of substances. Depending on whether physical symptoms appear, it can be determined. Present abstinence and numerous phases of remission, such as involvement in a managed substitution programmer, are taken into consideration for the classification. This aids in more accurate differentiation of the dependent path. While the direct link between drug abuse and limb loss may not be widely recognized, studies have shown a clear association between the two. Drug abuse can lead to various health complications, including infections, vascular diseases, and traumatic injuries, all of which can ultimately result in limb loss.

Drug-related amputation, also known as drug-induced limb necrosis, is a serious consequence of long-term drug abuse. This condition occurs when the blood vessels supplying the limbs become damaged or blocked, leading to tissue death and the need for amputation.

Somatoform disorders

Fibromyalgia and somatic symptom disorders are the most prevalent somatic disorders seen in orthopedic rehabilitation. Fibromyalgia is a condition marked by persistent, widespread discomfort and a painful reaction to intense pressure. Another symptom that could make it difficult to perform everyday tasks is fatigue. Joint stiffness and disturbed sleep are two more frequent concerns.

Widespread pain is the hallmark symptom of fibromyalgia, which is thought to be caused by neuro-chemical imbalances. Somatic symptom disorder, formerly known as somatoform condition, is characterized by physically debilitating problems for which a proper explanation cannot be determined through a medical diagnostic technique (Lahmann et al., 2010). This either indicates that no organic cause has been identified or that the symptoms are not as severe as would be anticipated in a diagnosis of organic origin (Martin & Rief, 2006).

Individuals regularly have somatoform problems, which frequently manifest as a transient headache, dizziness, palpitations, hypertension, or perspiration. Up to 70% of people report having some form of general discomfort, making it one of the most prevalent complaints (Lahmann et al., 2010). Patients with somatoform disorders may have a variety of symptoms, including concerns about their bodies and disease beliefs, neurological dysfunction, localized or widespread pain, organ dysfunction, and abnormalities in their vital signs. Avoiding exercise, misusing prescription drugs, and using medical services more frequently, such as switching doctors, are examples of common negative habits (Martin & Rief, 2006).

Dementia

Elderly patients, including those with amputees and other orthopaedic conditions, make up the bulk of the patient population, thus illnesses like Alzheimer's disease and vascular dementia must also be discussed in this context. The ICD-10 defines dementia as a broad spectrum of brain illnesses that impact memory and thought processes. Daily tasks are typically also impacted. Language difficulties, mental health problems, and a decline in motivation are some more prevalent signs. A person's abnormal mental functioning and a more pronounced deterioration than one might anticipate with normal ageing must be evidence for a diagnosis.

Alzheimer's disease is a widespread type of dementia that accounts for 50% to 70% of all cases of the condition (Reitz & Mayeux, 2014). Lewy body dementia (15%) and vascular dementia (25%) are two more prevalent forms. The diagnosis frequently makes use of the patient's medical history, cognitive tests, and medical imaging to rule out any additional probable reasons. One common cognitive test is the brief mental state examination. Smoking, diabetes, high blood pressure, and obesity reduce the risk of dementia, preserving and controlling one's identity the significance of managing social and personal components of identity following amputation has been emphasized in numerous research. Integration of pre-amputation identities and post-amputation experiences may be challenging for some persons. Studies have argued that it was crucial to view people as unique individuals as opposed to categorizing them based on their handicap. (Hamill et al., 2010; Murray, 2009; Saradjian et al., 2008; Sjödahl et al., 2004)

People often need to reexamine their own previously held assumptions about ability and handicap in order to renegotiate the logic of individual and public identity. In order to maintain a more positive view of one, people usually need to reinterpret their earlier beliefs about disability.

Aspects of rehabilitation that are directly tied to a person's disability may be rejected, such as relocating into an accessible cottage.. According to one theory, the societal effect of amputation on personality is caused by how other people see the individual in a social context rather than the amputation itself. This identification of the "handicapped" results from the amputation (Hamill et al., 2010).

The emphasis on practical equality may help to explain how people view their social and personal identities after amputation. Despite their contention that this aspect is currently understudied, Horgan and MacLachlan (2004) highlight functional capacity as a potentially critical feature in the renegotiation of self and adjustment following amputation. Participation in an activity may be a crucial component in this scenario. Indeed, multiple quantitative studies have shed light on a compelling connection between sustained physical activity and the reduction of body image anxiety among individuals who have undergone amputation (Tatar, 2010; Wetterhahn, Hanson, & Levy, 2002).

However, the intricate mechanism underpinning this phenomenon remains somewhat elusive. Do these individuals find themselves imbued with greater energy because they have cultivated a more harmonious relationship with their bodies? Or is it that their enhanced vitality emanates from the fulfillment of their active roles and responsibilities? While these studies have diligently explored the virtues of physical exercise, particularly within the context of sports, it is equally, if not more, imperative to acknowledge the profound implications of daily life activities and their constraints for the majority of amputees. (Asano et al., 2008)

Research has compellingly illustrated that constraints on daily activities post-amputation are intricately linked to a decrement in overall quality of life and social interaction, alongside a

heightened prevalence of depressive symptoms. Such activities encompass the realm of personal care, household duties, and social engagement (Asano et al., 2008; Williamson et al., 1994).

Furthermore, the nexus between functional limitations, social restrictions, and a sense of dissatisfaction with prosthetic functionality has been corroborated in empirical investigations. These factors have been associated with emotional distress symptoms, heightened body image anxiety, and suboptimal psychosocial adjustment (Coffey et al., 2009). The resounding message from this body of research is that the continuation of daily activities and social engagement holds profound significance for individuals navigating the unique challenges posed by limb loss.

It is imperative to underscore that the rehabilitation components crucial for individuals in this particular circumstance extend far beyond the realm of physical activity. Continuing with daily routines and participating in social interactions are cornerstones of a holistic recovery process. Notably, both gainful employment and consistent prosthesis usage have emerged as positive indicators of psychosocial adjustment, further underscoring the multifaceted nature of rehabilitation in the context of amputation (Sinha, van den Heuvel & Arokiasamy, 2014).

In summary, the empirical evidence presented here underscores the profound interplay between physical activity, daily life engagement, and psychosocial well-being for individuals navigating the challenges of amputation. It reinforces the holistic approach required to ensure the optimal adjustment and quality of life for these individuals.

Prosthesis

Extensive research underscores the pivotal role that the selection of prosthetic goals and the adjustment to life with an amputation play in fulfilling societal obligations, whether they are personal or professional in nature (Murray, 2009; Rybarczyk et al., 2004; Saradjian et al., 2008). This functional competence, which empowers individuals to carry out personally significant social responsibilities, closely parallels the self-efficacy and independence afforded by the prosthetic device itself. Those who perceive themselves as capable of maintaining a degree of independence tend to exhibit higher self-esteem and reduced dependence on others to accomplish their objectives, ultimately resulting in superior self-assessed amputation adjustment (Murray, 2009; Saradjian et al., 2008).

Furthermore, research indicates that extended usage of prosthetic limbs, coupled with fewer challenges related to body image, correlates with heightened satisfaction with the functionality of the prosthetic device (Murray & Fox, 2002). Consequently, the execution of social tasks frequently hinges on the efficacy of the prosthetic limb. This underscores the profound importance of attaining a significant level of functional capability and its intrinsic relationship with independence and social responsibilities during the adaptation to amputation. It is noteworthy that each individual's unique needs exert a considerable influence on the rehabilitation journey.

However, it is imperative to acknowledge that depending on the nature of the amputation and the technical limitations of the prosthetic device, a person's ideal functional and social aspirations may not always be attainable. In such scenarios, the crucial and beneficial adaptation of duties or expectations becomes paramount in the rehabilitation process (Hamill et al., 2010; Saradjian et al., 2008).

As articulated by Hamill and colleagues (2010), the establishment and achievement of realistic and acceptable goals can be instrumental in fostering happiness and facilitating the regaining of independence and control. A study conducted six months post-amputation revealed that individuals who accorded great importance to their life goals and demonstrated adaptability in recalibrating those goals in response to circumstances, a phenomenon referred to as goal disengagement exhibited lower levels of depressive symptoms and greater overall and social adjustment (Coffey et al., 2009).

In essence, the synthesis of these research findings underscores the intricate interplay between prosthetic goals, functional autonomy, and social responsibilities in the context of amputation. It accentuates the importance of not only setting achievable goals but also flexibly adapting them to enhance emotional well-being, independence, and societal integration for individuals embarking on the path of post-amputation rehabilitation.

It was discovered that throughout the same time period, the interruption of goal achievement predicted both higher levels of melancholy and worse levels of adjustment. They also discovered that the life goals thought to be most helped by amputation were interpersonal relations, freedom, and subjective well-being. On the other hand, the goals that were thought to be greatest affected by disability had to do with physical restrictions and disturbances of everyday activities. Similar to the foregoing, it has been asserted that the capacity to modify one's life objectives in light of the current situation shows a commitment to adjusting to amputation with a decreased stress on physical features and an increased importance of one's core values (Rybarczyk et al., 1995).

People's ability to function and their capacity to fulfil social obligations appear to have a significant impact on how they perceive life after amputation. One of the various coping mechanisms that have been looked at in this context is the capacity for people to alter their goals as necessary. In the near future, we'll talk about more similar tactics so that you may better understand this experience. We'll also talk about the importance of social support in particular. Assistance from others and coping mechanisms Coping mechanisms and social support, which are viewed as both independent and interdependent components, have also been studied in relation to adjustment. Numerous techniques have been employed to investigate how coping mechanisms and social support affect the outcomes of rehabilitation. (Williams et al., 2004).

Social support emerges as a significant factor shaping the subjective quality of life in the aftermath of an amputation, as highlighted by Asano and colleagues (2008). In a quest to unravel the intricate dynamics of long-term amputation adjustment, Hanley and his team (2004) embarked on a comprehensive exploration of the roles played by social support and coping strategies. Their findings unearthed intriguing associations: social support and the tendency to catastrophize, which involves exaggerating pain and other aspects of one's situation, were correlated with adjustments in opposing directions. Specifically, catastrophizing was linked to increased adjustment measures, whereas solicitous support from close relationships correlated with decreased adjustment.

To elucidate the enigmatic aspect of these findings, the authors put forth an intriguing hypothesis. They suggest that individuals who leaned on catastrophizing as a coping mechanism might have exhibited greater potential for enhancement compared to those who were already proficient in employing positive coping tactics. While avoidant coping strategies may have held some utility during the initial phases of rehabilitation, it has been unequivocally established that they are injurious to both physical and psychological well-being in the long run.

Moreover, an intriguing discovery emerged: individuals characterized by low social support-seeking tendencies coupled with high avoidance behaviors exhibited greater levels of adjustment than their counterparts with low avoidance tendencies and high social support-seeking behaviors (Gallagher & MacLachlan, 1999). This seemingly paradoxical outcome prompts a thought-provoking interpretation. The authors posit that those heavily dependent on others for social support may fail to develop the skills needed for self-sufficiency, which could be maladaptive even in the absence of avoidance tactics.

In essence, these findings underscore the multifaceted interplay between social support, coping strategies, and long-term amputation adjustment. They challenge us to consider the intricate dynamics that govern an individual's response to amputation and the subsequent trajectory of their adjustment, shedding light on the importance of fostering adaptive coping mechanisms while preserving a healthy balance between self-reliance and the nurturing embrace of social support networks.

Avoidance was revealed to be a significant cause to psychological discomfort and in sufficient psychosocial rehabilitation following amputation in a research on coping mechanisms (Desmond, 2007). These studies show the importance of social support, the dangers of its absence or over-reliance, and the impact of a person's reaction and coping skills on their capacity to adjust following amputation. Looking at the historical backdrop of various coping techniques and their significance to the individual may help one better understand this experience. Studies unambiguously show that social comparison is one of people's primary coping techniques. (Desmond, 2007).

Numerous studies have shown that people commonly change their sense of outlook in order to accept their position in a more favorable light. Furthermore, they regularly compare themselves negatively to others, especially those they perceive to be under more difficult situations. The need of strong social support, particularly from family and friends, is also emphasized. After amputation, the need to be recognized as the same person, as well as challenges with psychological support, empathy, and practical help, are typical. (Hamill et al., 2010; Saradjian et al., 2008; Senra et al., 2012).

Rehabilitation

The process of rehabilitation is significantly bolstered by the invaluable peer support shared among individuals who have undergone limb loss together. This unique camaraderie offers a depth of understanding and assistance that often surpasses what one's existing social network can provide. However, it is crucial to acknowledge that there are drawbacks associated with support that may inadvertently hinder progress. Specifically, these drawbacks pertain to well-intentioned yet overly concerned family members whose well-meaning actions may inadvertently impose constraints or excessive solicitude upon the individual, potentially impeding their journey of healing and recovery (Hamill et al., 2010)

Dunn (1994) succinctly encapsulates the body of research surrounding the cultivation of positive meaning and beliefs in the aftermath of a traumatic life event, with a particular focus on instances of acquired disability. Personal meaning is intricately entwined with the affirmative evaluations that individuals often construct to comprehend their own circumstances. This process often involves endeavors to fathom the reasons behind certain events and, more frequently than not, discovering a "silver lining" within an otherwise adverse narrative.

In coping with a challenging situation, individuals may engage in a cognitive process of rationalization, wherein they craft personally resonant interpretations of themselves and their surroundings. The adoption of such constructive interpretations is recognized as a protective and adaptive mechanism, rather than one that undermines or belittles the situation itself. These strategies endow these individuals with valuable coping mechanisms, rendering them more advantageous than detrimental, as elucidated by Thompson (1985).

Dunn (1996) conducted an empirical investigation to see how these tactics affected people's post-amputation adjustments. Finding significance in one's situation, retaining hope, and feeling in control of one's impairment were all linked to lower levels of depression, according to the findings. Those who reported higher levels of optimism and a sense of control had better self-esteem. The recognition of negative effects and the reevaluation or repositioning of life following amputation was the two most common subcategories of positive meaning.

Gallagher and MacLachlan, (2000) developed the idea that there is a need to concentrate on the possible effects of positive meaning following amputation. According to their findings, individuals who applied positive meaning after amputation had greater levels of physical competence and general health, lower levels of reported activity limitation, and higher levels of adjustment to amputation when compared to those who did not. A more recent study adds to the body of data supporting the influence of positive outlooks on life after amputation by finding a link between good emotions and better levels of social support and stronger levels of overall adjustment. (Unwin, Kacperek, & Clarke, 2009).

Qualitative research on individual experiences has further demonstrated the significance of maintaining a positive outlook after an amputation. The importance of having a positive view on

life and taking charge of changes and life in general was emphasized by this person. It depends on what you choose to accomplish with a disability. Just select what feels right for you (Saradjian et al., 2008). Similar conclusions were supported by the fact that respondents' lives improved after intentionally choosing to adopt a more positive outlook. Amputation survivors appear to benefit from coping skills and social support during their rehabilitation (Liu et al., 2010).

It is crucial to consider the nature of both of these elements in order to ensure that the influence on the person is beneficial. Helping those who are considering obtaining an amputation requires an understanding of the nature of these strategies and how they might be implemented into rehabilitation. There are numerous potential implications for the healing process in the psychological components of these results. To ascertain how these features may be included into therapeutic practice, it is necessary to study the experience of amputation from inside this process.

In their research of the shared and varied perspectives of patients and practitioners focused on the various perspectives on patients' awareness of the disease process. Despite being aware of this gap, practitioners appear to be criticizing patients for their lack of knowledge rather than acknowledging their own responsibility in assisting patients through their own communication. Similar to this, discussions of sexuality and intimacy after cancer emphasize inadequate communication and a lack of reflexive practice (Hordern & Street, 2007).

It has been shown that healthcare professionals regularly make judgments about patients' experiences based on assumptions and make little to no attempt to learn more by speaking with patients. Professionals are aware that having these conversations leaves them unprepared or personally uncomfortable, which makes their interaction with the patient less than fruitful along with these suppositions (Hordern & Street, 2007).

Both parties express their displeasure with the collaboration, the procedure, and the results. Due to the lack of reflective practices, it is also noticed that applying one's own personal priorities or preconceptions during the clinical process may cause issues. Additionally, it is stressed that the inadequacies in the system are at least somewhat to blame for the challenges that health professionals have in resolving these problems. According to studies, the goals of these two groups differ because they lack training and an understanding of time and resource constraints (Hordern & Street, 2007; Ononeze et al., 2006; Pun et al., 2009). It is simple to apply this understanding of the challenges faced and the requirement for a more encouraging and inclusive patient-physician contact to different healthcare settings.

Pun and colleagues (2009) arise to the decision that, despite the chance for medical professionals to improve patient comprehension and encourage successful self-care, these efforts are frequently thwarted by institutional barriers and a difference in how seriously patients and practitioners value particular factors. This is based on an in-depth examination of the literature describing the type 2 diabetes self-care hurdles that patients and medical professionals have encountered. It is important to emphasize the importance of cooperation and communication in promoting successful collaboration and successful results. The most significant gaps tend to be between patients' and healthcare professionals' concerns about particular, psychological barriers that affect them more directly. These studies highlight the differences between patients' and professionals' perspectives on the same problem and the potential implications for the therapeutic partnership and procedure. They are conscious that concerns with communication, patient engagement, and practitioner influence must be addressed in order to encourage and support a more collaborative cooperation. These findings have the potential to be extended to a variety of healthcare situations, and the realization that dealing with such ambiguous meanings when utilized

in connection to health-related events provides a chance to address these challenges in the prosthetic rehabilitation process gives an opportunity to explore these issues in the prosthetic rehabilitation process. There have been few studies comparing patient and practitioner opinions on numerous amputation and prosthesis-related subjects, particularly when it comes to the unique experience of limb loss.

The value of personal factors seems to be underappreciated by service providers. Physical outcomes and mobility are discussed as "successful outcomes" for service providers rather than being dependent on the user's stated goals while taking into account the unique qualities of each user. This research focused on the technical components of prosthetic provision in addition to addressing the frequently ignored relationship between the psychological and physical implications of wearing prosthesis for the wearer and the possible effects this may have on patient experience. Divergent expectations and experiences may have a negative effect on patient satisfaction, according to a number of researches. These conversations are examined to determine what part the relationship between the patient and prosthetics may have played in forming these perceptions (Liu et al., 2010; Nielsen, 1991; Pezzin et al., 2004; Sjödahl et al., 2004). It is necessary to look into the perspectives of the patient, the prostitute, and additional medical professionals. Particularly, patients would value increased patient involvement and an explanation of the prosthetic's role, according to Nielsen (1991).

Patients claim that they are unable to make decisions because they are missing the knowledge they need (Liu et al., 2010; Sjödahl et al., 2004). As a result, the medical team is given more authority. As a result, even though they would prefer to work together to plan their own treatment, coordinate their own rehabilitation, and make care decisions, patients are forced to have "blind confidence" in the professional. Pezzin and colleagues (2004) found that although the

majority of their sizable samples were happy with their prosthetic devices, they had less favorable opinions about their prosthetics. Although the prosthetic's' technical abilities were praised, fewer positive remarks were made about their interpersonal abilities and care for the client's welfare. Communication skills in certain folks were reportedly weak (assessed in terms of questions regarding time spent with the patient, discussion of pertinent problems, and quality of explanations). It would be helpful to conduct more research on how patients' perceptions of prosthetic affect their particular experiences with limb loss and prosthesis use. In a different study, patients' satisfaction with their care was compared to their expectations for it (Van Der Linde et al., 2007).

This study found a gap between what patients expected from the clinical team and what they really received when it came to information exchange and the outcomes of using a prosthesis. Schaffalitzky and colleagues' (2009) results that patient and prosthetic staff priorities are out of sync and that there is a perceived lack of user participation in prosthetics decision-making support this conclusion. This study emphasizes the significance of considering patients as "consumers," whose wants and preferences should guide the prescription process, rather than as passive users of a prosthetic device. This argument emphasizes the importance of more research into patient and practitioner experiences in order to understand the origins and nature of these conflicting opinions in an area that is still under inquiry.

Murray (2013) investigated a number of patient-prosthetist comprehension and communication issues. The examination of online discussion threads revealed numerous patient-related problems. Patients' expectations for their and the prosthetic's participation in the rehabilitation process seem to vary widely. In other situations, the prosthetist plays a passive role while acting as the expert, especially in the early stages of recovery. The patient may find it

difficult to think that the prosthetist can fully understand their concerns given that the prosthetist has no personal experience with limb loss or using prosthesis.

Patients frequently express worries about feeling coerced into participating in the process, despite the fact that they frequently lack the knowledge or the appropriate relationship with the prosthetist to do so. Patients commonly thought that a prosthetist refusal to work with them demonstrated that they did not appreciate their opinions as much as they did their own as a "professional." According to the patients' accounts of their experiences, there was a discrepancy between what they thought of the actual service offered and what they expected of the prosthetist talents and the manner this should be done. Patients believe that prostitutes occasionally are unable to recognize their needs as unique individuals. Participants talk about how to handle challenging circumstances or dissatisfaction by maintaining an open channel of communication with the prosthetist. Although there are more reports of bad relationships, this isn't always reflected in experience.

The patient's perspective on the information exchange with the prosthetist is the main emphasis of Murray's (2013) research. The difficulties created by the two parties' divergent perceptions or expectations in this instance suggest a potential weakness in the patient-centered paradigm and, in some cases, may even be a factor in the persistence of patients' problems. Murray (2013) gives the perspective of a patient on these issues.

Positive Psychological and Social Consequences of Amputation

The bulk of study on how people manage with amputation has been negative, with the lack of mental health difficulties interpreted as a sign of acceptable adjustment (Desmond & Gallagher, 2008). This one-dimensional concept of adjustment is prominent not just in studies on amputees,

but also in the literature on coping with chronic disease and disability. (Bishop, 2005). The field of amputation is now paying more attention to indicators of adjustment success as a result of the increased emphasis on adaptability and resilience in the larger corpus of psychological research. Numerous qualitative research have shown how amputees have developed and made successful adjustments (Gallagher & MacLachlan, 2000; Oaksford, Frude, & Cuddihy, 2005; Saradjian, Thompson, & Datta, 2007). Men who had their upper limbs amputated, for example, reported to have developed a strong feeling of self-worth as a result of their ability to overcome the psychological and physical difficulties associated with losing a limb and carry out significant activities for oneself (Saradjian et al., 2007).

Ten of the twelve patients with lower limb amputations examined for the study by Oaksford and colleagues (2005) indicated that losing a leg had helped them grow psychologically. A greater understanding of other people's generosity and one's own resiliency, as well as a better understanding of what it's like to live with a disability, were among the advantages. Quantitative research on successful psychosocial recovery after amputation is also few but expanding (e.g. Oaksford et al., 2005; Phelps et al., 2008; Unwin, Kacperek, & Clarke, 2009).

Dunn (1996), for example, studied 138 members of an amputee golf association to determine the advantages of finding positive meaning in one's amputation experience. More than 75% of them said that since losing their limb, something good had happened. 60% of those who did so report advantages including better social skills or positive life changes. Others who chose to emphasize the good parts of their limb loss or engaged in unfair societal comparison found purpose in their experiences. Those who were able to discern a benefit from having a limb amputated displayed far less dejection than those who were unable to do so.

Gallagher and MacLachlan (2000) discovered that 46% of those who had lost limbs reported that something beneficial had happened as a result of their limb loss. The positives of amputation were emphasized, such as decreased discomfort from it, independence with a prosthetic limb, changing one's attitude towards life, leading a better life, and considering the experience as character-building. A better capacity to manage constraints, as well as an improvement in one's self-reported physical and health state, were associated with a favorable outcome in amputation.

Adjustment to Amputation with Prosthesis-Related Factors

The exploration of numerous medical and amputation-related factors, encompassing demographic variables like age, individual psychological variables, and amputation-specific elements such as the cause of amputation and the level of limb loss, has prompted efforts to pinpoint specific factors that might account for the diversity of responses to amputation. Factors such as perceived social support and coping, for instance, have exhibited inconsistencies in their associations with adjustment outcomes. Nevertheless, exceptions exist, with factors like post-amputation pain and the age at which amputation occurs demonstrating greater consistency in their impact.

Several studies have suggested a positive relationship between increasing age and adaptability in the context of amputation. This pattern is underpinned by life-span development theories, positing that older individuals may react less intensely to limb loss compared to their younger counterparts. This reduced reactivity among older adults could be attributed to a greater acceptance of changes in functional abilities and body image as somewhat expected aspects of the aging process.

Persistent post-amputation pain has emerged as a substantial risk factor for poorer adjustment outcomes, aligning with previous research findings. However, there appears to be no significant connection between the level of amputation and overall adjustment, echoing broader research in the field of chronic illness and disability, which consistently underscores the limited predictive power of objective measures of physical impairment on psychological well-being.

While physical disability may impact an individual's self-concept and other attributes, Rybarczyk and colleagues (1997) contend that its primary influence lies in shaping the adaptation process. They argue against using the degree of impairment as a straightforward predictor of overall adjustment due to its oversimplified nature.

Various psychosocial factors, such as hope, optimism, perceived control, sense of coherence, self-esteem, illness perceptions, balance confidence, and public self-consciousness, have been linked to adjustment outcomes. However, the dearth of comprehensive research in these areas necessitates further investigation before substantive conclusions can be drawn. Despite their relative underrepresentation, coping strategies and social support have garnered the lion's share of research attention in this field.

Given that limb amputation represents a highly distressing life event marked by the emergence of persistent stressors, which pose significant hurdles, numerous studies have adopted a stress-coping framework to investigate the array of coping strategies employed in the process of adapting to limb loss (Desmond & Gallagher, 2008). In line with a broader body of coping research, it has been established that proactive and problem-focused coping strategies prove to be more versatile in aiding individuals in their recovery from amputation, as opposed to emotional and defensive coping mechanisms (Desmond, 2007; Desmond & MacLachlan, 2006; Livneh et

al., 1999). Qualitative research endeavors have also shed light on the vital role of meaning-making and meaning-based coping strategies in this context (Gallagher & MacLachlan, 2000; Oaksford et al., 2005; Saradjian et al., 2007).

Both patients and rehabilitation experts underscore the pivotal role of garnering support from family and friends during the post-amputation recovery phase (Furst & Humphrey, 1983; Schoppen et al., 2003). Individuals blessed with robust social support networks are better equipped to navigate the challenges posed by limb loss in multifaceted ways. Those with strong social bonds are likely to derive invaluable assistance as they endeavor to reestablish their physical and social circumstances following an amputation.

Research conducted by Williams and colleagues (1994) has revealed that individuals with amputations who enjoy higher levels of social support tend to engage more actively in social, recreational, occupational, and other pertinent activities outside their homes and immediate communities. High-quality social support is anticipated to enhance psychological well-being in the wake of amputation, offering the crucial emotional support required to cope with this profound life-altering experience. Perceived social support emerges as a robust predictor of both physical and mental health outcomes, including depressed mood, quality of life, and limitations in activity, as demonstrated in studies by Rybarczyk et al. (1995), Williamson et al. (1994), and Asano et al. (2008).

Subsequent research indicates that individuals who receive greater social support are more adept at adapting to the physical and psychological challenges of living with limb loss over time (Bosse et al., 2002; Hanley et al., 2004; Jensen et al., 2002; Unwin et al., 2009; Williams et al., 2004). Bosse and colleagues' (2002) two-year prospective analysis of patients who had

experienced traumatic lower limb amputations uncovered an association between lower levels of perceived social support and poorer self-reported health status.

Jensen and colleagues (2002) assert that emotional perceptions of social support one month post-amputation robustly and independently predict subsequent improvements in pain management and reductions in depressive symptoms over the ensuing five months. Moreover, six months into the rehabilitation process, perceived social support emerges as a significant independent predictor of both positive emotional well-being and overall adjustment to amputation (Unwin et al., 2009).

Amputee Rehabilitation

In the United States, diabetes results in 80,000 lower limb amputations annually. In contrast to adolescent trauma victims, the majority of patients—more than 80% of patients—have advanced generalized illnesses such Peripheral Arterial Occlusion Disease (PAOD) with or without diabetes mellitus. Many patients have had several surgeries in the past and exhibit a range of physical function impairments, including degenerative changes in other joints, cardiovascular restrictions, metabolic disorders, or eye conditions (e.g., vascular surgery). The degree of amputation of the lower limbs is a crucial aspect of healing. Energy usage differs between transtibial and transfemoral amputees. The ability of the quadriceps to counteract the motion of knee flexion is one of the causes. If the patient's amputation is high above knee level, they may need to use a lot more energy when walking in the future (Vogel et al., 2014). The knee joint in particular is crucial for potential rehabilitation outcomes since a healthy knee can lower the risk of multiple issues with an artificial knee joint. Prosthesis fitting becomes one of the most crucial aspects of rehabilitation once the postoperative phase, which includes, for example, wound healing, pain relief,

mobilization, and mental stability, has been successfully completed. Because patients with upper limb amputations frequently have less movement restriction than patients with lower limb amputations, an outpatient course of treatment is adequate in an institution with 17 years of experience and the requisite equipment (intense occupational therapy, training, and highly competent prosthetics. (Provance et al., 2022).

By repairing or aligning a joint, arthroplasty surgery improves movement capabilities and pain relief. According to Schafer et al., (2013), 350,000 hip and knee replacement surgeries are performed each year in Germany. The majority of patients having complete knee and hip arthroplasty are elderly, between the ages of 65 and 74. Osteoarthritis is the most frequent reason for arthroplasty, accounting for 81% of hip and 94% of knee procedures. Total joint arthroplasty procedures are anticipated to rise in the future due to an increase in obesity and inactivity. Mobility, walking, exercise, and balance training are crucial for a quick recovery following surgery (Millar et al., 2021).

Walking analysis and training, massage treatment, balneotherapy, electrotherapy, and thermotherapy are typical physical therapies (Stein & Greitemann, 2015). Up to 25% of patients still experience postoperative pain, functional issues, and activity limitations two years after surgery, despite the majority of patients reporting no additional damage (Millar et al., 2021). There may be a connection between postoperative pain and higher levels of anxiety and sadness, according to Brander et al., (2003) study. Less social support and less education were linked to higher pain and lower functional results six months after surgery, according to a prospective study by Lopez-Olivo et al. (2011). Environmental elements, like as socioeconomic status, may have an impact on the postoperative situation.

Rehabilitation psychology, pertinent mental diseases, health-related quality of life, psychosocial variables, and treatment criteria are explained in order to fully grasp the needs and responsibilities of psychology in the field of rehabilitation.

Rehabilitation Psychology

The major goals of rehabilitation psychology are patient measurement and reintegration in relation to personal and social issues, psychological difficulties, disabilities, and chronic diseases. Additionally, it covers topics pertaining to health promotion and prevention. Rehabilitation psychology adheres to different standards than a typical psychotherapy environment since rehabilitation necessitates interdisciplinary understanding. Rehabilitation psychologists also require a unique set of skills and knowledge. The physical health of the patients is vital in the context of rehabilitation; therefore in addition to having experience in psychological diagnostics, counseling, and psychotherapy, they should also be educated in basic medicine, health promotion, and patient education. Additional key elements of psychological therapy include self-management, empowerment, resource development, relaxation techniques, work reintegration, and family integration. In actuality, psychological problems are more likely to affect people with chronic illnesses. Twenty to forty percent of patients in rehabilitation settings have mental health comorbidity (Bengel et al., 2016).

Phases of Multi-disciplinary Rehabilitation

When examining the patient's medical history, the therapist must pay special attention to any history of heart disease. A few conditions that the therapist should be aware of are angina, arrhythmias, dyspnea, angioplasty, myocardial infarction, and arterial bypass surgery. Coronary artery disease, congestive heart failure, peripheral vascular disease, arteriosclerosis, hypertension,

and angina are some problems to be aware of. The therapist must compile the patient's full medical history. Medical documents may be needed for the rehabilitation strategy. Additionally, due to the potential effects of some medications on blood pressure and heart rate, medication use needs to be carefully controlled. Once the patient's heart rate and blood pressure have been monitored during the duration of treatment, the intensity of the therapy can be changed as needed. More medical testing is required if the patient continues to display any of the following symptoms: pallor, diaphoresis, chest pain, headache, or peripheral edema. (Gailey & Clark, 1992).

Physical disability treatment needs collaboration across several medical disciplines. The four stages of the rehabilitation procedure are preoperative, immediately after surgery, prosthetic rehabilitation, and continuous care. The duration of the presurgical period may vary depending on the reason for the amputation. In some cases, substantial consulting time may be required. However, in crisis scenarios, the counselling may just take a few seconds. Presurgical preparations include deciding on an acceptable amputation location, deciding on a surgical strategy, and planning for immediate postoperative care. The postoperative phase is critical for wound healing, edema alleviation, and recovery from any other diseases or injuries. The duration of this recuperation time varies greatly depending on the specifics of the amputation. This phase should last three to four weeks, with the bulk of that time spent receiving outpatient treatment. During the recuperation phase, the amputee may be mobilized, and pain management should begin promptly. Counselling may be offered at this time as well. Furthermore, this is an excellent time to begin investigating amputee prosthetic options. Determine if the patient should get prosthetic treatment after the surgery phase. In certain circumstances, it may be prudent to forego further rehabilitation. Nonetheless, prosthesis delivery and rehabilitation should be undertaken at the very least. It has been shown that beginning rehabilitation as soon as possible following amputation enhances the

probability of long-term success. If the patient waits and tries therapy later, the chances of success are reduced. (O'Keeffe, 2011).

Racy (2016) asserts that the sooner a prosthesis is utilized, the less psychological anguish following amputation there will be. While the patient is receiving postoperative care, a few things need to be evaluated. The patient's past medical history, mental state, strength, feeling, mobility in bed, balance, and coordination all need to be assessed. The results of these tests will help the therapist choose the optimum assistive equipment for the amputee. Other concerns that must be addressed include transfers, wheelchair propulsion, and ambulation without a prosthesis while using assistive devices, and cardiac safety procedures for the amputee. To identify the patient's degree of cognitive, it is critical to assess their mental state. The patient must be able to understand and do certain actions, such as wearing and removing the prosthetic limb, managing the sock on the remaining leg, laying down in bed, caring for their skin, and moving about securely. If the examination finds that the patient's family and friends cannot understand these activities, they must actively engage in the patient's rehabilitation. The likelihood of getting better prosthetic treatment will rise as a result. A successful outcome will also be more likely if the patient and their family are actively involved.

Complications are possible with every medical procedure. Amputees with joint problems may have joint contracture. Muscular contractures occur when a muscle or joint shortens permanently. A joint contracture would make it difficult for an amputee to walk on their prosthetic leg, slowing their recuperation. Joint contracts should never be formed. The range of mobility of the residual limb should be assessed and recorded for future use. By measuring the patient's range of motion, the therapist can decide if the patient has a fixed contracture or just tight soft tissues. Inactivity-related soft tissue constriction can be swiftly eased. The prosthetic limb's design may

also be influenced by the upper- and lower-range of motion. It is important to gauge and save the residual limb's range of motion for later use. The therapist can determine if the patient has a fixed contracture or just tight soft tissues by measuring the patient's range of motion. Inactivity-induced soft tissue constriction can be promptly alleviated. The higher and lower ranges of mobility may also have an influence on the design of the prosthetic limb. Proprioceptive feedback may have been compromised, resulting in gait issues. As a result, the patient's chances of getting injured rise. Tissue damage and injury are more likely when there is less warmth, pain, and touch sensation. It takes much more than merely being able to get in and out of bed or modify the bed for comfort to ensure the patient has adequate bed mobility. By adopting the right bed posture, you can avoid the aforementioned contractures. The sheets shouldn't come into direct contact with the skin, suture line, or fragile skin. If the patient is unable to alter their posture and maintain a good sleeping position on their own, assistance must be offered. Because it serves as the foundation for other abilities like getting out of bed and into a wheelchair, patients must master this ability. The two proper positions for rolling, coming to sit, or changing one's posture in bed are supine lying on one's elbows to protracted sitting and log rolling, followed by side lying to sitting. Once bed mobility is gained, transfer skills are mastered (Gailey & Clark, 1992).

Occupational therapists assist patients of all ages in participating in the activities of their choice. Occupational therapists treat their patients by subjecting them to laborious activities. Common involvements include helping young people with a variety of disabilities participate in educational and social activities as well as helping individuals who have been hurt heal from their wounds and regain their skills. For example, if a patient is wearing an upper limb prosthesis, an occupational therapist may focus on assisting them with home activities. One of these duties is to teach the patient how to eat and dress. The patient's ability to retain their center of gravity above

their point of support will be demonstrated during the balance and coordination test. Fluid movements and dexterous motor usage need coordination. Shifting one's weight from one leg to the other requires balance and coordination. A better gait is typically associated with greater balance and coordination. The results of these tests may indicate that the patient should start using a walker. However, with the right guidance, the patient may be able to make better use of aids such as forearm crutches. The development of transfer talent must start early. Practical tasks like using the restroom, taking a shower, or getting into the automobile can be facilitated by this ability. The ability to transfer must be assessed in order to identify a patient's level of independence (Gailey & Clark, 1992).

During the rehabilitation process, it is essential to educate the patient who had their lower limb amputated wheelchair skills. For the most majority of amputee patients, a wheelchair serves as their primary mode of transportation. The energy needed for various types of amputation is greatly decreased by the wheelchair. Ability to manoeuvre in a wheelchair is the first skill that will allow an amputee become independent. The rehabilitation programme includes teaching patients proper limb management. Instructions on how to care for the residual limb as well as the healthy limb must be given to the patient. Once a solid therapeutic relationship has been built, counselors can help patients who are struggling to recover from medical trauma through a variety of evidence-based methods. Counselors can help clients redefine and rediscover healthy relationships with their bodies and with themselves by utilizing Neurofeedback, Narrative Therapy, Trauma-Focused Cognitive-Behavioral Therapy (TFCBT), and other holistic techniques. Medical trauma must still be addressed holistically since it frequently has an impact on the mind, body, and soul.

The treatment goals for a client using TF-CBT and MBCT may include addressing PTSD and depression, assisting clients in retelling their trauma narrative and using creativity in

meaningful ways, assisting clients in safely re-establishing a connection to their bodies, perhaps through yoga and mindfulness-based interventions, encouraging clients to consider the significance of this trauma and how it has affected them in all areas of life, and assisting clients in setting goals to aid in moving on. Although there are probably other goals or theoretical approaches in working with clients who have had medical trauma, these concepts might at least get individuals to think about how counselors should best support clients who have experienced medical trauma.

Treatment Approaches

When working with orthopedic patients, psychologists apply the principles of rehabilitative psychology. The type of therapy provided will depend on the target group. Orthopedic rehabilitation, diagnostics, counseling, and therapeutic and psych educational activities are routinely carried out by psychologists. Organizational and occupational psychology components and research efforts can benefit this area of study. There are increasingly more rehabilitation centers today that employ psychologists. This change signifies the transition from a primarily somatic to a multidimensional perspective of sickness. Significant changes have also been made to the spectrum of illnesses in the psychosomatic and behavior-related fields, including stress from the workplace. Orthopedic, cardiovascular, rheumatologic, neoplastic, metabolic, and respiratory disorders are all treated by physical therapy. These long-term disorders typically involve the development of both the physical and the mental, most frequently as a result of detrimental psychological and social effects during the course of the illness. As a result, the framework for medical rehabilitation also asks for counseling and therapy in addition to somatic-medical treatment. The following psychological objectives must be achieved in conjunction with medical rehabilitation (Bengel & Mittag, 2016)

- Completion of diagnostics related to rehabilitation
- Development of a rehabilitation plan (with regard to psychological issues)
- Beneficial individualized guidance for patients and their families
- Behavior modification aimed at improving awareness of illness; psychological and other treatment modalities; promoting a realistic response to illness and a motivating factor to treat the problem;
- Planning of further activities beyond the rehabilitation stay;

- Diet, physical activity, and leisure (lifestyle component) socio-medical evaluations of the performance needing treatment.

Psychological Interventions

After an amputation, one's quality of life is significantly poorer. In most cases, a persistent sickness that jeopardizes physical health comes before the need for the amputation, with the exception of an accident or trauma that rendered it necessary. Amputating a limb has equally negative effects on mental health.

It has been demonstrated that physical treatment is crucial for enhancing mental wellness (Pezzin et al., 2013). After an amputation, mental impairments are common and include low quality of life, mood disorders, and body image issues. Since it contributes to the initiation and development of psychological illnesses, pain perception has a significant impact on psychological treatment (Hoffman et al., 2007).

Another crucial aspect for assessing mental health when physical health is being restored is Health-Related Quality Of Life (HRQOL), which takes into account how physical and mental health are experienced throughout time. The demands and restrictions of the patients must be taken into account when managing each stage of post amputation adaption. The most efficient way to deliver comprehensive rehabilitation and bio psychosocial treatment is through a multidisciplinary approach that prioritizes patients and their careers (Kesler et al., 2020).

A psychotherapy module for the intervention was created in earlier works. On a conceptual framework, the suggested treatment paradigm is based. Early psychological counselling should be used to decrease psychological suffering after amputation. The patient's present capabilities and limits, post-amputation conditions, physical, mental, emotional, social, and spiritual function, the

social support network at the time, the availability of nearby resources, and the social support system at the time are all things to take into account (Carroll & Edelstein. 2006). In order to address these issues, the essential psychological therapies are covered in this section for use during the amputation and recovery phases.

Preoperative Stage

Patients may worry about a variety of things, such as the possibility of losing a limb, their relationships with family and friends, the time it will take them to recover and possible functional loss, their ability to work, the expense of their care and rehabilitation, and a host of other things. To minimize any harmful psychological effects, mental health must be evaluated before considering amputation. Doctors should advise patients to contact a psychiatrist while also evaluating the psychological reactions of the amputee. Along with the patient's worries, the possibility of amputation should be taken into account.

Immediate Postoperative Stage

For 23% of patients who had amputations, the most painful time came a few hours to a few days after the treatment (McBride, 1989). Quick pain alleviation aids in the patient's recovery. It's essential to aggressively manage discomfort throughout this period. Common psychological reactions to danger, discomfort, or issues are fear and anxiety. Some people say they experience a slight numbness, which could be an anaesthetic side effect or partially the impact of losing someone. By appreciating the variety of their emotional reactions, mental health professionals should enable patients to communicate their emotions and thoughts (Silander, 2018).

In-Hospital Rehabilitation

The hardest part of adjustment is when patients and their families have to get used to the changes that the amputation has caused. It's likely that new coping mechanisms and psychological modifications that weren't required during the acute period are now required. Due to stressful circumstances like worrying about getting bad comments from others, the suitability of prosthetics, ongoing medical conditions, and rehabilitation therapy, anxiety may get worse during this time (Wald & Alvaro, 2004). Pain and aesthetic degradation are initially the patient's main worries, but as time goes on, social reintegration and professional adaptability take center stage. When using unhealthy coping techniques, people are more likely to overcompensate, give up, and avoid dealing with their problems. When someone gives in to avoidance, they may retreat psychologically and socially, reject therapy, or become fixated on their patient status.

Motivation Enhancement Therapy

Solution-focused brief treatment and motivational enhancement therapy are both beneficial in the early stages of rehabilitation. The patient may feel motivated at the start of the initial phase of postoperative recovery, but they could also be fearful due to their concerns about the changes. In order to understand their ambivalence and advance their rehabilitation, it is essential to assess and support the patient's motivation. Patients who get the systematic method known as motivational enhancement therapy feel more motivated to make changes (Miller & Rollnick, 1991).

Laying the foundation for change motivation and fostering optimism and confidence to support the formulation and achievement of realistic goals are the main goals of therapy. One or more of the key concepts of motivational enhancement treatment is the expression of empathy, the

removal of resistance, and the promotion of self-efficacy. Solution-focused brief therapy is regarded to be necessary for patients who have the capacity to change and use therapy to address issues. It is a goal-oriented strategy that emphasizes practical and quick fixes above laboriously articulating the problem. In order to make the patient feel more capable of handling the situation on their own, the therapist emphasizes the patient's assets, strengths, and resources.

Return to daily life

The impact of the amputation on life is now readily apparent. Since a well-fitted prosthetic requires time to prepare, the majority of patients could find it challenging to do daily tasks without one. Unexpected feelings of disappointment and distress may result from the challenges of using and adapting to the prosthesis. Patients and their families will need to adjust to their new roles when the family dynamic changes. Concerns about societal acceptance, job prospects, and sexual adaptability may deteriorate during this time, and varying degrees of regression may take place. If the patient is the family's primary breadwinner, things could get worse. Patients who are encouraged to live independently may show a tendency to depend on others or act out in anger. Some patients feel they have not lived up to their social and financial responsibilities.

Interpersonal Therapy

Interpersonal therapy may be helpful if both patients and family members are conflicted or struggling to adjust to change. Its fundamental tenet is that a person's psychological struggle is closely related to any interpersonal or social problems they may be experiencing. It emphasizes the emotional effects of symptoms and their content as well as the significance of interpersonal relationship problems, in contrast to the psychological and unconscious meaning that symptoms are meant to conceal. Interpersonal therapy covers many important topics, including grief, conflict,

changing roles, and interpersonal sensitivity. After an amputation, many patients notice substantial changes in their manner of life, level of dependency, social network, or place of employment. When a family member loses a body part or their role changes, interpersonal therapy may be performed.

Group Therapy

Similar to peer support groups, group psychotherapy may be beneficial for patients and their families. While giving knowledge and support to patients and their families, it can help people improve themselves and find relief from their problems. It is feasible to improve coping skills and self-control to aid adaptation through group psychotherapy with supportive or therapeutic components. Group psychotherapy can treat problems via psycho-education, problem-solving, communication, and CBT techniques. It may be done in person, over the phone, or over email, among other methods. Peer groups inform patients about potential problems that can develop after an amputation. This promotes the successful adaptation and emotional support of patients and their families.

Psychotherapeutic Plan for Amputees

The six week psychotherapy program's main objectives were cognitive behavior and support. The patient acknowledged experiencing subjective modifications, which frequently included the following:

Cognitive Behavioral Therapy

The objectives of treatment in cognitive behavior therapy, a psychotherapy strategy based on learning principles, are identification and change of the maladaptive mediating and sustaining

elements in the domains of cognition, perception, behavior, emotion, and environment. The goal of modification is to reinforce or replace problematic behaviors with good ones.

Body image and pain are two issues that have been addressed with therapy techniques, while CBT is well known for treating mood disorders. The aim is to assist patients in changing negative thought patterns and understanding how their emotions and beliefs influence their behavior. Interventions that broaden viewpoints and improve cognitive flexibility include psycho-education, Socratic question-and-answer techniques, and cognitive restructuring. Cognitive distortions are frequently caused by automatic thoughts, and amputation survivors frequently think all or nothing and catastrophizing.

Psycho-education

Patients who had to have limbs amputated received psycho-education on how to cope with these long-term psychological effects. They were told that amputation was a type of treatment, not a symptom of failed therapy (Srivastava & Chaudhury, 2014). Psycho-education is the process of educating patients and their families to help them understand their condition, provide them with the tools they need to manage it, and encourage open communication and the sharing of personal experiences. On topics related to those that can cause psychological issues, such pain, as well as disorders like substance misuse or depression, psych educational training can be provided. Giving the patient enough information about the issue and any possible linkages to psychological side effects or worries are crucial when discussing orthopedic rehabilitation. Another vital element is information management about organizations or specialists that patients might contact after leaving the rehabilitation facility. If the psychologist feels that the patient needs more treatment or

is unable to receive enough of it, they should give them enough information about the patient's options for alternative therapies.

Counseling and Psychotherapy

Psychotherapy is a "collaborative treatment based on the interaction between a person and a psychologist," according to the APA (American Psychological Association). It is conversational in nature and offers a safe space where one can be candid with an impartial, nonjudgmental party. Because the patient's rehabilitation stay is frequently too brief for an efficient treatment, psychotherapy can only be given to a certain number of patients. Patients follow a strict routine that prioritizes physical therapy. Therefore, the psychologist must also let the patient know about potential treatment options for after their stay in rehab.

Activity Scheduling

The amputation had significantly altered the patients' everyday routines. The second patient had no choice but to stay at home, in contrast to the first patient who was forced to quit his job. As a result, these patients' daily routines were altered. It gave top priority to enhancing one's capacity for work, social interaction, and leisure activities.

Muscular Relaxation Techniques

Following a physical incision, relaxation techniques have been demonstrated to be beneficial, and they can be a vital component of psychological treatment that improves patient health (Vancampfort et al., 2021). Physical and psychological stress can result in illnesses linked to stress because various forms of stress can have negative effects on the patient's health. Relaxation techniques are effective methods for managing stress because they slow down the body, mind, and both. They may even improve long-term health. Paying attention, becoming more aware

of one's body, and engaging in activities like meditation are all ways to relax. Having these habits can help one have a more optimistic perspective on their physical and mental health. Numerous relaxation techniques are used in the context of orthopaedic rehabilitation (Kampling et al., 2021):

Breathing Techniques

The patient is taught a variety of techniques to help them relax on a psychophysical level. It often coexists with biofeedback, which is covered in more detail below.

Progressive Muscle Relaxation (PMR)

This method calls for the individual contraction and relaxation of every muscle group, typically starting with the extremities. Both patients got progressive muscular relaxation for the treatment of their anxiety and irritability. The patients at first found it difficult to "skip" over the severed part of their bodies during relaxation training, but with time and persistent practice, they were able to do it without getting distracted.

Autogenic Training

This technique uses visual imagery and body awareness to help the patient reach a deep state of relaxation. For instance, before focusing on certain body sensations, the patient learns to visualize a calm environment.

Guided Imagery

Similar to autogenic training, listening to a qualified therapist's voice while, using visuals to generate a profound state of relaxation is necessary. Images that appear while a patient is relaxed may provide important details about their physical, mental, and emotional wellbeing.

Clinical studies show that practicing relaxation techniques can reduce the perception of pain. Relaxation techniques should be included in the requirements for regular medical and psychological treatment because they are seen as an addition to traditional psycho-rehabilitative care.

Mindfulness Meditation

People who are coping with cancer, anxiety, or despair benefit from practicing mindfulness meditation because it enhances their quality of life and helps them feel accepted. Many people also believe their chronic pain to be less severe. It lessens the negative feelings, ideas, and sensations that patients experience through nonjudgmental mindfulness. The practice of mindfulness meditation also strengthens metacognitive insight, enabling the objective observation of negative ideas and emotions. Making it easier to fully experience unpleasant emotions reduces avoidance behavior.

ACT is utilized to increase adaptation and psychological flexibility throughout the post-amputation rehabilitation phase. The ACT emphasizes a mindfulness-based approach that accepts events without casting judgment on them. Acceptance encourages adaptability in dealing with unforeseen events, and commitment to fresh goals that are in line with one's beliefs improves the purpose and meaning behind one's actions. Teaching someone to experience unpleasant thoughts, feelings, and physical sensations in a more flexible and open way may be more beneficial for their quality of life and ability to function in daily life. ACT can be used to treat patients who experience phantom or residual limb pain because it has been proven to be successful in treating chronic pain (Vowles, McCracke, & O'Brien, 2011).

Cognitive restructuring

Using cognitive restructuring techniques, it was possible to identify the patients' automatic negative thoughts and dysfunctional beliefs that were contributing to their feelings of depression, rage, and irritability. The objective was to alter how they saw themselves in the eyes of others, how self-aware they seemed to others, and how open they were to the possibilities of the future.

Reassurance

For both the amputee and their loved ones, an amputation can be a very distressing experience. Uncontrolled anxiety about the future and the unknowable is common. A variety of coping strategies should be offered together with gradual psychological help. The staff's and the treating doctor's vocal and nonverbal expressions of support may make it easier for the patient to adjust to the disability.

Ventilation

When a limb is lost, a challenging and deeply personal sort of sadness develops. Realizing that a familiar function would not be easily replicated may hasten or exacerbate the grieving process associated with limb loss. When issues are simply listened out, the amputee's ventilation experience acts as a constant release valve. Staff and family members who frequently try to prevent the patient from talking about the injury out of worry that the patient could wallow in self-pity need to be made aware of this process (Fard et al., 2020).

Acceptance of Self

It takes a lot of mental effort to heal. Counseling for grief is a proactive process. The main goal of grief work is viewpoint changes. A world vision is analogous to a mental map. How we see the outer world and ourselves is depicted on this map. To account for the tremendous changes

that the great loss has caused to the real world, we must update our mental maps. It could be challenging to get used to an amputation during this period. Amputees must alter their self-perception and how they interact with the outside world. The ability to teach people self-acceptance and a reality orientation at this point will help people cope with the amputation of a limb.

Therapeutic Milieu

Everyone having the same experience has a magnetic appeal. The mourning process is aided by it. The stress of being alone is considerably reduced after meeting the other amputees. Its therapeutic effects are extremely comparable to those of a group therapy session.

Reintegration

In the secure setting of the hospital, the patient learns to control the new bodily functioning patterns that are required as a result of the loss of a limb. At the same time, a feeling of emotional competence also emerges. This learning must be applied in the broader context of social integration in order for amputees to adjust to the challenges of daily living. Medical care must support the patient's integration of the hospitalization as a bridge to life outside of it. This will be improved by continuing communication with the outside world (Kumar et al., 2021).

Family Counseling and Motivation Enhancement

Both patients' families got counseling. The patients needed more sensitive care and were more prone to lose it under stress, they were informed. A heavy caregiving burden seems to exist. Advice was offered to the family members regarding this (Kumar et al., 2021).

Biofeedback

It has been demonstrated that biofeedback is an effective therapeutic method for providing psychological care during orthopaedic rehabilitation. According to Schwartz and Andrasik (2003), applied biofeedback is a therapeutic approach that makes use of electronic equipment to precisely measure, process, and transmit data with instructional and reinforcing elements to patients and therapists regarding their neuromuscular and autonomic activity. Biofeedback is being used to treat an increasing array of psychological issues, such as anxiety disorders, depression, attention deficit disorder, substance abuse, and other psychosomatic symptoms (Monastra et al., 2005). Studies on pain have used biofeedback to treat conditions like tension headache, migraine, stress reduction, muscle pain, and PLP. Amputees were taught to recognize the location and frequency of shocks applied to the stumps by Flor (2002). The associated cortical areas grew as a result, and their PLP sharply decreased. The configuration of the biofeedback is controlled by the hardware for biofeedback that is connected to a computer. The patient's hand or other body parts could have electrodes attached to them (depending which parameters are measured). The patient and therapist can view, interpret, and use the visual bodily data on the computer screen. A few examples of the clinical indications and diagnoses for which biofeedback is employed include the use of relaxation techniques, anxiety, melancholy, discomfort, and muscle tension.

Rational of Study

The current study attempted to detect depression, anxiety, stress, and adjustment among amputees and offered a model of psychological therapy. In Pakistan, there is virtually little research evidence in the field of psychological treatment. In reality, there is no specific therapeutic module accessible for these individuals. Socio-demographic variables have an essential influence in the psychological adjustment following limb amputation. It either helps or hinders an individual's adjustment to this dramatic, life-altering loss. (Van der Schans et al., 2002) Gender is a key socio-demographic component that may be related to the effective adjustment after limb amputation. According to some researches (Mugo 2013), males simply and effectively accepted the reality of this loss and returned to regular life as soon as possible, but females need more time to process this pain. According to studies, the difficulty of psychological adjustment to the unpleasant reality of limb loss varies with age. (Aziz 2013)

A study in 2015 explored the relationship between Depression, Anxiety and psychological adjustment in amputee's patients. It was analyzed that amputation has a great effect on mental health of the amputees' patients. Majority of the amputee patients have depression and anxiety symptoms. The findings of the study were in line with previous research conducted on eighty-nine amputees with a lower extremity amputation the study found depressive symptoms in the amputees throughout the 2-year study with average rates of depression was between 20% and 26%.(Ehde D., 2002) The study showed that male amputees had high score on psychological adjustment and low on depression whereas females score high on depression and lower in psychological adjustment. It is studied that female amputees having high depression and anxiety then male amputees. Gender based study showed that female's amputees suffered from more reactive depression and anxiety symptoms than males' amputees. (Hawamdeh ZM. 2008) Female's

amputees are more likely to experience depression, and to perform more poorly on measure of psychological adjustment.(Pezzin LE, et.al, 2000) Psychological Adjustment scores and Depression & Anxiety scores indicating that higher the Psychological Adjustment, lower the Depression and Anxiety. Previous research demonstrated that prevalence of anxiety and depression in amputees was 29.9 and 13.4%. Both depression and, anxiety is negatively associated with psychological adjustment. (Atherton R & Robertson N, 2006)

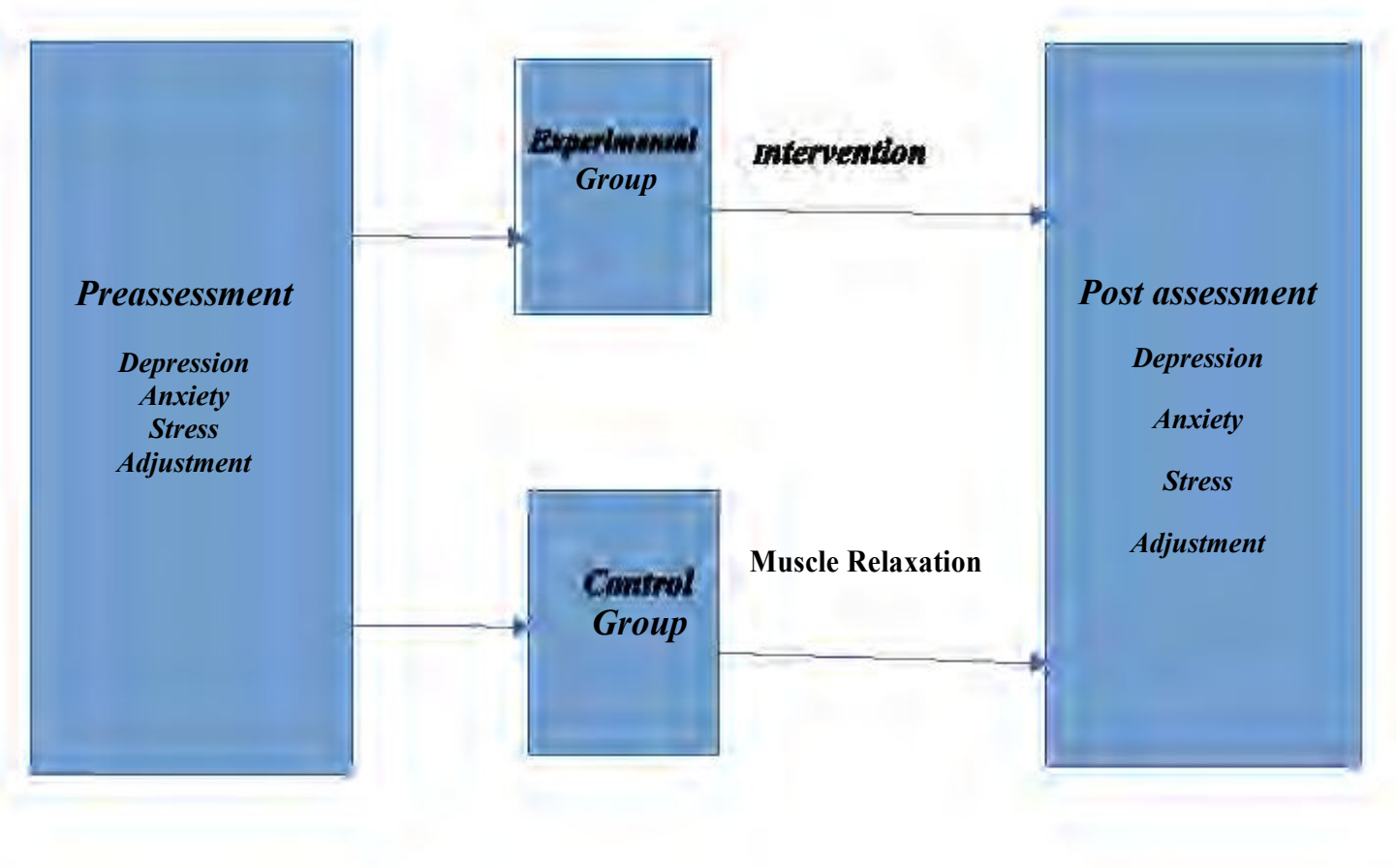
The current study discovered that the frequency of amputation was higher in young people (20-40 years) than in late adults (41-60 years). Most young people are involved in many mechanical, demanding, and dangerous occupations, which increases their risks of becoming amputation victims. As a result, the significance of this cannot be overstated. Because the goal of treatment with amputees is reintegration into social roles, this can be accomplished by addressing amputee issues. These goals are outlined in a well-defined organized module. Amputees require systematic and specific areas of intervention for psychological health. In light of the foregoing, the current study is to measure psychological health and suggest a psychological module to be used among amputees in Pakistani settings.

It's clear from your statement that Pakistan has been dealing with significant challenges related to the aftermath of the war against terrorism. The increasing number of patients with traumatic conditions and disabilities, including amputations, underscores the need for a comprehensive and coordinated approach to rehabilitation and support services. Here are some key points to consider:

It's crucial to establish comprehensive multidisciplinary amputee rehabilitation services that address the physical, psychological, and social aspects of recovery. These services should include physical therapy, psychological counseling, vocational training, and

more. Access to prosthetic services is vital for amputees to regain mobility and independence. Efforts should be made to improve the availability and affordability of prosthetic devices, both in the public and private sectors. Creating a central registry for amputees is an essential step. This registry can help in tracking the number of amputees, their needs, and their progress over time. It can also serve as a valuable resource for future planning and development. Raising awareness among policymakers and the public about the challenges faced by amputees is crucial. Advocacy efforts can help garner support from government and non-governmental organizations for the development of rehabilitation services. Establishing an efficient referral system is important to ensure that amputees are connected to appropriate rehabilitation units for prosthetic fitting and other services promptly. Amputee peer support groups can play a significant role in helping individuals cope with their disabilities and facilitating community reintegration. These groups can provide emotional support, share experiences, and help counter the stigma associated with disability. Collaboration between the government and non-governmental organizations is vital to ensure the sustainability and effectiveness of rehabilitation services. Financial and logistical support is often required to establish and maintain these services. It's essential to have a long-term perspective when addressing the needs of amputees. Plans should consider not only immediate rehabilitation but also ongoing support and follow-up care. Addressing the challenges faced by amputees in Pakistan requires a concerted effort from multiple stakeholders, including the government, healthcare providers, NGOs, and the community. By implementing these measures and prioritizing the well-being and reintegration of amputees, Pakistan can make significant progress in supporting those affected by the consequences of terrorism.

Conceptual Framework (Figure: 1)



Chapter 2

Method

Research Design

Qusai-Experimental Research was designed for the current research study. The research consists of the following studies.

Study-1 Translation and Adaption of the Scale

Study-2 Implementation of Intervention

Study–3 Follow up

Study-1 Translational and Adaption of Scale

Study I comprised of translation and validation of Trinity Amputation and Prosthesis Experience Scale (TAPES-R). This study comprised of 2 phases. In phase I translation of scale was done. The main emphasis in doing so was to make the scale able to be used with less educated individuals who are unable to understand proper English language. For the translation of scale all steps were carefully incorporated. For translation a committee approach was done in order to check the feasibility and accuracy of language. The translated version was then back translated into English language in order to attain equivalence between both versions. To gain the conceptual and linguistic equivalence between both versions an expert panel was made. By examining the translated and original items it was determined that translated version is also conveying the same concept and meaning. Afterwards a validation was done by applying the translated version on a small sample of amputees using prosthesis population.

Study-2 Implementation of Intervention

In this phase of the study, pre-assessment of the sample was conducted at a large teaching hospital of the twin cities. The project was approved by the institutional ethical committee. Informed consent was obtained from all the participants of the study. The objective of main study was to take the pre-assessment of the sample on Trinity Amputation and Prosthesis Experience Scale (TAPES-R) and apply intervention on the Experimental Group from the given sample. Once the intervention has been applied, post-treatment assessment was taken from both the groups and compared using statistical analysis.

Study–3 Follow up

After a period of one and a half months, in this phase, follow-up was planned. For this purpose, 5 individuals from experimental group of post assessment were selected. The objective of the follow-up was to measure the differences, if any, been shown by the sample after one and a half months of receiving psychotherapeutic intervention. They were given Trinity Amputation and Prosthesis Experience Scale-Revised (TAPES-R) and DASS 21 Scale to complete. They were provided fresh instructions and were helped throughout the procedure if required. The obtained results were collected and analyzed using SPSS.

Study1: Translation and Adaptation of Scale

When conducting a cross-cultural research on any novel psychological or social phenomenon, adaptation, translation, and cross-language validation are essential and fundamental steps. Because the construct must be consistent and valid with a standard tool in order to effectively contribute to the literature and measure the phenomenon in a specific population. According to Bibi et al., (2020) inventories written in the target population's native language yield more accurate

and genuine results than those written in a foreign language. Due to the tool's indigenization and support from psychometric properties, the validation process and determination of psychometric properties are essential steps for translational studies (Khan& Batool, 2013). Urdu is the native language of almost everyone in Pakistan, regardless of literacy rate, while English is regarded as a foreign language. The people of Pakistan feel at ease answering the questions that are posed in Urdu. This study was aimed at developing the standardized Urdu version of currently available English TAPES-R instrument that would be conceptually equivalent to Pakistani culture and comprehensible to the country's populace. For procuring the multicultural and conceptually corresponding version of the instrument, the study used Brislin's (1986) forward and backward translation way. This technique which congregates on the theoretical rather than the literal uniformity to procure the uniform translated version of instruments, is more reliable and highly recommended (Voracek et al., 2008)

Traumatic amputation frequently results in a significant impairment of daily life. To put it another way, people's social, economic, and psychological well-being are all impacted over time by amputation, and these individuals may experience feelings of loneliness and low self-esteem as a result. The amputation sufferers' lives are impacted in addition to the nature of the initial cause, whether it is accidental or abrupt or steady or secondary to a disease (De Godoy et al., 2002).

Since physical disability is associated equally with despair and fretfulness, the amputation collectively affects Quality of Life (QOL) of an individual. The amputation of limbs has a significant impact on the lives of the community as a whole because it results in the loss of many skills and bodily activities that were previously uncredited. Additionally, limb reduction is associated with low self-esteem, public isolation, issues with body image, acknowledged weaknesses, and a sense of stigmatization. Accidents, calamities, and attacks can sometimes result

in amputations that cannot be avoided. Mentally, the loss of limbs is traumatizing; According to Williams et al., (2004) depression rates among people who have had their extremities reduced range from 21% to 35%. One of the first procedures to be described is limb amputation. The history of limb amputation surgical treatment closely reflects that of the war to a large extent. The post-World War -II era witnessed expansion in the advancement of specific recuperation applications and prosthetic style for people experiencing the appendage misfortune (Hierton, 1980, Bowker & Pritham, 2004).

In primary care, surgery and rehabilitation took on a new meaning: After the implementation of a standardized amputation procedure, rehabilitation of amputees became the primary focus. Rehabilitation included not only the healing of wounds and the ability to walk again, but also the supply and care of prosthetics. As to, present day methods these days empower patients to foster a near ordinary development schedule. In any case, an ideal prosthesis use relies upon patients' wellbeing status. Furthermore, because insurance or public health services may not cover the costs of highly developed prostheses, they are prohibitively expensive and almost impossible to afford. A standard procedure for amputation surgery and rehabilitation methods are in place today. The significance to a person of having the option to keep on partaking in exercises of everyday living and socialization might offer a few instances of the parts of restoration that are of particular importance to people here of conditions. After an amputation, it is clear that continuing daily and social activities is very important. It has been shown that work and everyday prosthesis use were indicators of psychosocial change (Sinha, van nook Heuvel & Arokiasamy, 2014). Similarly, functional satisfaction with the prosthetic device was linked to less body image anxiety and more time spent using it (Murray & Fox, 2002). As a result, fulfilling social roles will likely depend on having a prosthetic limb

that works well.

Objectives

Main objectives of this study were:

1. To adapt the questionnaire culturally and translate into Urdu language.

2. Determining cross linguistic rationality of the version translated in Urdu language.

3. To establish the psychological characteristics of the translated instrument.

Phase I: Translation of Trinity Amputation and Prosthesis Experience Scales-Revised (TAPES-R) into Urdu Language

Step 1: Forward Translation

The author's consent was requested before the scale could be translated, and Brislin's (1986) approach was used to adapt and translate it. Six bilinguals worked on the TAPES-R translation in this step. Four students from the departments of Urdu, Psychology, and English at Quaid-i-Azam University Islamabad and International Islamic University Islamabad were chosen. Additionally, two M.Phil. Candidates from the same institution were chosen. Bilinguals taken from different fields had exceptional fluency in both Urdu and English. They were tasked with translating all the scale items from English to Urdu while paying close attention to maintaining consistency in both versions' text. Additionally, they were required to translate every item without any change or replacement of item in the original scale.

Step 2: Evaluation of Translated Items by Committee of Experts

A committee comprising three experts; two professors and a Ph.D. scholar thoroughly evaluated the translated items in Urdu language and measured content correspondence between English and Urdu versions. The committee participants assessed the translated items with reference to the context, grammar, phrasing and vocabulary. Subsequently, completing the procedure of choosing items which conveyed the meaning closest to the original items, then the items were enlisted and given to the bilinguals to back translate.

Step 3: Back-Translation of TAPES-R

To define the authenticity, reverse translation of Urdu translated content into English language was carried out. Three M.Phil. And two Masters of Arts and Masters of Science bilingual students back-translated the Urdu TAPES-R; were requested to translate TAPES-R into English language with maximum possible accuracy. Only those bilinguals not involved in the initial translation of the scale were considered for back-translation and they were not aware with the content of original items of the scale.

Step 4: Evaluation of Back-translated Items by Committee of Experts

A cluster of experts involving two professors and a Ph.D. scholar critically evaluated the items of back-translation and carefully chose the list of items for final Urdu scale of TAPES-R. All the individuals had consensus about the accuracy of translation. The back-translation method is a standard technique of translation intended for creating cross cultural validity of measures (Brislin, 1980).

Phase II: Determination of Psychometric Properties of Urdu Trinity Amputation and Prosthesis Experience Scales-Revised (TAPES-R)

The data was investigated in terms of alpha reliability, correlations, and item-total correlations by using Statistical Package for Social Sciences (SPSS).

Sample

The scale was administered on twenty people (n=20), ranging in age from 30 to 60, to determine the psychometric characteristics. The sample was taken from a variety of Pakistani hospitals, that included Fauji Foundation Hospital in Rawalpindi, the National Institute of Rehabilitation Medicine (NIRM) in Islamabad, the Ghurki Hospital in Lahore, the CMH in Quetta, the Nishtar Hospital in Multan, and the Fauji Foundation Hospital in Rawalpindi. The sample was selected using purposive sampling technique. Another sample (n = 20) was chosen for cross-linguistic validation and divided into two equal parts (group 1 and group 2). Group 1 completed the original English version of the scale, while Group 2 completed the translated Urdu version. The same participants were given the scale again, but this time in a different way after 15 days. Further, groups 1a (n=5) and 1b (n=5) were subdivided from group 1. The formation of groups 2a (n=5) and 2b (n=5) was similar. Groups 1a and 2a received the Urdu version of the scale, while group 1b and 2b received the English version.

Procedure

Permission letters were issued to the administrators of specific institutes for the reason of data collection on behalf of the Psychology Department at International Islamic University Islamabad. The specific individuals were contacted and their approval was taken for their involvement in the research after the authorities granted permission. They were asked to carefully

respond to the Trinity Amputation and Prosthesis Experience Scales-Revised (TAPES-R) questions after reading the instructions. The questionnaire took an average of 15 minutes in its completion. The participants were guaranteed of maintaining the privacy of their responses. The individuals completed the scale with sufficient assistance.

Phase III: Validation of Scale

Step 1: Confirmatory Factor Analysis: To construct the validity of the factor structure of TAPES-R, a confirmatory factor analysis (CFA) was done by using AMOS version 20. This was done by determining the indices for goodness of fit for all the items which constituted the Scale. It was done to validate the items for the sample of present study.

Step 2: Construct Validation: The new scales should exhibit content validity as well as internal consistency. These both provide the supportive evidence for construct validity. Additional evidence of construct validity can be attained by investigating the magnitude of correlation of newly constructed scale with some other measures which are assumed to assess the similar constructs (convergent validity). Furthermore it can also be investigated that to which extent they do not relate with different measures (discriminant validity). It also seems worthwhile to examine the relationship of new scale with such variables that are conceived to be an outcome of the main measure (criterion-related validity).

Results:

Table 1

Frequencies and percentages of demographic variables of Study (N=20)

Variables	*Category*	*F*	*%*
Age	30 – 40	6	30
	41 – 50	10	50
	51 – 60	4	20
Gender	Male	18	90
	Female	2	10
Duration of Amputation	0 – 2	6	30
	3 – 5	12	60
	6 – 8	2	10
Duration of Prosthesis	0 – 2	13	65
	3 – 5	7	35
Types of Prosthesis	Below knee	7	35
	Through knee	1	5
	Above knee	6	30
	Below elbow	1	5
	Above elbow	5	25
Reason of Amputation	Diabetes	3	15
	Others	17	85

Table 1 shows the frequencies and percentages of the demographic variables. These demographic variables are age, gender, duration of amputation, duration of prosthesis types of prosthesis and reason of amputation.

Table 2

Descriptive Statistics and Alpha-Reliability Coefficient of scales (N=20)

Subscales	*K*	α	*M(SD)*	Range		Skewness	Kurtosis
				Actual	Potential		
General Adjustment	5	.67	13(1.65)	9-16	5-25	-1.69	3.08
Social Adjustment	5	.62	13(1.45)	9.5-15	5-25	-1.02	0.89
Adjustment to Limitation	5	.67	13(1.65)	9-16	5-25	-1.69	3.08
Activity Restriction Scale	10	.79	11(6.5)	13-27	10-30	2.64	9.88
Aesthetic Satisfaction	3	.83	6.9(1.43)	3-9	3-9	-0.86	1.51
Functional Satisfaction	4	.75	9.9(1.65)	7-10	4-12	0.02	-0.26

Note. k= No. of items, M (SD) = Mean (Standard Deviation), α= Chronbach's Alpha

Table 2 shows Descriptive statistics, Alpha reliabilities and the number of items in each subscale of the questionnaire. The Alpha reliability of the subscales is good and hence the questionnaire is reliable for further analysis. Values of Skewness and Kurtosis of all the subscales are between (-1 to +1) which shows that the data is normally distributed.

Table 3

Cross Language and Test-retest Reliability of TAPES-R and its subscales (N = 20)

Groups	N	1st Administration	2nd Administration	R
I	5	English	English	.82
II	5	English	Urdu	.76
III	5	Urdu	Urdu	.72
IV	5	Urdu	English	.87

This table shows the correlation matrix of the given scale. Correlation shows the degree of strength and association between the two administrations. The outcome indicates towards existence of a significant positive correlation between general adjustment and functional satisfaction.

Table 4

Correlation Coefficient Matrix for study variables (N=20)

Variables	1	2	3	4	5	6
1 General Adjustment	1	.47*	-.15	-.42	.55*	.73**
2 Social Adjustment		1	.11	.23	.47*	.35
3 Adjustment to Limitation			1	.05	-.24	.05
4 Activity Restriction Scale				1	-.26	-.41
5 Aesthetic Satisfaction					1	.47*
6 Functional Satisfaction						1

(*p<0.05), (**p<0.01)

This table shows the correlation matrix of the given scale. Correlation shows the degree of strength and association between the variables. The outcome indicates towards existence of a significant positive correlation between general adjustment and functional satisfaction.

Table 5

Corrected Item-Total Correlation: *Psychosocial Adjustment subscales*

Items	Corrected Item-Total Correlation
GA1	.43
GA2	.38
GA3	.35
GA4	.40
GA5	.27
SA1	.60
SA2	.56
SA3	.58
SA4	.67
SA5	.24
AL1	.31
AL2	.28
AL3	.41
AL4	.18
AL5	.34

The above table show the corrected items-total correlation of psychosocial adjustment subscales. All items have positive total correlation value with other items. None of the items have very poor relationship with the rest of the items.

Table 6

Inter-Item Correlation Matrix: Psychosocial Adjustment subscales

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	GA1	1.00														
2	GA2	0.68	1.00													
3	GA3	0.80	0.71	1.00												
4	GA4	0.61	0.63	0.56	1.00											
5	GA5	0.54	0.76	0.44	0.43	1.00										
6	SA1	0.41	0.29	0.30	0.43	0.14	1.00									
7	SA2	0.13	0.10	0.15	0.18	0.05	0.66	1.00								
8	SA3	0.11	0.10	0.06	0.16	0.13	0.55	0.73	1.00							
9	SA4	0.35	0.21	0.33	0.37	0.06	0.73	0.64	0.57	1.00						
10	SA5	0.09	-0.11	-0.05	0.27	-0.22	0.53	0.57	0.32	0.57	1.00					
11	AL1	-0.18	-0.25	-0.23	-0.12	-0.34	0.23	0.30	0.24	0.28	0.09	1.00				
12	AL2	-0.15	0.03	-0.11	-0.08	0.15	-0.09	0.05	0.31	0.13	-0.14	0.42	1.00			
13	AL3	-0.13	-0.20	-0.20	-0.16	-0.12	0.15	0.28	0.46	0.20	0.09	0.69	0.66	1.00		
14	AL4	-0.18	-0.21	-0.17	-0.25	-0.13	-0.22	0.09	0.28	-0.03	-0.17	0.61	0.57	0.72	1.00	
15	AL5	-0.01	-0.14	-0.18	-0.20	-0.05	0.19	0.18	0.18	0.30	0.03	0.67	0.45	0.59	0.50	1.00

The above is also showing the correlation between items but this is inter-item correlation matrix which show association with each every item. Some items have positive and some have negative association with each other's.

Table 7

Corrected Item-Total Correlation: *Activity Restriction Scale*

Items	Corrected Item-Total Correlation
a	.69
b	.78
c	.69
d	.77
e	.71
f	.73
g	.88
h	.78
i	.89
j	.62

The above table show the corrected items-total correlation of psychosocial activity restriction Scale. All items have positive total correlation value with other items. None of the items have very poor relationship with other items.

Table 8

Inter-Item Correlation Matrix: Activity Restriction Scale

S.No		1	2	3	4	5	6	7	8	9	10
1	a	1.00									
2	b	0.71	1.00								
3	c	0.57	0.78	1.00							
4	d	0.53	0.56	0.56	1.00						
5	e	0.39	0.64	0.71	0.56	1.00					
6	f	0.70	0.48	0.39	0.66	0.52	1.00				
7	g	0.60	0.71	0.58	0.81	0.64	0.79	1.00			
8	h	0.57	0.49	0.60	0.69	0.59	0.76	0.82	1.00		
9	i	0.70	0.82	0.72	0.81	0.67	0.64	0.81	0.66	1.00	
10	j	0.39	0.55	0.32	0.50	0.59	0.50	0.65	0.52	0.63	1.00

The above is also showing the correlation between items but this is inter-item correlation matrix which show association with each every item. Some items have positive and some have negative association with each other.

Table 9

Corrected Item-Total Correlation: Satisfaction with Prosthesis subscales

Items	Corrected Item-Total Correlation
Colour	.28
Shape	.26
Appearance	.27
Weight	.40
Usefulness	.28
Reliability	.34
Fit	.43
Comfort	.45

The above table show the corrected items-total correlation of satisfaction with prosthesis subscales scale. All items have positive total correlation value with other items. None of the items have very poor relationship with other items.

Table 10

Inter-Item Correlation Matrix: Satisfaction with Prosthesis subscales

S.No		1	2	3	4	5	6	7	8
1	Colour	1.00							
2	Shape	0.97	1.00						
3	Appearance	0.71	0.71	1.00					
4	Weight	0.01	0.01	0.07	1.00				
5	Usefulness	-0.15	-0.15	-0.07	0.29	1.00			
6	Reliability	-0.02	-0.01	-0.13	0.28	0.30	1.00		
7	Fit	-0.16	-0.20	-0.19	0.47	0.47	0.45	1.00	
8	Comfort	-0.13	-0.18	-0.12	0.40	0.40	0.40	0.83	1.00

The above is also showing the correlation between items but this is inter-item correlation matrix which show association with each every item. Some items have positive and some have negative association with each other.

RESULTS FOR CFA MEASUREMENT MODEL

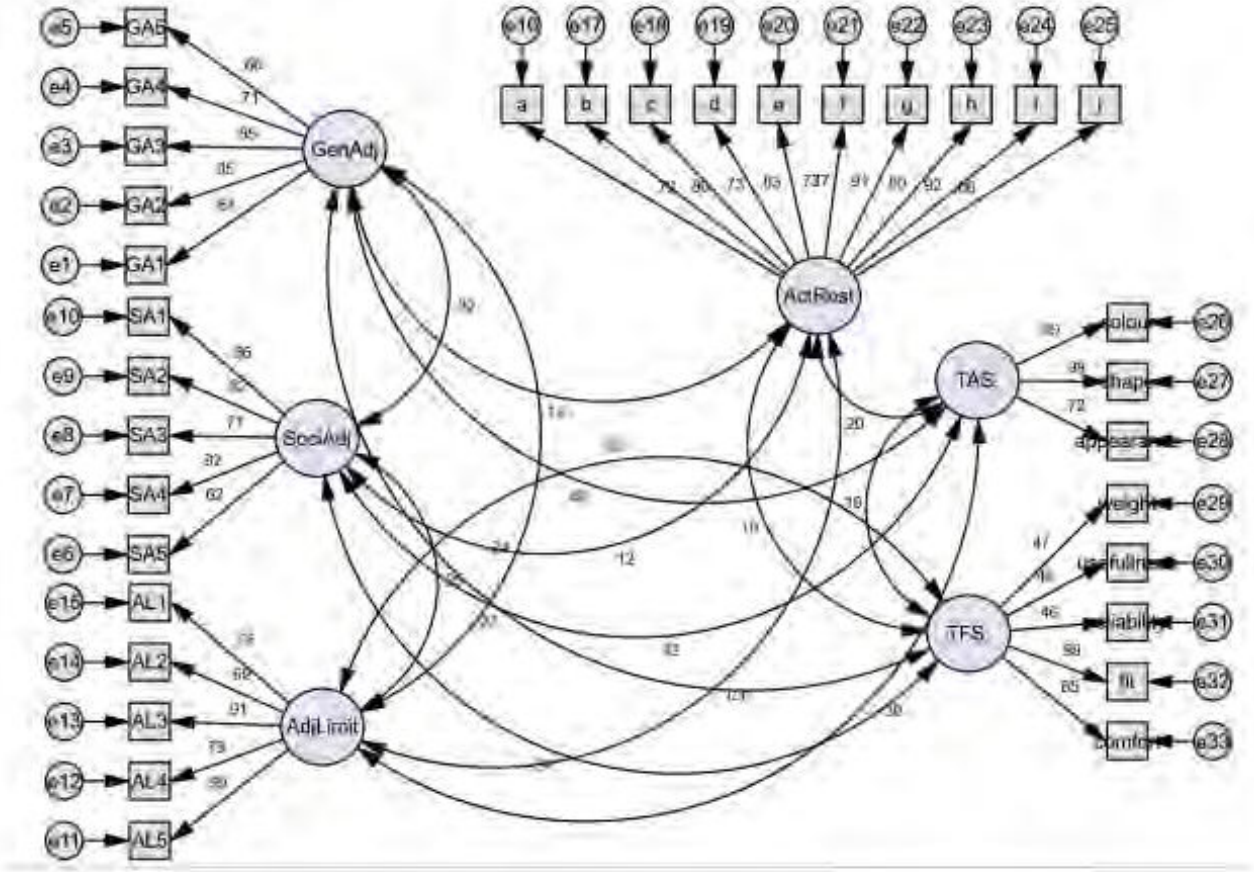
A confirmatory factor analysis on the sample data (n=40) using AMOS 21.0 (Arbuckle, 1994) was conducted by researchers. This was to assess the latent structure which consists of all constructs in the proposed conceptual model with method of maximum likelihood estimation. The first-order confirmatory factor analysis consisting of all latent factors simultaneously as correlated first-order constructs was estimated.

All construct average variance extracted are above the thresholds of 0.50 and reliability is above the thresholds of 0.70, so all latent constructs guarantee good reliability properties as seen in the below table. Researchers believe that the scales of all first-order factors have satisfactory reliability properties (Bagozzi and Yi 1988; Hair et al. 2010). The reliability for all scales of first order factors has been achieved. The first-order measurement model has been performed and tested. Convergent validity was applied by using statistically significant as $p<.01$ and threshold of .70. Researchers have recommended that factor loading above cutoff value of 0.40 is ideal, and in addition the standardized factor loadings of greater than 0.40 are also acceptable.

The below table shows the factor loading (estimated value) of each dimension. General Adjustment was measured by five items, social adjustment was measured by five items, adjustment to limitation was measured by five items, activity restriction was measured by ten items, aesthetic satisfaction was measured by three items and functional satisfaction was measured by five items. If any item having factor loading ≥0.40 (Cua et al., 2001), it will be included for further analysis. No item has factor loading of less than 0.40 so for further analysis we will not exclude any item.

The loading value of each item, decision, AVE and CR values are given in the below table. Convergent validity is measured by using AVE formula, the value of AVE greater than 0.50 is

accepted of the scale. Generally, AVE acceptance value is >0.50 but according to Fornell and Larcker (1981) AVE between 0.50-0.30 is also acceptable if composite reliability (CR) is >0.60. Generally composite reliability value >0.7 is accepted for good reliability of the scale. The results show that all values are in the acceptable range. The below figure shows the loading of each item.



(Figure:2)

Table 11

Convergent Validity: Factor Loadings, Average Variance Extracted (AVE) and Construct Reliability (N=50)

Name of Variable/Construct	Items	Factor Loading	AVE Score	CR Values
General Adjustment			.63	.89
	GA1	.66		
	GA2	.71		
	GA3	.85		
	GA4	.85		
	GA5	.87		
Social Adjustment			.59	.88
	SA1	.86		
	SA2	.82		
	SA3	.71		
	SA4	.82		
	SA5	.62		
Adjustment to Limitation			.60	.86
	AL1	.78		
	AL2	.69		
	AL3	.91		
	AL4	.78		
	AL5	.69		
Activity Restriction			.63	.94
	AR1	.72		

	AR2	.80		
	AR3	.73		
	AR4	.83		
	AR5	.73		
	AR6	.77		
	AR7	.91		
	AR8	.80		
	AR9	.92		
	AR10	.66		
Aesthetic Satisfaction			.82	.93
	AS1	.99		
	AS2	.98		
	AS3	.72		
Functional Satisfaction			.50	.80
	FS1	.47		
	FS2	.48		
	FS3	.46		
	FS4	.98		
	FS5	.85		

The below table shows the factor loading (estimated value) of each dimension. General Adjustment was measured by five items, social adjustment was measured by five items, adjustment to limitation was measured by five items, activity restriction was measured by ten items, aesthetic satisfaction was measured by three items and functional satisfaction was measured by five items. If any item having factor loading ≥0.40 (Cua et al., 2001), it will be included for further analysis. No item has factor loading of less than 0.40 so for further analysis we will not exclude any item.

The loading value of each item, decision, AVE and CR values are given in the below table. Convergent validity is measured by using AVE formula, the value of AVE greater than 0.50 is

accepted of the scale. Generally, AVE acceptance value is >0.50 but according to Fornell and Larcker (1981) AVE between 0.50-0.30 is also acceptable if composite reliability (CR) is >0.60. Generally composite reliability value >0.7 is accepted for good reliability of the scale. The results show that all values are in the acceptable range. The below figure shows the loading of each item.

Discussion

In Pakistan, there are very few studies on amputation and prosthesis, particularly with regard to their rehabilitation. Hence, there was an extraordinary need of openness of suitable estimation in Urdu language to assess a general outlook of people of removal and prosthesis. Present review was led to decipher the Trinity Amputation and Prosthesis Evaluation Scale (TAPES-R) into Urdu language and to lay out its psychometric properties.

Following Brislin's (1986) description of the steps of translation, the instrument was translated. Scale translation consisted of a forward translation by bilingual experts and a committee approach, a backward translation by different bilingual experts (not the same experts who translated the forward part), and a committee approach. As the final step of the study, a consensus meeting was held to select the best reconciled version of the translated scale to achieve the study's goal.

Analyzing a comparison between the scale's original English-language version and the translated Urdu version is an essential step in the translation phase. This will help determine the scale's cross-language validity. Two versions of the scale were given to a small group of twenty prosthetic users in order to verify their responses. After administering two Urdu-English and two Urdu-Urdu sequences to two groups of people, these two groups were further divided into four subgroups of 10 married people each. Reliabilities across tests and correlations between these groups; English to Urdu, English to English, English to Urdu, and Urdu-English all indicate a significant positive relationship between the two scales.

The evaluation of the scales' quality and suitability is made possible by determining their psychometric properties, which is considered an essential initial step. The findings showed that participants generally responded positively to all of the scales. In addition, it demonstrated that the

items were easily comprehended. The item total correlation and reliability analysis revealed that each scale was internally consistent. According to Anastasi (1997), the significant item total correlations indicated that the scales were valid and measured what they were designed to measure. Overall, the results showed that the translated version of the scale in Urdu has good construct validity and reliability, so it could be used for the measurement. The present study's findings support the confident use of translated scales in hospitals and rehabilitation facilities as well as the direction of future research. In order to improve the internal consistency of the scale, future studies might attempt to develop and improve a number of items while keeping the cultural background in mind.

Chapter 3

Implementation of Intervention Plan

Study-2: Main study/ Implementation of Intervention

In the main study, the objective was to assess the effectiveness of the Psychotherapeutic Intervention on Amputees with Prosthesis. This study was carried out in three following phases.

Objectives

The objectives of the present study are as under:

1. To examine the efficacy of psychotherapeutic intervention in the enhancement of PsychologicalAdjustment of the Amputees using prosthesis.
2. To explore the effects of age, gender, socio-economic status, family system and educational qualification of the Amputees using prosthesis on their post-assessment.

Hypotheses

The hypotheses of the present study are as follows:

1. There is a positive relationship between depression, anxiety and stress amongAmputees using prosthesis.
2. There is a negative relationship between psychological adjustment, stress, depression and anxiety among amputees using prosthesis.
3. Experimental group will experience lower anxiety, stress and depression than control group after intervention.
4. Psychological Adjustment of Experimental group will be better as compared to theControl group after receiving intervention.

5. Amputees from joint family system experience better psychological adjustment and lower depression, anxiety and stress as compared to the individuals from a nuclear family system.
6. Amputees with higher levels of education will show less depression, anxiety, stress and better Psychological adjustment than individuals with lower levels of education.

Phase I: Pre-assessment

In this phase of the study, the purpose was to take a pre-assessment score of the study sample and prepare them for therapy. For this, the sample was divided in two groups' i-e control group and experimental group. The scales were administered on the given sample.

Sample

The research sample of the main study comprised of 40 individuals (n=20 Control Group, n=20 Experimental Group) amputees using prosthesis taken from Artificial Limb Center Rawalpindi., Fauji Foundation Hospital and Ghurki Hospital, Lahore. All patients were randomly assigned to either the experimental group or control group.

***I*nclusion Criteria** The sample comprised of patients having amputations and now their prosthesis had been fitted for a minimum period of 6 months.

Exclusion Criteria Patients with major psychiatric disorder and patients who had their amputation done but were not using prosthesis were excluded from the study.

Instrument

The following were completed by the patients individually. They were given due help where needed.

Demographic Sheet

Socio-demographic and clinical data were collected from participants at the outset and updated

as needed on following occasions. Age, gender, education level, marital status, and living condition socio-demographic data were collected from participants. Clinical data on when the amputation was performed, the reason and level of the amputation, the presence of co-morbidities, the number of hours per day the prosthetic limb was worn, and the existence of residual and phantom limb pain are also reported.

Trinity Amputation and Prosthesis Experience Scale- Revised (TAPES-R)

The TAPES-R is a multidimensional evaluation that is used to examine the psychological processes involved in adapting to a prosthesis as well as the unique demands of wearing a prosthesis. The TAPES-R is a Psychosocial Scale with five-item subscales (General Adjustment, Social Adjustment, and Adjustment to Limitation). The second portion consists of a 10-item Activity Restriction Scale. The final component addresses Satisfaction with the Prosthesis and includes eight items separated into two categories, the Aesthetic and Functional aspects of the prosthesis. The fourth section delves into the experience of phantom limb pain, residual limb pain, and other non-amputation-related medical issues. . Each of these is separated into questions about how frequently it occurs, how long each episode lasts, how the intensity of pain might be defined, and how much it interferes with their everyday lives. This part also includes two items in which respondents are asked to rank their health and physical ability. The TAPES-R contains 64 elements in total, and administration time is around 15 minutes. While the whole TAPES-R provides a full view, each of the scales may be utilised alone. (Gallagher et al., 2010)

Depression Anxiety and Stress Scale

The DASS-21 is a self-report scale that assesses negative emotional states such as sadness, anxiety, and stress. This scale may be used in clinical settings to help with diagnosis and outcome tracking, as well as in non-clinical contexts as a mental health screener. Because the three DASS

scales have been found to have excellent internal consistency and to provide significant discriminations, they fulfil the demands of both researchers and clinicians who want to evaluate current status or change in state over time (e.g., during therapy). It may be used to determine the amount of therapy response and is a good tool for routine outcome monitoring. (Aslam, 2018)

Procedure

In this phase of the study, pre-assessment of the sample was taken in a large hospital of the twin cities. The project was official accepted by the institutional ethical committee of the institute. Informed consent was taken from all the participants of the study and all patients with amputation using prosthesis were selected. The objective of main study was to take the pre-assessment of Amputees from both the Control and Experimental groups on Trinity Amputation and Prosthesis Experience Scale- Revised (TAPES-R) and prepare them for the application of intervention in the next phase.

Phase II: Intervention Application

In this phase of the study, the experimental group will receive psychotherapeutic intervention treatment for a period of two months, divided over different sessions.

Sample

The sample of this phase of study comprised of 20 individuals (n=20 Experimental Group) amputees using prosthesis taken from Artificial Limb Center Rawalpindi., Fauji Foundation Hospital and Ghurki Hospital, Lahore.

Inclusion Criteria The sample comprised of patients with amputations and now their prosthesis has been fitted.

Exclusion Criteria Patients with major psychiatric disorder and patients who had their amputation done but were not using prosthesis were excluded from the study.

Procedure

The structured therapy package was administered to the experimental group. It comprised of different stages, all managed in session especially designed for the clients. The psychotherapeutic plan used here is mainly cognitive behavioral and supportive oriented, spanned over six weeks. It has been formerly used by Akash and Halder in 2002. Subjective changes were made according to each individual patient's need and requirement.

Sessions of the Psychotherapy

The sessions of the therapy will be based upon certain principles of Cognitive Behavioral Therapy and Supportive Therapy, spanned over six weeks. The sessions would be individually provided to the whole sample of Experimental group.

Session-I: Rapport Building

Session Aims:

- Introduction to client
- Review of assessment and demographics that have already been taken.

Agenda:

1. Therapist introduces himself to the client
2. Client is asked to introduce himself in detail telling about himself, his occupation, education and family.

3. Ask the client about his expectation for this Treatment.

4. For rapport building ask the client to share his some of his experience relating to his amputation and the prosthesis being done.

   Briefly discuss the plan of the therapy with the client, telling him about the total no. of sessions and the pattern of the therapy.

Session-II Psycho education about Amputation

Session Aims:

- Explore the disturbing Events.
- Psycho educate the client that how can he reduce his depressive and anxious feeling.
- Develop skills to identify the causing feelings.

Agenda:

1. Psycho education was imparted to the patients explaining the psychological reactions after amputation and their long term sustenance.
2. Amputation was explained to them as a mode of treatment rather than failure of treatment.

Psycho-education plays a pivotal role in the holistic treatment of chronic pain, as it serves to enlighten both the individual suffering from chronic pain and their family about the nature and intricacies of this persistent condition. It provides them with a comprehensive understanding and a conceptual framework to navigate the complexities of chronic pain. What sets psycho education apart is its emphasis on unveiling the non-protective nature of chronic pain signals that traverse

the body and are subsequently processed in the intricate neural networks of the brain. This stands in stark contrast to conventional biological explanations for the presence of pain.

Within the realm of psycho-education, two fundamental theories are brought to the forefront: The Gate Control Theory of Pain, as elucidated by Mendell (2014), and the Fear Avoidance Model of Chronic Pain, as articulated by Vlaeyen and Linton (2012).

The Gate Control Theory of Pain provides a fascinating glimpse into the dynamic process through which the brain can potentially wield its influence to modulate the perception of pain sensations. It unveils the incredible potential for cognitive and psychological factors to play a significant role in altering the experience of pain itself (Mendell, 2014).

On the other hand, the Fear Avoidance Model of Chronic Pain delves into the intricate psychology behind chronic pain. It sheds light on how the heightened fear of pain, coupled with the persistent avoidance of activities that may trigger or exacerbate discomfort, can culminate in prolonged disability. This model underscores the profound interplay between emotional responses, behavioral choices, and the perpetuation of chronic pain (Vlaeyen & Linton, 2012).

At its core, the primary objective of psychoeducation is to provide a compelling rationale for the integration of psychological interventions in the management of chronic pain. By doing so, it not only aims to mitigate pain intensity but also seeks to restore functionality. Importantly, it accomplishes the essential task of reshaping the perception of chronic pain, steering it away from a purely biomedical understanding and toward a more holistic and multidimensional perspective that acknowledges the powerful role of psychology in the experience of chronic pain.

Session-III: Activity Scheduling

Session Aims:

- Discussing the routine of the client.
- Asking for his interests and hobbies.
- Planning activities of client's interest to help him spend his time happily.

Agenda:

1. Amputation had caused a significant change in daily routine of the patients.
2. While the patient had to discontinue from his job
3. He has practically nothing to do rather than sitting at home.
4. Thus, daily activity of these patients are rescheduled. It focused on improving occupational functioning, increased time spend with people, hobbies and interests.

Individuals with depressed symptoms and individuals with physical limitations owing to medical conditions may benefit from activity scheduling including arranging the amount or kind of activity. Activity scheduling helps to arrange the patient's daily routine and may enhance the amount of time spent on activities that bring joy or success. Rosenstiel and Keefe (1983) developed another typology of coping strategies. Other coping techniques used by people with low back pain in their study included reinterpreting, exercise, diversion, self-talk, ignoring, and prayer. Two of these tactics, reinterpreting and ignoring, are analogous to Lazarus and Folkman's (1984) positive re-appraisal and escape-avoidance strategies. Activity is an effective coping approach, particularly when dealing with pain or despair, or while attempting to break habits such as smoking or

overeating. This method might include everything from physical exercise like walking or swimming to more passive pursuits like knitting, reading, or painting. In general, doing something is preferable to doing nothing. Activity treatments, also known as recreation therapy and occupational therapy, encourage recovery via active participation. Crafting can be part of occupational therapy. Walks can be used as a kind of leisure therapy. Coloring has recently been recognized as an activity that has been shown in several studies to considerably reduce levels of depression symptoms and anxiety.

Session-IV: Muscular Relaxation

Session Aims:

- Relaxing the client.
- Encouraging the client to master the Relaxation Training which would help him relax his body and nerves.

Agenda:

1. Progressive Muscular relaxation was imparted to the patients, to control their anxiety, and irritability.
2. It proved to be difficult initially for the patients, when they had to "skip" the amputed part of their body during relaxation training; but gradually with constant motivation and practice they were able to do it without distraction.

Edmund Jacobson, the founder of progressive muscle relaxation training, noticed in 1905 that deeply relaxed students had no obvious startle response to sudden noise; this became his life work (Jacobson 1977). He developed a lengthy and meticulous technique that focused on getting

in touch with musculature and learning to control tension levels. Jacobson's approach was devised so that the practitioner would eventually be able to detect and release unneeded tension naturally and instinctively. Others, most notably Joseph Wolpe, have since altered and simplified the procedure, which is now known as abridged progressive muscle relaxation training. According to Freeman (2001), PMR approaches minimize sympathetic arousal by educating the individual to lower oxygen demand by repeated release of muscular tension mixed with slowing of breathing. This makes it an effective therapeutic intervention for panic attacks, phobias, and anxiety disorders. The PMR approach has a solid track record of therapeutic success and is an accepted standard treatment for a variety of somatic states, including anxiety and stress, and is included in clinical psychology training (Pawlow & Jones 2002, Turner et al 1992). Individual live teaching is advised for patients; fact, Lehrer and Woolfolf (1994) contend that one-to-one training is essential for effective training as well as any evaluative study.

Session-V: Cognitive Restructuring

Session Aims:

- Explain the errors in thinking through examples
- Explain why the client gets depressed and feels anxiety on certain events.
- Teach the Skills of Cognitive Restructuring.

Agenda:

1. Explain how faulty thoughts lead to misunderstanding, disturbance and conflicts.

2. Cognitive restructuring methods were used to help the client identify his automatic negative thoughts, and dysfunctional beliefs that were leading to feelings of depression, anger and irritability.
3. The aim was to lower down the level of consciousness of their state in public places, change their perception of what others think about them, as well as their exploration of possibilities still lying ahead.
4. Introduce the skills of Cognitive Restructuring.
5. Practice Thought Stopping Exercise.

Cognitive restructuring is central to cognitive behaviour therapy, a well-studied talk therapy technique that has been shown to be beneficial in treating a variety of mental health disorders, including depression and anxiety disorder.

A patient and therapist collaborate in cognitive behavioural therapy (CBT) to uncover erroneous thinking patterns that are contributing to a problem and practice procedures to help alter unfavorable thought patterns. Recognizing flaws in your own cognitive processes might be difficult. As a result, most specialists advise working with a therapist while beginning cognitive restructuring.

Cognitive restructuring approaches, as the name implies, deconstruct problematic concepts and reconstruct them in a more balanced and correct manner. Cognitive distortions are mental processes that generate a skewed, harmful perception of reality in certain people. Cognitive distortions are frequently associated with depression, anxiety, relational issues, and self-defeating behaviors.

Some examples of cognitive distortions include:

- black-and-white thinking
- catastrophizing
- overgeneralizing
- personalizing

Cognitive restructuring allows you to catch these maladaptive beliefs as they happen. Then you may practice reframing these views in more accurate and beneficial ways. The argument goes that if you can modify your perspective on specific events or circumstances, you may be able to change your sentiments and behaviors.

Scattered counting is a good and effective technique to handle anxiety. Start with any number and then jump around — 14, 89, 30, 57, etc. It takes more concentration to come up with the next number when you have to think about what it will be, and this helps take your mind off the thoughts that are troubling you.

Session-VI: Family Counseling and Motivation Enhancement

Session Aims:

- Meeting the family members and discussing the problems being faced by the client.
- Involving them with the therapy.
- Enhancing the motivation levels of the client.

Agenda:

1. The family members of the clients were counseled.

2. They were explained about the increased empathetic care required by the patients and their increased vulnerability to break down in stressful situations.

3. Care burden apparently seems be more at the beginning but later they specialize in dealing with the client.

4. The client is motivated towards living an active life and see the better prospects out of it.

Motivational enhancement therapy (MET) is a directive, person-centered approach to therapy that focuses on improving an individual's motivation to change. Those who engage in self-destructive behaviors may often be ambivalent or have little motivation to change such behaviors, despite acknowledging the negative impact of said behaviors on health, family life, or social functioning.

MET is based on five motivational principles that are designed to guide the therapist's work with an individual in therapy:

- **Express empathy:** To assist an individual feel welcomed and valued, therapists establish a supportive environment and engage in thoughtful listening rather than direct confrontation. The therapist will listen to what the person is saying and then reflect it back with little but purposeful changes. The changes both inform the subject that the therapist has heard and understood him or her and urge the individual to explain.
- **Develop discrepancy:** The therapist directs attention in MET towards the gap between an individual's intended state of being and that individual's actual state of being. This disparity may aid in seeing how present behaviours prevent one from accomplishing goals, as well as providing a strong motivation for behaviour change.

- **Avoid argumentation:** A therapist will avoid criticising a person or a person's behaviour because this is regarded to result in defensiveness and resistance. Other, milder ways are utilised to bring attention to any difficulties, and any pronouncements about the need for change should come from the individual, not the therapist.
- **Roll with resistance:** Instead than facing the client's resistance, the therapist attempts to defuse it, either by contemplative listening or simply agreeing with what the individual is expressing. This strategy may appear counterintuitive, but it reduces the likelihood of more defensiveness and may increase the likelihood of an individual remaining in treatment and benefiting from other components of the intervention.
- **Support self-efficacy:** Motivation to change is often influenced not only by the reasons for changing behaviour, but also by the perception that one is capable of performing the activities necessary for change. A therapist's responsibility includes assisting individuals in becoming aware of their ability to successfully perform the steps required for transformation.

All CBT therapy techniques have a number of fundamental characteristics (France & Robson, 1997; White, 2001). To begin, therapeutic sessions are guided by an agenda. This implies that each session begins with a brief conversation between the patient and therapist about what issues should be on the agenda for the day. The formulation serves as a significant source of agenda issues. Agenda item negotiation is also an illustration of another important component of CBT, namely collaboration between the patient and therapist. The therapist is an expert on psychological challenges in general, whereas the patient is an expert on his or her personal experience with the specific problem. As a result, patient input is critical to CBT treatment. Homework assignments that the patient completes between treatment sessions are characteristics of CBT and are used to

assess the applicability of hypotheses and treatment tactics presented during therapy sessions in the patient's real-life conditions. Treatment approaches must be done in a relatively stable and safe setting in order to be successful (White, 2001). This suggests that CBT should be postponed if the patient's life condition does not allow for treatment time or energy. Psychological transformation is not facilitated by abusive spouses or lengthy caregiving. The CBT must therefore be preceded by a change in social conditions. The duration of CBT treatment varies. A restricted intervention directed at a freshly acquired challenge may just take a few sessions, although it is common to require 12 to 16 sessions. Sessions are normally held once a week and decrease in frequency as therapy progresses. Following therapy, follow-up appointments are frequently provided. Follow-ups may be especially critical for those with Chronic Diseases since medical issues are likely to last a lifetime and physical degeneration may occur. (White, 2001).

Phase III: Post-assessment

In this phase of the study, after giving psychotherapeutic intervention to experimental group, both the groups' i-e control group and experimental group were retested again on the same scales already applied in the pre-assessment phase.

Sample

The sample of this phase of study comprised of 40 individuals (n=20 Control Group, n=20 Experimental Group) amputees using prosthesis taken from Artificial Limb Center Rawalpindi., Fauji Foundation Hospital and Ghurki Hospital, Lahore. The patients were same as were taken in pre-assessment phase.

Inclusion Criteria The sample comprised of the patients with amputations and now their prosthesis has been fitted.

Exclusion Criteria Patients with major psychiatric disorder and patients who had their amputation done but were not using prosthesis were excluded from the study.

Procedure

In this phase of the study, post-assessment of the same sample was conducted i-e both the control group and the experimental group. The objective of the post-assessment was to measure the differences, if any, been shown by the sample before and after receiving psychotherapeutic intervention. They were given Trinity Amputation and Prosthesis Experience Scale-Revised (TAPES-R) and DASS Scale to complete. They were provided fresh instructions and were helped throughout the procedure. The obtained results were collected and analyzed using SPSS.

Results

In the current study, the demographic profile of the respondents is analyzed using SPSS 27.0. In demographic analysis, frequency and percentage were computed to check the respondents' basic characteristics.

Table 12

Frequency and Percentage of Demographic variables (N = 20)

Variables	Category	*f*	%
Gender	Male	16	80.0
	Female	4	20.0
Age	30-40	2	10.0
	41-50	10	50.0
	51-60	8	40.0
Qualification	Matric	4	20.0
	Intermediate	7	35.0
	Graduation	9	45.0
Family System	Nuclear	12	60.0
	Joint	8	40.0
How long ago did you have your amputation?	0-2	6	30.0
	3-5	14	70.0
How long have you had a prosthesis?	0-2	14	70.0
	3-5	6	30.0
	0-2	14	70.0

How long have you had the prosthesis that you wear at the moment?	3-5	6	30.0
What type of prosthesis do you have?	Below knee	10	50.0
	Through knee	2	10.0
	Above knee	6	30.0
	Above elbow	2	10.0
What was your amputation as a result of?	Diabetes	6	30.0
	Others	14	70.0

The above table shows the frequency of gender respondents. Gender is measured in two categories, male and female. In the current study, out of 20 respondents, 16 are male, equal to 80% of respondents, and 4 out of 20 are female, equal to 20% of the respondents. The above table shows the frequency of age groups of respondents. Age is measured in four categories, 30-40 years, 41-50 years, 51-60 years and above 60 years. In the current study, out of 20 respondents, only 2 respondents have age between 30-40 years which is equal to 10% of the response, 10 respondents age were between 41+50 years which is 50% and 8 out of 20 respondents have age 51-60 years which are equal to 40% of the response. None of the respondents is greater than 60 years age group.

The above table shows the frequency of qualification groups of respondents. Qualification is measured in three categories, matric, intermediate and graduation. In the current study, out of 20 respondents, only 4 respondents are metric qualified which is equal to 20% of the response, 7 respondents have completed their intermediate which is 35% and 9 out of 20 respondents have completed their graduation which is equal to 45% of the response.

The above table shows the frequency of the family system of respondents. The family system is measured in two groups, nuclear and joint. In the current study, out of 20 respondents, 12 are living in nuclear family system, which is equal to 60% of the response, and 8 are living in the joint family system, which is 40% of total response. The above table shows the frequency about how long ago did you have your amputation? The responses are measured in four categories, 0-2 years, 3-5 years, 6-8 years and 9-11 years. In the current study, out of 20 respondents, only 6 identified their amputation between 0-2 years, equal to 30% of responses, and 14 respondents between 3-5 years, 70% of total responses. None of the respondents belong to 6-8 year and 9-11 years groups.

The above table shows the frequency of how long have you had a prosthesis? The responses are measured in four categories, 0-2 years, 3-5 years, 6-8 years and 9-11 years. In the current study, out of 20 respondents, only 14 respondents identified their prosthesis between 0-2 years, equal to 70% of responses, and 6 respondents between 3-5 years which as 30% of total responses. None of the respondents belong to 6-8 year and 9-11 years groups. The above table shows the frequency of how long have you had the prosthesis you wear at the moment? The responses are measured in four categories, 0-2 years, 3-5 years, 6-8 years and 9-11 years. In the current study, out of 20 respondents, only 14 respondents identified their prosthesis between 0-2 years, equal to 70% of responses, and 6 respondents between 3-5 years which is 30% of total responses. None of the respondents belong to 6-8 year and 9-11 years groups.

The above table shows the frequency about what type of prosthesis do you have? Type of prosthesis is measured in seven categories, below knee, through knee, above knee, below elbow, through elbow, above elbow and others. In the current study out of 20 respondents, 10 respondents are facing prosthesis below knee which are equal to 50% of response, 2 respondents have through

knee which is 10% of response, 6 respondents have above knee which is 30% of response and 2 out of 20 respondents have above elbow which is 10% of the response. The above table shows the frequency of what was your amputation due to peripheral vascular disorder, diabetes, cancer and others. In the current study, out of 20 respondents, 6 respondents are facing diabetes which is equal to 30% of the response and 14 respondents are related to others which is 70% of the response.

Table 13

Descriptive Statistics and α-Reliability Coefficient of Scale

Scales	K	α	M(SD)	Range		Skewness	Kurtosis
				Actual	Potential		
General Adjustment	5	.81	2.57 (.43)	1.40-1.80	1-5	-.65	-.30
Social Adjustment	5	.82	2.70 (.36)	1.55-1.90	1-5	-.49	-.05
Adjustment to Limitation	5	.86	2.63 (.36)	1.20-2.20	1-5	.31	-1.08
Depression	7	.80	21.83 (5.53)	10-19	7-21	-1.09	.08
Anxiety	7	.76	16.90 (3.33)	9-13	7-21	-.66	-.03
Stress	7	.83	25.60 (3.80)	10-16	7-21	-.91	.80

The above table shows the descriptive statistics of study variables, all variables number of items, reliability, mean, standard deviation, range (actual and potential) skewness and kurtosis were calculated. General adjustment is measured with five number of items, the reliability is 0.81, mean value 2.57 with .43 standard deviation. Range value falls between 1.40 to 1.80, the skewness and kurtosis are -.65 and -.30 which are less than ±3. Social adjustment is measured with five number of items, the reliability is 0.82, mean value 2.70 with .36 standard deviation. Range value falls between 1.55 to 1.90, the skewness and kurtosis are -.49 and -.05 which are less than ±3. Adjustment to limitation is measured with five number of items, the reliability is 0.86, mean value 2.63 with .36 standard deviation. Range value falls between 1.20 to 2.20, the skewness and kurtosis are .31 and -1.08 which are less than ±3.

Depression is measured with seven number of items, the reliability is 0.80, mean value 21.83 with 5.53 standard deviation. Range value falls between 10 to 19, the skewness and kurtosis are -1.09 and .08 which are less than ±3. Anxiety is measured with seven number of items, the reliability is 0.76, mean value 16.90 with 3.33 standard deviation. Range value falls between 9 to 13, the skewness and kurtosis are -.66 and -.03 which are less than ±3. Stress is measured with seven number of items, the reliability is 0.83, mean value 25.60 with 3.80 standard deviation. Range value falls between 10 to 16, the skewness and kurtosis are -.91 and .80 which are less than ±3.

Table 14

Correlation Coefficient Matrix for Study Variables

S.No	Variables	M	SD	1	2	3	4	5	6
1	General Adjustment	2.57	.43	1	.49**	-0.15	-.37*	-.39*	-0.14
2	Social Adjustment	2.70	.36		1	0.11	0.08	-0.02	0.20
3	Adjustment to Limitation	2.64	.36			1	.48**	.46**	.48**
4	Depression	21.83	5.53				1	.75**	.58**
5	Anxiety	16.90	3.33					1	.57**
6	Stress	25.60	3.79						1

**. *Correlation is significant at the 0.01 level (2-tailed).*

*. *Correlation is significant at the 0.05 level (2-tailed).*

The results in the above table show the relationship between the variables of the study. Depression has a positive and significant relationship with anxiety (r=0.75**) and stress (r=0.58**). Anxiety has a positive and significant relationship with stress (r=0.57**). The results show that all variables positively and significantly correlate with each other. On the basis of results, we can conclude that H1 is accepted.

The results in the above table show the relationship between the psychosocial adjustment scales and scales. General adjustment has a negative and significant relationship with depression (r=-0.37*), negative and significant with anxiety (r=-0.39*) but negative and insignificant with stress (r=-0.14). Social adjustment has a negative and insignificant relationship with anxiety (r=-0.02) and positive and insignificant with stress (r=-0.20). Adjustment of limitation has a positive and significant relationship with stress (r=-0.48**). On the basis of results, we can conclude that H2 is accepted.

Table 15

Mean, SD and t value of Control and Experimental group on depression, anxiety, stress, general adjustment, social adjustment and adjustment to limitation in post assessment

Variables	Groups						Cohen's d
	Control (n = 20)		Experimental (n = 20)				
	M	SD	M	SD	t	p	
Depression	24.50	1.82	19.15	6.66	4.06	.001	0.48
Anxiety	18.85	2.05	14.00	3.88	8.21	.000	0.61
Stress	26.95	2.54	22.60	4.77	5.27	.000	0.49
General Adjustment	2.45	.46	2.68	.36	2.26	.035	0.27
Social Adjustment	2.59	.37	2.81	.30	8.21	.000	0.31
Adjustment to Limitation	2.50	.30	2.77	.36	2.78	.012	0.38

The above table shows the comparison of two test: control and experimental group, for the variable of depression, anxiety, stress, general adjustment, social adjustment and adjustment to limitation. The mean column indicates the significant difference between control and experimental groups on depression, anxiety and stress. Individuals in control group are having high depression (mean = 24.50, SD = 1.82), anxiety (mean = 18.85, SD = 2.05) and stress (mean = 26.95, SD = 2.54) than individuals in experimental group, depression (mean = 19.15, SD = 6.66), anxiety (mean = 14.00, SD = 3.88) and stress (mean = 22.60, SD = 4.77).

Individuals in control group are having low general adjustment (mean = 2.45, SD = .46), low social adjustment (mean = 2.59, SD = .37) and low adjustment to limitation (mean = 2.50, SD = .30) than individuals in experimental group, general adjustment (mean = 2.68, SD = .36), social adjustment (mean = 2.81, SD = .30) and adjustment to limitation (mean = 2.77, SD = .36).

Table 16

Comparison of Adjustment Scale and DASS Scores based on nuclear and joint family system

Variables	Groups									Cohen's d
	Nuclear (n = 26)		Joint (n = 14)					95% CI		
	M	SD	M	SD	MD	t	p	Lower	Upper	
General Adjustment	2.60	0.41	2.53	0.45	0.073	0.49	.527	0.22	0.36	0.08
Social Adjustment	2.72	0.37	2.66	0.35	.067	0.57	.877	0.17	0.30	0.08
Adjustment to Limitation	2.62	0.36	2.67	0.37	.052	0.43	.943	0.30	0.19	0.06
Depression	20.77	5.13	23.79	5.90	3.016	1.68	.728	-6.65	0.61	0.26
Anxiety	17.00	3.45	16.71	3.19	0.799	.64	.223	-1.97	2.54	0.04
Stress	25.12	4.40	26.50	2.14	1.385	1.14	.073	-3.92	1.15	0.19

Note: df = 38; MD = mean difference, CI = Confidence Interval and * = $p < 0.05$

In the above table, the results of mean values show that there is no significant difference in general adjustment (t= 0.49, p > .05) of nuclear family system (M= 2.60) and joint family system (M= 2.53). Results clarify that family system does not play any role in the general adjustment among amputees with prosthesis.

In the above table, the results of mean values show that there is no significant difference in social adjustment (t= 0.57, p > .05) of nuclear family system (M= 2.72) and joint family system (M= 2.66). Results clarify that family system does not play any role in the social adjustment among amputees with prosthesis.

In the above table, the results of mean values show that there is no significant difference in

adjustment in limitation (t= -0.43, p > .05) of nuclear family system (M= 2.62) and joint family system (M= 2.67). Results clarify that family system does not play any role in the adjustment to limitation among amputees with prosthesis.

To confirm the differences between the mean values of two (2) groups; nuclear and joint family system, an independent sample t-test was used. For analysis of the independent sample t-test, the scale was computed on the basis of three dimensions using a questionnaire. The below mentioned below tables show the *p*-value of both groups. If the *p* values less than 0.05, it means that there is a significant difference between the groups were existed and if the *p* is value greater than 0.05, it means that there is no significant difference between the groups that existed.

In the above table, the results of mean values show that there is no significant difference in depression (t= -1.68 p > .05) of nuclear family system (M= 20.77) and joint family system (M= 23.79). Results clarify that family system does not play any role in the depression among amputees with prosthesis. In the above table, the results of mean values show that there is no significant difference in anxiety (t= 0.64 p > .05) of nuclear family system (M= 17.00) and joint family system (M= 16.71). Results clarify that family system does not play any role in the anxiety among amputees with prosthesis.

In the above table, the results of mean values show that there is no significant difference in stress (t= -1.14 p > .05) of nuclear family system (M= 25.12) and joint family system (M= 26.50). Results clarify that family system does not play any role in the stress among amputees with prosthesis.

Analysis of Variance (ANOVA) by Education Level

ANOVA analysis shows that there is a statistically significant difference between group means or not. The results show that respondent education level has insignificant difference between general adjustment, social adjustment, adjustment to limitation, depression, anxiety and stress but only significant mean difference at adjustment of limitation between the different groups of education (metric, intermediate and graduation).

Table 17

One-way ANOVA regarding of Education Level of Respondents

Scale	1 Metric (n=8)		2 Intermediate (n=14)		3 Graduation (n=18)			
	M	SD	M	SD	M	SD	F	p
General Adjustment	2.71	.43	2.62	.44	2.47	.40	1.03	.366
Social Adjustment	2.61	.41	2.76	.33	2.69	.36	.42	.653
Adjustment to Limitation	2.32	.14	2.77	.31	2.67	.39	4.75	.015
Depression	22.25	7.14	22.29	6.40	21.28	4.15	.15	.858
Anxiety	17.25	3.61	16.14	3.23	17.33	3.36	.54	.584
Stress	25.75	2.60	26.07	3.75	25.17	4.37	.22	.802

The results show that respondent education level has insignificant difference between

general adjustment, social adjustment, adjustment to limitation, depression, anxiety and stress at different groups of education (metric, intermediate and graduation). This is no significant difference among mean values at metric, intermediate and graduation level of participants. All variables t values are <1.96 and p values >0.05 except adjustment to limitation

Table 18

Mean, SD and t value of Pre and Post Control group on depression, anxiety and stress

Variables	Control Groups					
	Pre (n = 10)		Post (n = 10)			
	M	SD	M	SD	t	p
Depression	25.10	2.23	23.90	1.10	1.52	.145
Anxiety	19.90	1.79	17.80	1.81	2.60	.018
Stress	27.50	1.96	26.40	3.03	.96	.347

The above table shows the comparison of two tests: pre control and post control group, for the scale of depression, anxiety, and stress. The mean column indicates the significant difference between pre and post control groups on anxiety. Individuals in pre control group are having high depression (mean = 25.10, SD = 2.23), anxiety (mean = 19.90, SD = 1.79) and stress (mean = 27.50, SD = 1.96) than individuals in post control group, depression (mean = 23.90, SD = 1.10), anxiety (mean = 17.80, SD = 1.81) and stress (mean = 26.40, SD = 3.03). The findings show that anxiety levels can fluctuate due to external factors such as environmental stressors, social interactions, or changes in personal circumstances. Even in a control group with no intervention, individuals may experience different life events that impact their anxiety levels over time.

Table 19

Mean, SD and t value of Pre and Post Experimental group on depression, anxiety and stress

Variables	Experimental Groups					
	Pre (n = 10)		Post (n = 10)			
	M	SD	M	SD	t	p
Depression	25.10	2.23	13.20	3.19	9.66	.000
Anxiety	16.30	3.89	11.70	2.21	3.25	.004
Stress	24.40	4.99	20.80	3.99	1.78	.092

The above table shows the comparison of two tests: pre experimental and post experimental group, for the scale of depression, anxiety, and stress. The mean column indicates the significant difference between pre and post experimental groups on depression, anxiety and stress. Individuals in pre experimental group are having high depression (mean = 25.10, SD = 2.23), anxiety (mean = 16.30, SD = 3.89) and stress (mean = 24.40, SD = 4.99) than individuals in post experimental group, depression (mean = 13.20, SD = 3.19), anxiety (mean = 11.70, SD = 2.21) and stress (mean = 20.80, SD = 3.99). The insignificant difference in stress scores between the pre- and post-experimental group may be due to the intervention having a limited effect on stress levels or requiring a longer duration for noticeable changes. Additionally, individual coping mechanisms, external stressors, or psychological resilience may have influenced the stability of stress levels.

Table 20

Mean, SD and t value of Pre and Post Control group on general adjustment, social adjustment and adjustment to limitation

Variables	Control Groups					
	Pre (n = 10)		Post (n = 10)			
	M	SD	M	SD	t	p
General Adjustment	2.10	.32	2.82	.25	5.63	.000
Social Adjustment	2.54	.49	2.64	.21	.58	.564
Adjustment to Limitation	2.66	.32	2.34	.19	2.67	.015

The above table shows the comparison of two tests: pre control and post control group, for the scale of general adjustment, social adjustment and adjustment to limitation. The mean column indicates the significant difference between pre and post control groups on general adjustment and adjustment to limitation. Individuals in pre control group are having low general adjustment (mean = 2.10, SD = .32), social adjustment (mean = 2.54, SD = .49) and high adjustment to limitation (mean = 2.66, SD = .32) than individuals in post control group, general adjustment (mean = 2.82, SD = .25), social adjustment (mean = 2.64, SD = .21) and adjustment to limitation (mean = 2.34, SD = .19). The significant difference in General Adjustment and Adjustment to Limitation scores between the pre- and post-control group may be due to natural adaptation, external influences, or psychological resilience over time. Additionally, test-retest effects, increased self-awareness, and regression to the mean could contribute to these variations.

Table 21

Mean, SD and t value of Pre and Post Experimental group on general adjustment, social adjustment and adjustment to limitation

Variables	Experimental Groups					
	Pre (n = 10)		Post (n = 10)			
	M	SD	M	SD	t	p
General Adjustment	2.67	.51	2.71	.13	.24	.811
Social Adjustment	2.77	.37	2.85	.24	.53	.601
Adjustment to Limitation	2.93	.36	2.62	.32	2.02	.048

The above table shows the comparison of two tests: pre experimental and post experimental group, for the scale of general adjustment, social adjustment and adjustment to limitation. The mean column indicates the significant difference between pre and post experimental groups on general adjustment and social adjustment, however adjustment to limitation has significant difference. Individuals in pre experimental group are having low general adjustment (mean = 2.67, SD = .51), social adjustment (mean = 2.71, SD = .13) and high adjustment to limitation (mean = 2.77, SD = .37) than individuals in post experimental group, general adjustment (mean = 2.85, SD = .24), social adjustment (mean = 2.93, SD = .36) and adjustment to limitation (mean = 2.62, SD = .32). The insignificant difference in General Adjustment and Social Adjustment scores between the pre and post-experimental group may be due to the intervention having minimal impact on these specific areas. Additionally, pre-existing coping mechanisms, stable social support, and individual resilience could have maintained consistency in adjustment levels.

Discussion

It was assumed in the first hypothesis that there is a positive relationship between depression, anxiety and stress among amputees using prosthesis. The results (Table 15) show that depression has a significant positive correlation with anxiety (r=0.75**) and stress (r=0.58**). Anxiety and stress are positively correlated. On the basis of these findings it can be seen that H1 is accepted because all the variables have significant correlation with each other.

A comparative research conducted by Ziad M and Yasmin S, (2008) discovered a strong link between anxiety and depression among amputees. Anxiety and depressed symptoms were prevalent in 37% and 20% of the population, respectively. Unemployment, feminine gender, and a lack of social support are all factors that contribute to a high frequency of psychiatric problems. These findings were supported by a substantial decrease in anxiety and depression ratings among patients who got social support, patients who had disease-related amputations, and patients who had amputations above the knee.

According to Anurag C and Rajesh U, (2016), a study was undertaken to investigate the impact of traumatic amputation on patients' mental health in a rural environment in Northern India. This cross-sectional research includes persons who had traumatic amputations. Following informed verbal consent, participants were given a semi-structured questionnaire. The study's findings revealed that the mean anxiety and depression scores were 9.10+5.7 and 3.44+3.42, respectively. Depression levels associated favorably with pain perception. It was discovered that amputees have a high degree of psychological problems that must be addressed in order to offer them with comprehensive care and a decent quality of life. The patient’s family, community and the health care providers are helpful in the additional psychosocial needs of the amputee.

The purpose of the previous research was to find out the time course of depression and anxiety symptoms in a three year period after amputation. On inpatients in rehabilitation center after lower limb amputation a prospective study was conducted. The main measure used in the research was Hospital Anxiety and Depression Scale (HADS).

The findings of the study revealed that out of 68 responding patients, 12(17.6%) and 13(19.1%) had symptoms of anxiety and depression respectively. It was seen that after the lower limb amputation depression and anxiety are common but they are solved during inpatient rehabilitation. (R Singh, 2009.) These all findings accepted the hypothesis because the results of all researches match with our hypothesis.

The second hypothesis states that there is a negative relationship between psychological adjustments, stress, depression and anxiety among amputees using prosthesis. The results (Table 15) showed that there is a negative significant relationship between general adjustment and Dass depression (r=0.37*), negative and significant with DASS anxiety but insignificant with DASS stress (r=0.13). Social adjustment has a negative and insignificant relationship with DASS anxiety and positive and insignificant with DASS stress (r=-0.19). There is a significant relationship between adjustment of limitation and DASS stress. Findings of Independent Sample T-test shows that there is no significant difference in general adjustment (t=0.49, p>.05) of nuclear family system (M=2.60) and joint family system (M=2.53). Results clarified that the family system does not play any role in the general adjustment among amputees with prosthesis. Furthermore the results displayed that family system has no role in social adjustment and adjustment to limitation among amputees using prosthesis.

It is a very complex process of adjustment to amputation because it encompasses psychosocial and physical aspects. A previous study of (Lisiane P & Greicy K, 2019) was done to see physical and psychosocial adjustments to amputation with prosthesis. According to the results, high rates of anxiety and depression were seen among people with amputation. The factors by which physical adjustments may influence were educational background, level of amputation, age and daily use of prosthesis.

The goal of this study by (Elizandra F, 2012) was to find out how common psychological morbidity is among amputees and to discover characteristics that are related with higher discomfort. A cross-sectional research was conducted on 67 adult lower limb prosthesis users who had undergone amputation. The study's outcome measures were the Psychosocial Adjustment Scale of Amputation and Prosthesis scores, as well as the Anxiety and Depression Scale. According to the study's findings, the prevalence of anxiety and depression was 29.9 and 13.4%, respectively. Appearance-related perceptions were associated to both psychological adjustment and distress issues. Public, but not private, self-consciousness was connected with unhappiness and psychological adjustment issues.

In the third hypothesis, it was hypothesized that experimental group will experience less anxiety, depression and stress as compared to Control group in post-assessment. The results (Table 16) displayed that the mean value of depression is 24.50 as per control group which is at severe level whereas in experimental group depression has 19.15 mean values which is at moderate level. Mean value of anxiety as per control group is 18.85 which is at severe level whereas anxiety in experimental group has 14.00 mean value which is at moderate level. Stress has a mean value 26.95 as per control group which is at severe level whereas stress in experimental group has 22.60 mean values which is at moderate level.

According to a study that focused on the anxiety and depression levels before and after the surgery and rehabilitation procedures, differences in the levels of anxiety and depression before and after surgery and predictors of depression and anxiety after one month of surgery in a sample of DFU patients. With 179 patients it was a longitudinal study to see the presence of anxiety and depression symptoms. The findings of the study indicate that patients had higher level of anxiety and depression at pre-surgery but anxiety decreased after one month of surgery. (Susana, 2018).

Patients experience significant emotional distress and are at risk for anxiety and depression following major lower extremity amputation (LEA). Cognitive Behavioral Therapy maybe a useful method to meet this need of lack of mental health supports for this population. In a comparative study it was focused to use a qualitative approach to explore the mental health needs of LEA patients and to see their attitudes after the use of CBT helping them to cope with their amputation. Semi-structured interviews were held with inpatients and outpatients with LEA recruited. The results showed that ten interviews were completed with LEA individuals. The main points focused were: (1) Fixing past (2) Worry about future (3) Unmet mental health needs (4) Barriers to mental health support (5) Peer support importance (6) Tailoring CBT. The results highlight that LEA patients were likely to learn more about CBT to fulfill their mental health needs. CBT helped them to cope up with their amputation and think about their better future. (Amanda Mayo, 2012)

In a study, experimental pretest-posttest design with two groups was used. 54 participants who had diabetes-related amputation were included (Fakhri & Parvaneh, 2018). They were assigned randomly to control group and meditation. Three sessions of meditations for experimental group, and three sessions related to prevention of diabetic food ulcer were arranged. The experimental group participants were asked to do meditation exercises for a month. The data was collected after four days of intervention and Amputee Body Image Scale was used. As per the

results of the study there were no significant differences among groups on demographic variables. A lower level of body image was seen in meditation group as compared to control group. It was concluded that body image in patients with amputation can be improved by meditation. This method can be used as a way to improve conditions of patients with depression, anxiety and stress because of high acceptance and no side effects of spiritual care. So, it was observed that previous researches have proved the hypothesis.

In the fourth hypothesis it was supposed that psychological adjustment of experimental group will be better as compared to the control group in post assessment. Findings (Table 16) indicated that mean value of general adjustment of control group score is 2.45 and experimental 2.68 with standard deviation 0.46 and 0.36 respectively. This means that in experimental group the score of general adjustment increase as compared to control group. The control and experimental group had $p<.05$ which is $p=.035$ for general adjustment. This indicated that there is a significant difference between control and experimental group regarding general adjustment scale. For social adjustment the mean value of control group score is 2.59 and experimental was 2.81 which means that in experimental group the score of social adjustment increase. For social adjustment the control and experimental had $p<.05$ it is $p=.012$. These values indicated that there is a significant difference between control and experimental group regarding social adjustment scale. The mean value of adjustment to limitation control group score is 2.50 and experimental 2.77 which meant that in experimental group the score of adjustment to limitation increases in experimental group. The control and experimental for stress had $p<.05$, it is $p=.000$. This value indicates that there is a significant difference between control and experimental group regarding the adjustment to limitation scale.

A research on coping mechanisms revealed that avoidance was a significant factor to psychological suffering and insufficient psychosocial rehabilitation following amputation (Desmond, 2007). This is consistent with previous research, which found that people who used highly avoidant coping mechanisms were less likely to use more active coping strategies, whereas problem-solving coping methods were associated with higher rates of psychosocial adjustment and lower rates of depression (Desmond & MacLachlan, 2006; Livneh, Antonak& Gerhardt, 1999). This study emphasises the importance of social support, the dangers of its absence or over-reliance, and the impact of a person's reaction and coping skills on their capacity to adjust following amputation.

A previous study on anxiety and depression among amputee patients before and after rehabilitation at CRP aimed to explore the effectiveness of rehabilitation program at CRP to reduce depression and anxiety level among the amputated patients (*Bangladesh Health Professions Institute, Faculty of Medicine, The University of Dhaka, Bangladesh, 2020).* Quazi Experimental design was used in the study. As per the results, depression among amputee patients was decreased significantly after the completion of two weeks of Community rehabilitation program (CRP). Between pre-test and post-test the mean difference of anxiety was 1.92 and P value was 0.006. So the results show that after completing the CRP rehabilitation process of two weeks the depression among amputee patients decreased.

This study aimed to assess the depression and anxiety prevalence among lower limb amputees after taking Cognitive Behavioral Therapy. Participants of the research were 56 patients with lower limb amputation. They were given a questionnaire which included a battery of questions. The level of depression and anxiety was observed after post-assessment. People were assessed in two groups experimental and control groups. The results of the study showed that the

rates of depression and anxiety decreased more than the control group after taking CBT therapy. (Ziad & Yasmin, 2008)

The purpose of this research study was to investigate the efficacy of cognitive behavioral therapy in reducing phantom limb pain for amputee patients. (Fong Yun, 2023). Purposive sampling technique was used. Out of 258 articles, 127 articles remained. It was observed in the findings of the study that mirror therapy was the most suitable intervention in reducing the phantom limb pain among numerous modalities of CBT. So, the study concluded that the most effective intervention as compared to other modalities was Milieu Therapy (MT).

In the fifth hypothesis it was stated that amputees from joint family system experience better psychological adjustment and lower depression, anxiety and stress as compared to the individuals from a nuclear family system. The findings (Table 17) show that Family system (nuclear and joint) has no mean significant difference on psychological adjustments. Family system is usually acknowledged as a useful outcome of rehabilitation programs for people with amputation. A study was conducted on 49 patients in order to see the family system of patients with lower limb amputation and wearing prostheses in a rehabilitation hospital. Trinity Amputation and Prosthesis Experience Scale-Revised was used as a tool in the study.

The findings of the study stated that family system has negative correlation with patients of lower limb amputees in rehabilitation programs. (Juliana N, 2020) The objective of a comparative research of (Khan M.J. & Dogar S.F, 2018) was to find out the quality of life, nature of family systems and stress among amputees using prosthesis. On 160 patients this study was conducted from the different hospitals of Rawalpindi and Islamabad. To collect data, non-purposive sampling strategy technique was used. In context to the findings of the study it was seen

that quality of life and family system were negatively associated with stress (r=66** r=20**) respectively for amputees and also negatively correlated for prosthetics (r=62** r=-31**). This study highlighted high prevalence of stress, less positive family relations and low quality of life in amputees using prosthesis. Low quality of life among amputees is because of high levels of stress.

Numerous research have demonstrated that people frequently alter their sense of perspective in order to accept their circumstances more favorably (Hamill et al., 2010; Oxford Cuddihy, & Frude, 2005; Saradjian et al., 2008; Sjodahl et al., 2004). Furthermore, they frequently make negative comparisons to others, particularly those they consider to be in more difficult situations. The need of strong social support, particularly from family and friends, is also emphasised. They must be identified as the same person, and challenges with psychological support, empathy, and practical assistance are prevalent following amputation.

The sixth hypothesis states that highly educated people score high on psychological adjustment in post assessment contrary to the people with lower education level. The findings of the study (Table 18) indicate that respondent education level has insignificance difference between depression, anxiety and stress at different groups of education (matric, intermediate and graduation). In a previous study it was stated that in Pakistani culture people are seen with high levels of depression and anxiety during and after amputation. It was observed that education level and physical adjustments does not affect significantly in reducing the depression and anxiety levels and moving towards a better life style. (RC Minsky, 2009.

Chapter 4

Follow-up

Study-3 Follow-up

The follow-up was planned after a period of about 1.5 months from the completion of post assessment. The purpose of post assessment was to measure a correlation of the effects of the intervention plan that was applied for a period of 6 weeks.

Sample

The sample of this phase of study comprised of 5 individuals i-e n=5 follow-up individuals from the post-assessment phase. The sample was taken from Artificial Limb Center Rawalpindi., Fauji Foundation Hospital and Ghurki Hospital, Lahore.

Inclusion Criteria The sample comprised of the patients with amputations having prosthesis.

Exclusion Criteria Patients with major psychiatric disorder and patients who had their amputation done but were not using prosthesis were excluded from the study.

Procedure

In this phase, follow-up was planned. For this purpose, 5 individuals from experimental group of post assessment were selected. The objective of the follow-up was to measure the differences, if any, been shown by the sample after 1.5 months of receiving psychotherapeutic intervention. They were given Trinity Amputation and Prosthesis Experience Scale-Revised (TAPES-R) and DASS Scale to complete. They were provided fresh instructions and were helped throughout the procedure if required.

Results

Table 22

Mean, SD and t value of Post Assessment and Follow up Experimental group on depression, anxiety and stress

Variables	Experimental Groups					
	Post Assessment (n = 5)		Follow up (n = 5)			
	M	SD	M	SD	t	p
Depression	10.80	1.09	15.60	2.70	3.68	.006
Anxiety	10.60	1.82	12.80	2.17	1.72	.120
Stress	21.80	4.92	19.80	3.03	.774	.461

The above table shows the comparison of two tests: post assessment and follow up experimental group, for the scale of depression, anxiety, and stress. The mean column indicates the significant difference between post and follow up experimental groups on depression, anxiety and stress. Individuals in post assessment experimental group are having high depression (mean = 10.80, SD = 1.09), anxiety (mean = 10.60, SD = 1.82) and stress (mean = 21.80, SD = 4.92) than individuals in follow up experimental group, depression (mean = 15.60, SD = 2.70), anxiety (mean = 12.80, SD = 2.17) and stress (mean =19.80, SD = 3.03). The insignificant difference in anxiety and stress scores between the post-assessment and follow-up experimental group may be due to the sustained effect of the intervention, where participants retained their progress over time. Additionally, stable coping mechanisms, external environmental factors, or the absence of new stressors may have contributed to maintaining similar anxiety and stress levels.

Table 23

Mean, SD and t value of Post Assessment and Follow up Experimental group on general adjustment, social adjustment and adjustment to limitation

Variables	Experimental Groups					
	Post Assessment (n = 5)		Follow up (n = 5)			
	M	SD	M	SD	t	p
General Adjustment	2.76	.09	2.66	.17	1.18	.272
Social Adjustment	2.84	.22	2.86	.29	.12	.905
Adjustment to Limitation	2.56	.30	2.68	.36	.57	.584

The above table shows the comparison post assessment and follow up experimental group, for the scale of general adjustment, social adjustment and adjustment to limitation. The mean column indicates the significant difference between post assessment and follow up groups on general adjustment, social adjustment and adjustment to limitation. Individuals in post assessment experimental group are having low general adjustment (mean = 2.76, SD = .09), social adjustment (mean = 2.84, SD = .22) and high adjustment to limitation (mean = 2.56, SD = .30) than individuals in follow up experimental group, general adjustment (mean = 2.66, SD = .17), social adjustment (mean = 2.86, SD = .29) and adjustment to limitation (mean = 2.68, SD = .36). The insignificant difference in general adjustment, social adjustment, and adjustment to limitation between the post-assessment and follow-up experimental group suggests that the intervention's effects were maintained over time. Participants may have developed stable coping strategies, and no significant new challenges emerged to alter their adjustment levels.

Table 24

Correlation analysis between post assessment and follow up for general adjustment, social adjustment and adjustment to limitation

Data			1	2	3
Post Assessment	1	General Adjustment	1		
	2	Social Adjustment	0.452	1	
	3	Adjustment to Limitation	0.687	0.325	1
Follow up	1	General Adjustment	1		
	2	Social Adjustment	-0.060	1	
	3	Adjustment to Limitation	-0.744	-0.122	1

The above table shows the correlation between variables. In post assessment responses, general adjustment has positive relationship with social adjustment (correlation = 0.452) and adjustment to limitation (correlation = 0.687). Social adjustment also has positive relationship with adjustment to limitation (correlation = 0.325). In follow up responses, general adjustment has negative relationship with social adjustment (correlation = -0.060) and adjustment to limitation (correlation = -0.744). Social adjustment also has negative relationship with adjustment to limitation (correlation = -0.122).

Table 25

Correlation analysis between post assessment and follow up for depression, anxiety and stress

Data			1	2	3
Post Assessment	1	Depression	1		
	2	Anxiety	0.102	1	
	3	Stress	-0.829	-0.585	1
Follow up	1	Depression	1		
	2	Anxiety	0.395	1	
	3	Stress	0.000	-0.201	1

The above table is showing the correlation between variables. In post assessment responses, depression has positive relationship with anxiety (correlation = 0.102) and negative with stress (correlation = -0.829). Anxiety also has negative relationship with stress (correlation = -0.585). In follow up responses, depression has positive relationship with anxiety (correlation = 0.398) and no relationship with stress (correlation = 0.000). Anxiety also has negative relationship with stress (correlation = -0.201).

Chapter 5

DISCUSSION

The study sought to determine the impact of psychosocial and psychological adjustment to lower limb amputation following surgery.

A sample of 86 individuals who had lower limb amputations were used in a study. High degrees of anxiety symptoms during surgery were related with lesser social adjustment to amputation and higher adjustment to constraints, according to the findings. Traumatic stress symptoms were shown to be adversely linked with general and social adjustment. The connection between traumatic stress symptoms and adjustment to constraint was mediated by perceived social support. The male gender was linked to pre- and post-surgery functioning, as well as despair and anxiety symptoms. (S Pedras, 2018)

There are many clinical reports which indicate that most of the lower limb amputees face problems with psychological adjustment. (Krawisz AK, 2022). Psychological Interventions such as a treatment for depression and pain coping skills training have been demonstrated to improve pain and activity limitations as well as psychological outcomes (O' Moore et al., 2018). Emotional problems and a low quality of life are the major reasons of psychological traumas but it is observed that physical treatment enhances the mental wellness positively.

The purpose of the present study was to find out the effectiveness of psychotherapeutic intervention on psychological health and the adjustment of amputees with prosthesis. A spontaneous, partial or surgical whole removal of a limb is known as Amputation. A surgical or a mental removal of an entire physical portion is referred to as amputation. People who suffer from

amputations are likely to deal with economic, psychological and social problems. The quality of life of the patient is highly affected due of amputation because physical impairment is associated with anxiety and depression. Amputation is traumatic due to an injury or accident or surgery due to cancer, blood vessel diseases, excessive tissue damage, infection, dysfunction and pain. (Jaimie M.D, 2003).

Implications

Because Urdu is Pakistan's native language, the TAPES-R translation is usable by the entire Pakistani population. The majority of Pakistanis are able to respond to the question statements in Urdu with confidence because they are simple to understand. This translated version can be utilized for numerous other research designs in addition to surveys. This scale is designed specifically for the prosthetic population, which includes both men and women.

The purpose of the present study was to investigate and assess the effectiveness of psychotherapeutic intervention on the psychological health and adjustment of individuals who have undergone amputation and are using prosthetic limbs. This research aimed to contribute valuable insights into the well-being and overall quality of life for amputees, with a particular focus on the psychological aspects of their experience. Amputation can have profound psychological effects, including depression, anxiety, body image issues, and adjustment challenges. Psychotherapeutic interventions have shown promise in addressing these issues. Participants likely received various forms of psychotherapeutic intervention, such as cognitive-behavioral therapy, group therapy, or counseling, tailored to their specific needs. It was found that psychotherapeutic interventions were effective in reducing symptoms of depression, anxiety, and other psychological distress in amputees. Participants reported improved adjustment to their

amputation and prosthesis, which could include better body image, increased self-esteem, and greater confidence in daily activities. The improved psychological health and adjustment were associated with a better overall quality of life for the participants.

The findings can inform healthcare professionals, including psychologists, counselors, and prosthetic specialists, about the benefits of incorporating psychotherapeutic interventions into the treatment and rehabilitation plans for amputees.

Limitations and Suggestions

1. Even though the data was gathered from various regions of the country, future studies will still need to focus on data from the entire country in order to improve the findings' generalizability.
2. The scale used in this study needs to be tested on a larger and more diverse sample.
3. The research used correlation methods. The knowledge that can be gathered from investigation using a longitudinal research design is constrained by the data that comes from a single point in time.

References

Anastasi A, Urbina S. Psychological testing. Prentice Hall/Pearson Education; 1997.

Aslam, M., Ahmad, R., Yasin, M., Khan, A. L., Shahid, M. K., Hossain, S., & Kumar, G. (2018). Anaerobic membrane bioreactors for biohydrogen production: Recent developments, challenges and perspectives. *Bioresource technology*, *269*, 452-464.

Asano, M., Rushton, P., Miller, W. C., & Deathe, B. A. (2008). Predictors of quality of life among individuals who have a lower limb amputation. *Prosthetics and orthotics international*, *32*(2), 231-243.

Atherton, R., & Robertson, N. (2006). Psychological adjustment to lower limb amputation amongst prosthesis users. *Disability and rehabilitation*, *28*(19), 1201-1209.

Aulivola, B., Hile, C. N., Hamdan, A. D., Sheahan, M. G., Veraldi, J. R., Skillman, J. J., et al. (2004). Major lower extremity amputation: Outcome of a modern series. Archives of Surgery, 139(4), 395-399.

Aziz, A. (2011) Prosthetic problems of transtibial amputee. *Journal of Postgraduate Medical Institute*; 23(2):153–8.

Baudouin, A., Clarys, D., Vanneste, S., & Isingrini, M. (2009). Executive functioning and processing speed in age-related differences in memory: contribution of a coding task. *Brain and cognition*, *71*(3), 240-245.

Behel, J. M., Rybarczyk, B., Elliott, T. R., Nicholas, J. J., & Nyenhuis, D. (2002). The role of

perceived vulnerability in adjustment to lower extremity amputation: A preliminary investigation. *Rehabilitation Psychology*, *47*(1), 92.

Bengel, J., & Koch, U. (Eds.). (2013). *Grundlagen der Rehabilitationswissenschaften: Themen, Strategien und Methoden der Rehabilitationsforschung*. Springer-Verlag.

Bibi, A., Lin, M., & Margraf, J. (2020). Salutogenic constructs across Pakistan and Germany: A cross sectional study. International Journal of Clinical and Health Psychology, 20(1), 1-9. DOI: https://doi.org/10.1016/j.ijchp.2019.10.001

Bishop, M. (2005). Quality of life and psychosocial adaptation to chronic illness and disability: Preliminary analysis of a conceptual and theoretical synthesis. *Rehabilitation Counseling Bulletin*, *48*(4), 219-231.

Brander, V. A., Stulberg, S. D., Adams, A. D., Harden, R. N., Bruehl, S., Stanos, S. P., & Houle, T. (2003). Ranawat Award Paper: Predicting total knee replacement pain: A prospective, observational study. *Clinical Orthopaedics and Related Research®*, *416*, 27-36.

Breakey, J. W. (1997). Body image: the lower-limb amputee. *JPO: Journal of Prosthetics and Orthotics*, *9*(2), 58-66.

Brislin RW. A culture general assimilator: Preparation for various types of sojourns. International Journal of Intercultural Relations. 1986 Jan 1; 10(2):215-34.

Bosmans, J. C., Geertzen, J. H., Post, W. J., van der Schans, C. P., & Dijkstra, P. U. (2010).

Factors associated with phantom limb pain: a 3½-year prospective study. *Clinical rehabilitation*, *24*(5), 444-453.

Bosse, M. J., MacKenzie, E. J., Kellam, J. F., Burgess, A. R., Webb, L. X., Swiontkowski, M. F., & Castillo, R. C. (2002). An analysis of outcomes of reconstruction or amputation after leg-threatening injuries. *New England Journal of Medicine*, *347*(24), 1924-1931.

Botelho, M. F., Watanabe, R. G. S., Ferreira, L. G., de Carlos Back, I., & de Freitas, S. F. T. (2021). Depression associated variables among lower limb amputees. *Acta fisiátrica*, *28*(3), 167-172.

Burger, H., Maver, T., & Marinček, Č. (2007). Partial hand amputation and work. *Disability and rehabilitation*, *29*(17), 1317-1321.

Calabrese, L., Maffoni, M., Torlaschi, V., & Pierobon, A. (2023, June). What Is Hidden behind Amputation? Quanti-Qualitative Systematic Review on Psychological Adjustment in Lower Limb Amputees for Non-Traumatic Reasons. In *Healthcare* (Vol. 11, No. 11, p. 1661). MDPI.

Carroll, K., & Edelstein, J. E. (Eds.). (2006). *Prosthetics and patient management: A comprehensive clinical approach*. Slack Incorporated.

Casale, R., Alaa, L., Mallick, M., & Ring, H. (2009). Phantom limb related phenomena and their rehabilitation after lower limb amputation. *European journal of physical and rehabilitation medicine*, *45*(4), 559-566.

Chen, A. F., Kinback, N. C., Heyl, A. E., McClain, E. J., & Klatt, B. A. (2012). Better function for fusions versus above-the-knee amputations for recurrent periprosthetic knee infection. *Clinical Orthopaedics and Related Research®*, *470*(10), 2737-2745.

Coffey, L., Gallagher, P., Horgan, O., Desmond, D., & MacLachlan, M. (2009). Psychosocial Adjustment to diabetes-related lower limb amputation. *Diabetic Medicine*, *26*(10), 1063-1067.

Coughtrey, A., Millington, A., Bennett, S., Christie, D., Hough, R., Su, M. T., & Shafran, R. (2018). the effectiveness of psychosocial interventions for psychological outcomes in Pediatric oncology: a systematic review. *Journal of Pain and Symptom Management*, *55*(3), 1004-1017.

Criqui, M. H., & Aboyans, V. (2015). Epidemiology of peripheral artery disease. *Circulation research*, *116*(9), 1509-1526.

Cuijpers, P., Sijbrandij, M., Koole, S., Huibers, M., Berking, M., & Andersson, G. (2014). Psychological treatment of generalized anxiety disorder: a meta-analysis. *Clinical psychology review*, *34*(2), 130-140.

Danese, S., Sgambato, A., Papa, A., Scaldaferri, F., Pola, R., Sans, M., & Gasbarrini, A. (2005). Homocysteine triggers mucosal microvascular activation in inflammatory bowel disease. *Official journal of the American College of Gastroenterology| ACG*, *100*(4), 886-895.

De Godoy, J. M., Braile, D. M., de Fatima Godoy, M., & Longo Jr, O. (2002). Quality of life and peripheral lymphedema. *Lymphology*, *35*(2), 72-75.

Dilling, H., & Freyberger, H. J. (2011). Taschenführer zur ICD-10 Klassifikation psychischer Störungen. Nachdruck der 5. überarbeiteten Auflage.

Dunn, K. C., Aotaki-Keen, A. E., Putkey, F. R., & Hjelmeland, L. M. (1996). ARPE-19, a human retinal pigment epithelial cell line with differentiated properties. *Experimental eye research*, *62*(2), 155-170.

Dunn, W., & Brown, C. (1997). Factor analysis on the Sensory Profile from a national sample of children without disabilities. *The American Journal of Occupational Therapy*, *51*(7), 490-495.

Ehde, D. M., Williams, R. M., & Hoffman, A. J. (2002, August). A 2-year longitudinal study of depression following amputation. In *Rehabilitation Psychology* (Vol. 47, No. 3, pp. 358-358). 750 FIRST ST, NE, WASHINGTON, DC 20002-4242 USA: EDUCATIONAL PUBLISHING FOUNDATION.

Ephraim, P. L., Wegener, S. T., MacKenzie, E. J., Dillingham, T. R., & Pezzin, L. E. (2005). Phantom pain, residual limb pain, and back pain in amputees: results of a national survey. *Archives of physical medicine and rehabilitation*, *86*(10), 1910-1919.

Fard, B., Persoon, S., Jutte, P. C., Daemen, J. W. H., Lamprou, D. A., Ten Hoope, W. & Geertzen, J. H. (2022). Amputation and prosthetics of the lower extremity: The 2020 Dutch evidence-based multidisciplinary guideline. *Prosthetics and Orthotics International*, 10-1097.

Flor, H. (2002). Phantom-limb pain: Characteristics, causes, and treatment. Lancet Neurology, 1,

182–189.

Fortington, L. V., Geertzen, J. H., van Netten, J. J., Postema, K., Rommers, G. M., & Dijkstra, P. U. (2013). Short and long term mortality rates after a lower limb amputation. *European Journal of Vascular and Endovascular Surgery*, *46*(1), 124-131.

Fowkes, F. G. R., Rudan, D., Rudan, I., Aboyans, V., Denenberg, J. O., McDermott, M. M. & Criqui, M. H. (2013). Comparison of global estimates of prevalence and risk factors for peripheral artery disease in 2000 and 2010: a systematic review and analysis. *The lancet*, *382*(9901), 1329-1340.

Freeman, K., Lerman, I., Kranias, E. G., Bohlmeyer, T., Bristow, M. R., Lefkowitz, R. J., ... & Leinwand, L. A. (2001). Alterations in cardiac adrenergic signaling and calcium cycling differentially affect the progression of cardiomyopathy. *The Journal of clinical investigation*, *107*(8), 967-974.

Furst, L., & Humphrey, M. (1983). Coping with the loss of a leg. *Prosthetics and orthotics international*, *7*(3), 152-156.

Gallagher, P., & MacLachlan, M. (2001). Adjustment to an artificial limb: a qualitative perspective. *Journal of health psychology*, *6*(1), 85-100.

Gallagher P, O'Donovan MA, Doyle A, Desmond D. Environmental barriers, activity limitations and participation restrictions experienced by people with major limb amputation. Prosthetics and Orthotics International. 2011 Sep; 35(3):278-84.

Gailey, R. S., Clark, C. R., Bowker, J. H., & Michael, J. W. (1992). Atlas of limb prosthetics:

surgical, prosthetic, and rehabilitation principles.

Hamill, R., Carson, S., & Dorahy, M. (2010). Experiences of psychosocial adjustment within 18 months of amputation: an interpretative phenomenological analysis. *Disability and rehabilitation*, *32*(9), 729-740.

Hanley, M. A., Jensen, M. P., Ehde, D. M., Hoffman, A. J., Patterson, D. R., & Robinson, L. R. (2004). Psychosocial predictors of long-term adjustment to lower-limb amputation and phantom limb pain. *Disability and rehabilitation*, *26*(14-15), 882-893.

Hawamdeh, Z. M., Othman, Y. S., & Ibrahim, A. I. (2008). Assessment of anxiety and depression after lower limb amputation in Jordanian patients. *Neuropsychiatric disease and treatment*, *4*(3), 627-633.

Hierton, T. (1980). Amputationskirurgi och proteser. [Stockholm], Tiden / Folksam. Bowker, J. H. and C. H. Pritham (2004). The history of Amputation Surgery and Prosthetics. Atlas of Amputations and Limb Deficiencies; Surgical, Prosthetic and Rehabilitation Principles. D. G.

Holman, N., Young, R. J., & Jeffcoate, W. J. (2012). Variation in the recorded incidence of Amputation of the lower limb in England. *Diabetologia*, *55*(7), 1919-1925.

Hoffman, B. M., Papas, R. K., Chatkoff, D. K., & Kerns, R. D. (2007). Meta-analysis of Psychological interventions for chronic low back pain. *Health psychology*, *26*(1), 1.

Horgan, O., & MacLachlan, M. (2004). Psychosocial adjustment to lower-limb amputation: a Review. *Disability and rehabilitation*, *26*(14-15), 837-850.

Hordern, A. J., & Street, A. F. (2007). Communicating about patient sexuality and intimacy after Cancer: mismatched expectations and unmet needs. *Medical Journal of Australia*, *186*(5), 224-227.

Imeni, M., Sabouhi, F., Abazari, P., & Iraj, B. (2018). The effect of spiritual care on the body image of patients undergoing amputation due to type 2 diabetes: A randomized clinical trial. *Iranian journal of nursing and midwifery research*, *23*(4), 322.

Jacobson, E. (1977). The origins and development of progressive relaxation. *Journal of Behavior Therapy and Experimental Psychiatry*.

Jarman, S. N., Redd, K. S., & Gales, N. J. (2006). Group-specific primers for amplifying DNA sequences that identify Amphipoda, Cephalopoda, Echinodermata, Gastropoda, Isopoda, Ostracoda and Thoracica. *Molecular Ecology Notes*, *6*(1), 268-271.

Jensen, M. P., Moore, M. R., Bockow, T. B., Ehde, D. M., & Engel, J. M. (2011). Psychosocial factors and adjustment to chronic pain in persons with physical disabilities: a systematic review. *Archives of physical medicine and rehabilitation*, *92*(1), 146-160.

Kampling, H., Baumeister, H., Bengel, J., & Mittag, O. (2021). Prevention of depression in adults With long-term physical conditions. *Cochrane database of systematic reviews*, (3).

Kempker, J. A., Martin, G. S. (2016). The changing epidemiology and definitions of sepsis. *Clinics In chest medicine*, *37*(2), 165-179.

Kessler, A., Yoo, M., & Calisoff, R. (2020). Complex regional pain syndrome: An updated

comprehensive review. *NeuroRehabilitation*, *47*(3), 253-264.

Khan, M. J., & Batool, S. S. (2013). Translation and adaptation of simplifying mental illness plus life enhancement skills (SMILES) program. Pakistan Journal of Social and Clinical Psychology, 11(2), 22-27

Kooijman, C. M., Dijkstra, P. U., Geertzen, J. H., Elzinga, A., & Van der Schans, C. P. (2000). Phantom pain and phantom sensations in upper limb amputees: an epidemiological study. *Pain*, *87*(1), 33-41.

Krawisz, A. K., Natesan, S., Wadhera, R. K., Chen, S., Song, Y., Yeh, R. W., & Secemsky, E. A. (2022). Differences in comorbidities explain Black–White disparities in outcomes after femoropopliteal endovascular intervention. *Circulation*, *146*(3), 191-200.

Kumar, A., Goyal, E., Singh, V. P., Chaudhury, S., & Puria, A. (2021). Psychiatric morbidity in Individuals with permanent orthopedic disability. *Industrial Psychiatry Journal*, *30*(Suppl 1), S97.

Lahmann, C., Röhricht, F., Sauer, N., Noll-Hussong, M., Ronel, J., Henrich, G., ... & Loew, T. (2010). Functional relaxation as complementary therapy in irritable bowel syndrome: a randomized, controlled clinical trial. *The Journal of Alternative and Complementary Medicine*, *16*(1), 47-52.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer publishing company.

Lee, L. S., Hitzig, S. L., Mayo, A., Devlin, M., Dilkas, S., & MacKay, C. (2023). Factors influencing physical activity among individuals with lower limb amputations: a qualitative study. *Disability and Rehabilitation*, *45*(9), 1461-1470.

Lehrer, P. M., Woolfolk, R. L., & Goldman, N. (1986). Progressive relaxation then and now: Does change always mean progress?. In *Consciousness and Self-Regulation: Advances in Research and Theory Volume 4* (pp. 183-216). Boston, MA: Springer US.

Liu, W., Kelly, J. W., Trivett, M., Murray, W. K., Dowling, J. P., Wolfe, R., & McArthur, G. A. (2007). Distinct clinical and pathological features are associated with the BRAFT1799A (V600E) mutation in primary melanoma. *Journal of Investigative Dermatology*, *127*(4), 900-905.

Lopez-Olivo, M. A., Landon, G. C., Siff, S. J., Edelstein, D., Pak, C., Kallen, M. A., ... & Suarez-Almazor, M. E. (2011). Psychosocial determinants of outcomes in knee replacement. *Annals of the rheumatic diseases*, *70*(10), 1775-1781.

Luza, L. P., Ferreira, E. G., Minsky, R. C., Pires, G. K. W., & da Silva, R. (2020). Psychosocial and physical adjustments and prosthesis satisfaction in amputees: a systematic review of observational studies. *Disability and Rehabilitation: Assistive Technology*, *15*(5), 582-589.

Martin, A., Rief, W., Klaiberg, A., & Braehler, E. (2006). Validity of the brief patient health

questionnaire mood scale (PHQ-9) in the general population. *General hospital psychiatry*, *28*(1), 71-77.

Martín-Timón, I., Sevillano-Collantes, C., Segura-Galindo, A., & Del Cañizo-Gómez, F. J. (2014). Type 2 diabetes and cardiovascular disease: have all risk factors the same strength? *World journal of diabetes*, *5*(4), 444.

McBride, P. E. (1992). The health consequences of smoking: cardiovascular diseases. *Medical Clinics of North America*, *76*(2), 333-353.

Melcer, T., Sechriest, V. F., Walker, J., & Galarneau, M. (2013). A comparison of health outcomes For combat amputee and limb salvage patients injured in Iraq and Afghanistan wars. *Journal of trauma and acute care surgery*, *75*(2), S247-S254.

Melzack, R. (1989). Phantom limbs, the self and the brain (the DO Hebb Memorial Lecture). *Canadian Psychology/Psychologie Canadienne*, *30*(1), 1.

Mendell, L. M. (2014). Constructing and deconstructing the gate theory of pain. *Pain®*, *155*(2), 210-216.

Miller, W. C., Mohammadi, S., Watson, W., Crocker, M., & Westby, M. (2021). The Hip Instructional Prehabilitation Program for Enhanced Recovery (HIPPER) as an eHealth Approach to Presurgical Hip Replacement Education: Protocol for a Randomized Controlled Trial. *JMIR research protocols*, *10*(7), e29322.

Monastra, V. J., Lynn, S., Linden, M., Lubar, J. F., Gruzelier, J., & LaVaque, T. J. (2005).

Electroencephalographic biofeedback in the treatment of attention-defcit/hyperactivity disorder. Applied Psychophysiology and Biofeedback, 30(2), 95–114. https://doi.org/10.1007/s10484-005-4305-x

Morgenroth, D. C., Orendurff, M. S., Shakir, A., Segal, A., Shofer, J., & Czerniecki, J. M. (2010). The relationship between lumbar spine kinematics during gait and low-back pain in transfemoral amputees. *American journal of physical medicine & rehabilitation*, *89*(8), 635-643.

Murray, C. D. (2009). Being like everybody else: the personal meanings of being a prosthesis user. *Disability and Rehabilitation*, *31*(7), 573-581.

Murray, C. D. (2013). 'Don't you talk to your prosthetist?'Communicational problems in the prescription of artificial limbs. *Disability and rehabilitation*, *35*(6), 513-521.

Nielsen, A. B., & Yde, J. O. H. A. N. N. E. S. (1991). Epidemiology of acute knee injuries: a prospective hospital investigation. *The Journal of trauma*, *31*(12), 1644-1648.

Oaksford, K., Frude, N., & Cuddihy, R. (2005). Positive Coping and Stress-Related Psychological Growth Following Lower Limb Amputation. *Rehabilitation psychology*, *50*(3), 266.

O'Keeffe, B. (2011). Prosthetic rehabilitation of the upper limb amputee. *Indian Journal of Plastic Surgery*, *44*(02), 246-252.

Ononeze, B. O., Ononeze, V. N., & Holohan, M. (2006). Management of women with major

placenta praevia without haemorrhage: a questionnaire-based survey of Irish obstetricians. *Journal of obstetrics and gynaecology*, *26*(7), 620-623.

Pawlow, L. A., & Jones, G. E. (2002). The impact of abbreviated progressive muscle relaxation on salivary cortisol. *Biological psychology*, *60*(1), 1-16.

Pedras, S., Vilhena, E., Carvalho, R., & Pereira, M. G. (2018). Psychosocial adjustment to a lower limb amputation ten months after surgery. *Rehabilitation Psychology*, *63*(3), 418.

Pezzin, L. E., Dillingham, T. R., & MacKenzie, E. J. (2000). Rehabilitation and the long-term outcomes of persons with trauma-related amputations. *Archives of physical medicine and rehabilitation*, *81*(3), 292-300.

Pezzin, L. E., Pollak, R. A., & Schone, B. S. (2013). Complex families and late-life outcomes among elderly persons: Disability, institutionalization, and longevity. *Journal of Marriage and Family*, *75*(5), 1084-1097.

Phelps, L. F., Williams, R. M., Raichle, K. A., Turner, A. P., & Ehde, D. M. (2008). The importance of cognitive processing to adjustment in the 1st year following amputation. *Rehabilitation Psychology*, *53*(1), 28.

Provance, J. B., Spertus, J. A., Jones, P. G., Hoffman, M. A., Bunte, M. C., Vogel, T. R., ... & Smolderen, K. G. (2022). Variability in 30-day major amputation rates following endovascular peripheral vascular intervention for critical limb ischemia. *Vascular Medicine*, 1358863X221098097.

Pun, P. B., Lu, J. I. A., & Moochhala, S. (2009). Involvement of ROS in BBB dysfunction. *Free*

radical research, *43*(4), 348-364.

Racy, J. C., & Silva, E. D. A. (2016). Indústria e universidade: a cooperação internacional e institucional e o protagonismo da mobilidade estudantil nos sistemas de inovação da Alemanha. *Educação e Pesquisa*, *43*, 569-584.

Raina, G. B., Cersosimo, M. G., Folgar, S. S., Giugni, J. C., Calandra, C., Paviolo, J. P., ... & Micheli, F. E. (2016). Holmes tremor: clinical description, lesion localization, and treatment in a series of 29 cases. *Neurology*, *86*(10), 931-938.

Reitz, C., & Mayeux, R. (2014). Alzheimer disease: epidemiology, diagnostic criteria, risk factors and biomarkers. *Biochemical pharmacology*, *88*(4), 640-651.

Robson, M., & France, R. (1997). Cognitive behavioural therapy in primary care.

Rosenstiel, A. K., & Keefe, F. J. (1983). The use of coping strategies in chronic low back pain patients: relationship to patient characteristics and current adjustment. *Pain*, *17*(1), 33-44.

Rybarczyk, B., Nyenhuis, D. L., Nicholas, J. J., Cash, S. M., & Kaiser, J. (1995). Body image, perceived social stigma, and the prediction of psychosocial adjustment to leg amputation. *Rehabilitation psychology*, *40*(2), 95.

Rybarczyk, B., & Behel, J. (2008). Limb loss and body image. In *Psychoprosthetics* (pp. 23-31). London: Springer London.

Rybarczyk, B., Edwards, R., & Behel, J. (2004). Diversity in adjustment to a leg amputation: case illustrations of common themes. *Disability and Rehabilitation*, *26*(14-15), 944-953.

Saradjian, A., Thompson, A. R., & Datta, D. (2008). The experience of men using an upper limb prosthesis following amputation: positive coping and minimizing feeling different. *Disability and rehabilitation*, *30*(11), 871-883.

Schaffalitzky, E., NiMhurchadha, S., Gallagher, P., Hofkamp, S., MacLachlan, M., & Wegener, S. T. (2009). Identifying the values and preferences of prosthetic users: a case study series using the repertory grid technique. *Prosthetics and Orthotics International*, *33*(2), 157-166.

Schäfer, T., Pritzkuleit, R., Jeszenszky, C., Malzahn, J., Maier, W., Günther, K. P., & Niethard, F. (2013). Trends and geographical variation of primary hip and knee joint replacement in Germany. *Osteoarthritis and Cartilage*, *21*(2), 279-288.

Schoppen, T., Boonstra, A., Groothoff, J. W., de Vries, J., Göeken, L. N., & Eisma, W. H. (2003). Physical, mental, and social predictors of functional outcome in unilateral lower-limb amputees. *Archives of physical medicine and rehabilitation*, *84*(6), 803-811.

Schwartz, M. S., & Andrasik, F. (Eds.). (2017). Biofeedback: A practitioner's guide. Guilford Publications.

Senra, H., Oliveira, R. A., Leal, I., & Vieira, C. (2012). Beyond the body image: a qualitative study on how adults experience lower limb amputation. *Clinical rehabilitation*, *26*(2), 180-191.

Singh, J. (2008). Distributed R&D, cross-regional knowledge integration and quality of innovative output. *Research Policy*, *37*(1), 77-96.

Sinha, R., van den Heuvel, W. J., & Arokiasamy, P. (2014). Adjustments to amputation and an artificial limb in lower limb amputees. *Prosthetics and orthotics international*, *38*(2), 115-121.

Sjödahl, C., Gard, G., & Jarnlo, G. B. (2004). Coping after trans-femoral amputation due to trauma or tumour—a phenomenological approach. *Disability and Rehabilitation*, *26*(14-15), 851-861.

Smith, Michael, John. W. Bowker, John. H, American Academy of Orthopaedic Surgeons: 3-19.

Staruch, R. M. T., Griffin, M. F., & Butler, P. E. M. (2016). Suppl-3, M9: Nanoscale Surface Modifications of Orthopaedic Implants: State of the Art and Perspectives. *The open orthopaedics journal*, *10*, 920.

Srivastava, K., & Chaudhury, S. (2014). Rehabilitation after amputation: psychotherapeutic intervention module in Indian scenario. *The Scientific World Journal*, *2014*.

Stein, V., & Greitemann, B. (2015). *Rehabilitation in Orthopädie und Unfallchirurgie*. Springer Berlin Heidelberg.

Stevens, D. L., Bisno, A. L., Chambers, H. F., Dellinger, E. P., Goldstein, E. J., Gorbach, S. L., .. & Wade, J. C. (2014). Practice guidelines for the diagnosis and management of skin and soft tissue infections: 2014 update by the Infectious Diseases Society of America. *Clinical infectious diseases*, *59*(2), e10-e52.

Suk, F. Y., Thing, Y. Y., Hua, K. K., & Wah, Y. C. (2023). The Efficacy of Cognitive Behavioral Therapy in Reducing Phantom Limb Pain in amputee patients: A Systematic Review. *Journal of Survey in Fisheries Sciences*, *10*(4S), 510-527.

Tatar, A., & Saltukoglu, G. (2010). The adaptation of the CES-depression scale into Turkish

through the use of confirmatory factor analysis and item response theory and the examination of psychometric characteristics. *Klinik Psikofarmakoloji Bülteni-Bulletin of Clinical Psychopharmacology*, *20*(3), 213-227.

Thompson, S. C. (1985). Finding positive meaning in a stressful event and coping. *Basic and Applied Social Psychology*, *6*(4), 279-295.

Unwin, J., Kacperek, L., & Clarke, C. (2009). A prospective study of positive adjustment to lower limb amputation. *Clinical rehabilitation*, *23*(11), 1044-1050.

Van Hooft, J. E., Bemelman, W. A., Breumelhof, R., Siersema, P. D., Kruyt, P. M., van der Linde, K., & Fockens, P. (2007). Colonic stenting as bridge to surgery versus emergency surgery for management of acute left-sided malignant colonic obstruction: a multicenter randomized trial (Stent-in 2 study). *BMC surgery*, *7*, 1-7.

Varma, P., Stineman, M. G., & Dillingham, T. R. (2014). Epidemiology of limb loss. *Physical Medicine and Rehabilitation Clinics*, *25*(1), 1-8.

Vancampfort, D., Kimbowa, S., Schuch, F., & Mugisha, J. (2021). Physical activity, physical fitness and quality of life in outpatients with major depressive disorder versus matched healthy controls: Data from a low-income country. *Journal of Affective Disorders*, *294*, 802-804.

Vincent, J. L., Sakr, Y., Sprung, C. L., Ranieri, V. M., Reinhart, K., Gerlach, H., ... & Sepsis Occurrence in Acutely Ill Patients Investigators. (2006). Sepsis in European intensive care units: results of the SOAP study. *Critical care medicine*, *34*(2), 344-353.

Vlaeyen, J. W., & Linton, S. J. (2012). Fear-avoidance model of chronic musculoskeletal pain: 12 years on. *Pain*, *153*(6), 1144-1147.

Vogel, T. R., Petroski, G. F., & Kruse, R. L. (2014). Impact of amputation level and comorbidities on functional status of nursing home residents after lower extremity amputation. *Journal of vascular surgery*, *59*(5), 1323-1330.

Vogel, N., Murawski, A., Schmied-Tobies, M. I., Rucic, E., Doyle, U., Kämpfe, A., & Kolossa-Gehring, M. (2021). Lead, cadmium, mercury, and chromium in urine and blood of children and adolescents in Germany–human biomonitoring results of the German Environmental Survey 2014–2017 (GerES V). *International Journal of Hygiene and Environmental Health*, *237*, 113822.

Voracek M, Haubner T, Fisher ML. Recent decline in nonpaternity rates: a cross-temporal meta-analysis. Psychological reports. 2008 Dec; 103(3):799-811.

Vowles, K. E., McCracken, L. M., & O'Brien, J. Z. (2011). Acceptance and values-based action in chronic pain: A three-year followup analysis of treatment efectiveness and process. Behavioural Research Therapy, 49, 748–755. https://doi.org/10.1016/j.brat. 2011.08.002

Wald, J., & Alvaro, R. (2004). Psychological factors in work-related amputation: considerations for rehabilitation counselors. *Journal of rehabilitation*, *70*(4).

Wetterhahn, K. A., Hanson, C., & Levy, C. E. (2002). Effect of participation in physical activity on body image of amputees. *American journal of physical medicine & rehabilitation*, *81*(3), 194-201.

White, C. A. (2001). *Cognitive behaviour therapy for chronic medical problems: A guide to assessment and treatment in practice*. John Wiley & Sons Ltd.

Williams, R. M., Ehde, D. M., Smith, D. G., Czerniecki, J. M., Hoffman, A. J., & Robinson, L. R. (2004). A two-year longitudinal study of social support following amputation. *Disability and rehabilitation*, *26*(14-15), 862-874.

Williamson, G. M., Schulz, R., Bridges, M. W., & Behan, A. M. (1994). Social and psychological factors in adjustment to limb amputation. *Journal of Social Behavior and Personality*, *9*(5), 249.

Willrich, A., Pinzur, M., McNeil, M., Juknelis, D., & Lavery, L. (2005). Health related quality of life, cognitive function, and depression in diabetic patients with foot ulcer or amputation. A preliminary study. *Foot & ankle international*, *26*(2), 128-134.

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

Appendix A

Demographic Sheet

شعبہ نفسیات، بین الاقوامی اسلامی یونیورسٹی اسلام آباد ایک ایسا شعبہ ہے جو تعلیم و تدریس کے علاوہ انسانی و معاشرتی نفسیات سے متعلق مختلف موضوعات اور مسائل پر تحقیق کرتا ہے۔

اس تحقیق کا مقصد یہ جاننا ہے کہ آپ کو کس طرح کے حالات میں کس حد تک غصہ آتا ہے اور غصے کے اظہار یا کنٹرول کے بارے میں کہاں تک آگاہی ہے۔ اس سلسلے میں مختلف بیانات دیے گئے ہیں۔ براہ مہربانی ہر بیان کو غور سے پڑھیں اور اپنی ذات کے حوالے سے جواب دیں۔ کسی بھی بیان کو خالی نہ چھوڑیں۔

آپ کو یقین دلایا جاتا ہے کہ آپ کی دی گئی تمام معلومات صیغہ راز میں رکھی جائیں گی اور صرف تحقیقی مقاصد میں استعمال کی جائیں گی۔

تعاون کا شکریہ۔

ذاتی کوائف

تاریخ: _____

نام: _____ عمر: _____

جنس: _____ تعلیم: _____

پیشہ: _____ ازدواجی حیثیت: _____

خاندانی نظام: مشترکہ / علیحدہ _____ ماہانہ آمدنی: _____

بہن بھائیوں کی تعداد: _____ والدین: دونوں / ایک _____

بہن بھائیوں میں نمبر: _____ گھر میں کل افراد: _____

Appendix B

What is this survey about?

This questionnaire looks at different aspects of having a prosthesis. The information gathered will be used to improve our understanding of aspects of prosthesis use and to assist in the development of better services for prosthesis users.

Who should complete the questionnaire?

The questionnaire should be completed by the person with a prosthesis. However, if the person needs help to complete the questionnaire, the answers should be given from his/her point of view – not the point of view of the person who is helping.

How to complete the questionnaire?

Please answer every item as honestly as you can. For each question, please tick clearly inside one box using a black or blue pen. Don't worry if you make a mistake; simply cross out the mistake and put a tick in the correct box. There are no right or wrong answers.

Your answers will be treated in strictest confidence

 Salient psychometric data are published in Gallagher, P. & MacLachlan, M. (2000) Development and psychometric evaluation of the Trinity Amputation and Prosthesis Experience Scales (TAPES). Rehabilitation Psychology, 45, 130-154. Data relating to the revised TAPES (TAPES-R) can be located in Gallagher P, Franchignoni F, Giordano A, MacLachlan M. (2010) Trinity Amputation and Prosthesis Experience Scales: A Psychometric Assessment Using Classical Test Theory and Rasch Analysis (TAPES). American Journal of Physical Medicine and Rehabilitation. 89 (6): 487-496.

Preliminary information on using the TAPES with people with acquired upper limb amputation is available in 'A guide to the TAPES' (p7) and in: Desmond, D. M., & MacLachlan, M. (2005). Factor structure of the trinity amputation and prosthesis experience scales (TAPES) with individuals with acquired upper limb amputations. American Journal of Physical Medicine & Rehabilitation, 84(7), 506-513.

This is a questionnaire designed to investigate different aspects of having a prosthesis. Please answer every item as honestly as you can. There are no right or wrong answers.

Your responses will remain confidential.

1. Client Name: _____

2. Client date of birth: _____

3. Are you male.... [ ] female...[ ]

4. How long ago did you have your amputation?

_____ years _____ months (If you have had more than one amputation surgery please refer to your first amputation surgery).

5. How long have you had a prosthesis?

_____ years _____ months

6. How long have you had the prosthesis that you wear at the moment?

_____ years _____ months

7. What type of prosthesis do you have? (Please tick the appropriate box)

Below-Knee [ ] Below-elbow [ ]

Through-Knee [ ] Through-elbow [ ]

Above-Knee [ ] Above-elbow [ ]

Other (please specify) _____

8. What was your amputation a result of? (Please tick the appropriate box)

Peripheral Vascular Disorder [ ]

Diabetes [ ]

Cancer [ ]

Accident [ ]

Other (please specify) _____

Part I

Below are written a series of statements concerning the wearing of a prosthesis. Please read through each statement carefully. Then tick the box beside each statement, which shows how strongly you agree or disagree with it.

		Strongly disagree	Disagree	Agree	Strongly agree	Not applicable
1.	I have adjusted to having a prosthesis.....	[1]	[2]	[3]	[4]	[ ]
2.	As time goes by, I accept my prosthesis more.....	[1]	[2]	[3]	[4]	[ ]
3.	I feel that I have dealt successfully with this trauma in my life	[1]	[2]	[3]	[4]	[ ]
4.	Although I have a prosthesis, my life is full	[1]	[2]	[3]	[4]	[ ]
5.	I have gotten used to wearing a prosthesis.....	[1]	[2]	[3]	[4]	[ ]
6.	I don't care if somebody looks at my prosthesis	[1]	[2]	[3]	[4]	[ ]
7.	I find it easy to talk about my prosthesis	[1]	[2]	[3]	[4]	[ ]
8.	I don't mind people asking about my prosthesis.....	[1]	[2]	[3]	[4]	[ ]
9.	I find it easy to talk about my limb loss in conversation	[1]	[2]	[3]	[4]	[ ]
10.	I don't care if somebody notices that I am limping ...	[1]	[2]	[3]	[4]	[ ]
11.	A prosthesis interferes with the ability to do my work.....	[4]	[3]	[2]	[1]	[ ]
12.	Having a prosthesis makes me more dependent on others than I would like to be	[4]	[3]	[2]	[1]	[ ]
13.	Having a prosthesis limits the kind of work that I can do.....	[4]	[3]	[2]	[1]	[ ]
14.	Being an amputee means that I can't do what I want to do.....	[4]	[3]	[2]	[1]	[ ]
15.	Having a prosthesis limits the amount of work that I can do.....	[4]	[3]	[2]	[1]	[ ]

The following questions are about activities you might do during a typical day. Does having a prosthesis limit you in these activities? If so, how much? Please tick the appropriate box.

	Yes, limited at all	**Limited a little**	**No, not**	
(a) Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports	[2]	[1]	[0]	
(b) climbing several flights of stairs	[2]	[1]	[0]	
(c) running for a bus	[2]	[1]	[0]	
(d) sport and recreation	[2]	[1]	[0]	
(e) climbing one flight of stairs	[2]	[1]	[0]	
(f) walking more than a mile	[2]	[1]	[0]	
(g) walking half a mile	[2]	[1]	[0]	
(h) walking 100 metres	[2]	[1]	[0]	
(i) working on hobbies	[2]	[1]	[0]	
(j) going to work	[2]	[1]	[0]	[Not applicable]

Please tick the box that represents the extent to which you are satisfied or dissatisfied with each of the different aspects of your prosthesis mentioned below:

		Not satisfied	Satisfied	Very Satisfied
(i)	Colour.	[1]	[2]	[3]
(ii)	Shape	[1]	[2]	[3]
(iii)	Appearance	[1]	[2]	[3]
(iv)	Weight	[1]	[2]	[3]
(v)	Usefulness	[1]	[2]	[3]
(vi)	Reliability	[1]	[2]	[3]
(vii)	Fit	[1]	[2]	[3]
(viii)	Comfort	[1]	[2]	[3]

Please circle the number (0-10) that best describes how satisfied you are with your prosthesis?

0 1 2 3 4 5 6 7 8 9 10

Not at all Very Satisfied

Satisfied

Part II

(For the following questions, please tick the appropriate boxes)

1. On average, how many hours a day do you wear your prosthesis? _____hours

2. In general, would you say your health is:

Very Poor [1] Poor [2] Fair [3] Good [4] Very Good [5]

3. In general, would you say your physical capabilities are:

Very Poor [1] Poor [2] Fair [3] Good [4] Very Good [5]

4. (a) Do you experience residual limb (stump) pain (pain in the remaining part of your amputated limb)? No [0] .... (If no, go to question 5)

Yes [1] .... (If yes, answer part (b), (c), (d) and (e)

(b) During the last week, how many times have you experienced stump pain? _____

(c) How long, on average, did each episode of pain last? _____

(d) Please indicate, the average level of stump pain experienced during the last week on the scale below by ticking the appropriate box:

Excruciating	Horrible	Distressing	Discomforting	Mild
[5]	[4]	[3]	[2]	[1]

(e) How much did stump pain interfere with your normal lifestyle (eg. work, social and family activities) during the last week?

A Lot	Quite a Bit	Moderately	A Little Bit	Not at All
[5]	[4]	[3]	[2]	[1]

5. (a) Do you experience phantom limb pain (pain in the part of the limb which was amputated)?

No [0] .... (if no, go to question 6)

Yes [1] .... (If yes, answer part (b), (c), (d), and (e)

(b) During the last week, how many times have you experienced phantom limb pain?

_____

(c) How long, on average, did each episode of pain last? _____

(d) Please indicate the average level of phantom limb pain experienced during the last week on the scale below by ticking the appropriate box:

Excruciating	Horrible	Distressing	Discomforting	Mild
[5]	[4]	[3]	[2]	[1]

(e) How much did phantom limb pain interfere with your normal lifestyle (e.g. work, social and family activities) during the last week?

A Lot	Quite a Bit	Moderately	A Little Bit	Not at All
[5]	[4]	[3]	[2]	[1]

6. (a) Do you experience any other medical problems apart from stump pain or phantom limb pain?

No [0]

Yes [1] (If yes, answer part (b), (c), (d), (e),(f) and (g)

(b) Please specify what problems you experience _____

(c) During the last week, how many times have you suffered from these medical problems?

(d) How long, on average, did each problem last? _____

(e) Please indicate the level of pain experienced as a result of these problems during the last week on the scale below by ticking the appropriate box:

Excruciating	Horrible	Distressing	Discomforting	Mild
[5]	[4]	[3]	[2]	[1]

(f) How much did these medical problems interfere with your normal lifestyle (e.g. work, social and family activities) during the last week?

A Lot	Quite a Bit	Moderately	A Little Bit	Not at All
[5]	[4]	[3]	[2]	[1]

(g) Do you experience any other pain that you have not previously mentioned?

No [0] Yes [1] If yes, please specify _____

7. Did you complete this questionnaire: (please tick the appropriate box)

On your own? [ ] With assistance? [ ]

8. Date of Completion: _____

Please check that you have answered all the questions. Thank you for all your help.

Appendix C

پارٹ-1

1. کلائنٹ کا نام: _____

2. کلائنٹ کی تاریخ پیدائش: _____

3. آپ مرد ہیں [ ]

یا

عورت [ ]

4. کتنا عرصہ پہلے آپ کا عضو کٹا تھا؟

مہینے: _____ سال: _____

5. آپ کتنے عرصے سے مصنوعی عضو استعمال کر رہے ہیں؟

مہینے: _____ سال: _____

6. اس وقت جو مصنوعی عضو آپ استعمال کر رہے ہیں وہ کتنے عرصے سے آپ کے پاس ہے؟

مہینے: _____ سال: _____

7. آپ کا مصنوعی عضو کس قسم کا ہے؟

گھٹنے سے نیچے	[ ]	کہنی کے نیچے	[ ]
گھٹنے کے اندر	[ ]	کہنی کے اندر سے	[ ]
گھٹنے کے اوپر	[ ]	کہنی کے اوپر	[ ]

کسی اور صورت میں برائے مہربانی وضاحت کریں: _____

8. آپ کا عضو کٹنے کی وجہ کیا تھی؟

شوگر / ذیابیطس	[ ]	سرطان	[ ]
حادثہ	[ ]	دائمی عروقی بیماری	[ ]

کسی اور صورت میں برائے مہربانی وضاحت کریں: _____

مصنوعی عضو کے استعمال کے بارے میں ایک بیانات کا سلسلہ دیا گیا ہے۔ برائے مہربانی ہر بیان کو غور سے پڑھیں اور ساتھ دیئے گئے ڈبے پر نشان لگائیں جو آپ کے متفق یا غیر متفق ہونے کو ظاہر کرے۔

سوالات	مکمل غیر متفق	غیر متفق	متفق	مکمل متفق	کوئی بھی نہیں
1. میں مصنوعی عضو کے ساتھ Adjust ہو گیا ہوں۔					
2. وقت گزرنے کے ساتھ ساتھ میں مصنوعی عضو کو زیادہ قبول کرنے لگا ہوں:					
3. وقت گزرنے کے ساتھ ساتھ میں مصنوعی عضو کو زیادہ قبول کرنے لگا ہوں:					
4. میں محسوس کرتا ہوں کہ میں نے اپنی زندگی میں اس حادثے کے ساتھ کامیابی سے مقابلہ کیا ہے۔					
5. اگرچہ مجھے مصنوعی عضو لگا ہے مگر میری زندگی مکمل ہے۔					
6. میں مصنوعی عضو استعمال کرنے کا عادی ہو گیا ہوں۔					
7. مجھے اپنے مصنوعی عضو کے بارے میں بات کرنا آسان لگتا ہے۔					
8. مجھے برا نہیں لگتا کہ لوگ میرے مصنوعی عضو کے بارے میں پوچھیں۔					
9. مجھے بات چیت کے دوران اپنے ضائع شدہ عضو کے بارے میں بات کرنا آسان لگتا ہے۔					
10. میں پرواہ نہیں کرتا / کرتی اگر کوئی مجھے لنگڑاتے ہوئے دیکھے۔					
11. مصنوعی عضو میرے کام کرنے کی صلاحیت میں رکاوٹ کا باعث بنتا ہے۔					
12. مصنوعی عضو کی وجہ سے میں دوسروں پر زیادہ انحصار کرتا ہوں برعکس اس کے جتنا میں چاہوں۔					
13. مصنوعی عضو ہونے کی وجہ سے میرے وہ تمام کام محدود ہو گئے ہیں جو میں کر سکتا ہوں۔					
14. معذور ہونے کا مطلب ہے کہ میں جو کرنا چاہتا ہوں وہ نہیں کر سکتا۔					
15. مصنوعی عضو ہونے کی وجہ سے ان کاموں کی تعداد محدود ہو جاتی ہے جو میں کر سکتا ہوں۔					

مندرجہ ذیل سوالات آپ کی زور مرہ سرگرمیوں کے بارے میں ہیں۔ کیا مصنوعی عضو کی وجہ سے آپ کی یہ سرگرمیاں محدود ہوتی ہیں؟ اگر ہاں تو کتنی؟ درست ڈبے پر نشان لگائیں۔

	ہاں بہت محدود	کچھ محدود	نہیں، بالکل محدود نہیں
جسمانی طاقت والی سرگرمیاں جیسا کہ دوڑنا، وزنی اشیاء اٹھانا، مشقت طلب کھیلوں میں حصہ لینا۔			
زیادہ سیڑھیوں پر چڑھنا			
بس کے لئے دوڑنا			
کھیل اور تفریح			
سیڑھیاں چڑھنا			
ایک میل سے زیادہ چلنا			
سو(100) میٹر چلنا۔			
نصف میل چلنا۔			
کام پر جانا۔			

برائے مہربانی اس ڈبے پر نشان لگائیں جو آپ کے مصنوعی عضو کے مختلف پہلو سے مطمئن یا غیر مطمئن ہونے کی شرح بتائے۔

	بہت مطمئن	مطمئن	بالکل مطمئن نہیں
رنگ			
شکل			
ظاہری صورت			
وزن			
افادیت / فائدہ			
قابل اعتماد			
موزوں / مناسب			
آرام دہ			

براہ کرم اس نمبر پر نشان لگائیں جو بہترین طریقے سے یہ بتاتا ہوں کہ آپ اپنے مصنوعی عضو سے کتنے مطمئن ہیں۔

10 9 8 7 6 5 4 3 2 1 0

بالکل مطمئن نہیں — بہت مطمئن

پارٹ-2

1. اوسطاً آپ دن میں کتنے گھنٹے اپنا مصنوعی عضو استعمال کرتے ہیں؟

2 گھنٹے　4 گھنٹے　6 گھنٹے　8 گھنٹے　10 گھنٹے

2. عموماً آپ کہیں گے کہ آپ کی صحت ہے۔

بہت خراب　خراب　قدرے بہتر　بہتر　بہترین

3. عموماً آپ کہیں گے کہ آپ کی جسمانی صلاحیتیں ہیں۔

بہت کمزور　کمزور　قدرے بہتر　بہتر　بہترین

4. (a) جس کے اس باقی حصہ پر درد محسوس کیا جو کٹ گیا ہے۔

نہیں (اگر نہیں تو سوال نمبر 5 پر جائیں)

ہاں (اگر ہاں تو حصہ نمبر (b)، (c)، (d)، (e) کا جواب دیں۔

(b) گزشتہ ہفتہ کے دوران کتنی مرتبہ آپ نے جس کے اس باقی حصہ پر درد محسوس کیا جو کٹ گیا ہے۔

0 بار　2 بار　4 بار　6 بار　10 بار

(c) برائے مہربانی پچھلے ہفتہ کے دوران قطع شدہ عضو میں ہونے والی درد کی اوسط شرح نیچے دیئے گئے پیمانے میں سے موزوں ترین ہندسے پر نشاندہی کریں۔

0 گھنٹے　2 گھنٹے　4 گھنٹے　6 گھنٹے　8 گھنٹے

(d) جسم کے اس باقی حصہ پر جو کٹ گیا ہے، کے درد نے آپ کی عام طرز زندگی میں کتنا دخل دیا (مثلاً کام، سماجی اور گھریلو مصروفیات)

زیادہ　کافی　اوسط　تھوڑا سا　بالکل نہیں

5. (a) کیا آپ جسم کے کٹے ہوئے حصے میں درد محسوس کرتے ہیں۔

نہیں (اگر نہیں تو سوال نمبر 6 پر جائیں)

ہاں (اگر ہاں تو حصہ (b)، (c)، (d)، (e) کا جواب دیں۔

(b) گزشتہ ہفتہ کے دوران آپ کو کتنی بار جسم کے کٹے ہوئے حصہ میں درد محسوس ہوا تھا۔

0 بار　2 بار　4 بار　6 بار　10 بار

(c) درد کا دورانیہ عموماً کتنی دیر تک رہا؟

0 گھنٹے   2 گھنٹے   4 گھنٹے   6 گھنٹے   8 گھنٹے

(d) براہ مہربانی نیچے دیے گئے پیمانے پر موزوں درجہ بندی کا انتخاب کرتے ہوئے نشاندہی کریں کہ گزشتہ ہفتے کے دوران جسم کے کٹے ہوئے حصے میں درد کی وجہ سے آپ نے کس طرح محسوس کیا۔

اذیت ناک   خوفناک   پریشان کن   تکلیف دہ   ہلکا

(e) جسم کے کٹے ہوئے حصے کے درد نے آپ کی عام طرز زندگی میں کتنا دخل دیا؟ (مثلاً کام، سماجی اور خاندانی سرگرمیاں)

بہت زیادہ   زیادہ   درمیانہ   کم   بالکل نہیں

3. (a) کیا آپ جسم کے کٹے ہوئے عضو اور جسم کے بقیہ حصہ میں درد کے علاوہ کوئی اور جلدی مسائل کا سامنا کرتے ہیں۔

نہیں (0)

ہاں (1) اگر ہاں تو حصہ (b), (c), (d), (e), (f) اور (g) کا جواب دیں۔

(b) براہ مہربانی وضاحت کریں کہ آپ کو کن مسائل کا سامنا ہے؟

(c) گزشتہ ہفتے کے دوران آپ کو کتنی مرتبہ ان جلدی مسائل کا سامنا کرنا پڑا۔

0   2   4   6   10

(d) ہر مسئلہ عموماً کتنی دیر تک رہا؟

1 گھنٹہ   4 گھنٹے   6 گھنٹے   8 گھنٹے   10 گھنٹے

(e) براہ مہربانی نیچے دیے گئے پیمانے پر موزوں درجہ بندی کا انتخاب کرتے ہوئے نشاندہی کریں کہ گزشتہ ہفتے کے دوران ان جلدی مسائل کی وجہ سے آپ کو کس طرح محسوس ہوا۔

اذیت ناک   خوفناک   پریشان کن   تکلیف دہ   ہلکا

(f) گزشتہ ہفتے کے دوران ان جلدی مسائل نے آپ کی طرز زندگی میں کتنا دخل دیا (مثلاً کام، سماجی اور خاندانی سرگرمیاں)

بہت زیادہ   زیادہ   درمیانہ   کم   بالکل نہیں

(ب) کیا آپ کو کسی اور درد کا سامنا ہے جس کا آپ نے پہلے ذکر نہیں کیا؟ اگر ہاں تو وضاحت کریں۔

_____

7. کیا آپ نے یہ سوالنامہ مکمل کیا ہے؟ برائے مہربانی مناسب باکس پر نشان لگائیں۔

اپنے طور پر / خود [ ]

معاونت کے ساتھ / مدد کے ساتھ [ ]

8. مکمل ہونے کی تاریخ: _____

Appendix D

DASS21

Name: Date:

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you **over the past week**. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree or a good part of time
3 Applied to me very much or most of the time

1 (s)	I found it hard to wind down	0	1	2	3
2 (a)	I was aware of dryness of my mouth	0	1	2	3
3 (d)	I couldn't seem to experience any positive feeling at al	0	1	2	3
4 (a)	I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5 (d)	I found it difficult to work up the initiative to do things	0	1	2	3
6 (s)	I tended to over-react to situations	0	1	2	3
7 (a)	I experienced trembling (e.g. in the hands)	0	1	2	3
8 (s)	I felt that I was using a lot of nervous energy	0	1	2	3
9 (a)	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10 (d)	I felt that I had nothing to look forward to	0	1	2	3
11 (s)	I found myself getting agitated	0	1	2	3
12 (s)	I found it difficult to relax	0	1	2	3
13 (d)	I felt down-hearted and blue	0	1	2	3
14 (s)	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15 (a)	I felt I was close to panic	0	1	2	3
16 (d)	I was unable to become enthusiastic about anything	0	1	2	3
17 (d)	I felt I wasn't worth much as a person	0	1	2	3
18 (s)	I felt that I was rather touchy	0	1	2	3
19 (a)	I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)	0	1	2	3
20 (a)	I felt scared without any good reason	0	1	2	3
21 (d)	I felt that life was meaningless	0	1	2	3

DASS-21 Scoring Instructions

The DASS-21 should not be used to replace a face to face clinical interview. If you are experiencing significant emotional difficulties you should contact your GP for a referral to a qualified professional.

Depression, Anxiety and Stress Scale - 21 Items (DASS-21)

The Depression, Anxiety and Stress Scale - 21 Items (DASS-21) is a set of three self-report scales designed to measure the emotional states of depression, anxiety and stress.

Each of the three DASS-21 scales contains 7 items, divided into subscales with similar content. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest / involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The stress scale is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset / agitated, irritable / over-reactive and impatient. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items.

The DASS-21 is based on a dimensional rather than a categorical conception of psychological disorder. The assumption on which the DASS-21 development was based (and which was confirmed by the research data) is that the differences between the depression, anxiety and the stress experienced by normal subjects and clinical populations are essentially differences of degree. The DASS-21 therefore has no direct implications for the allocation of patients to discrete diagnostic categories postulated in classificatory systems such as the DSM and ICD.

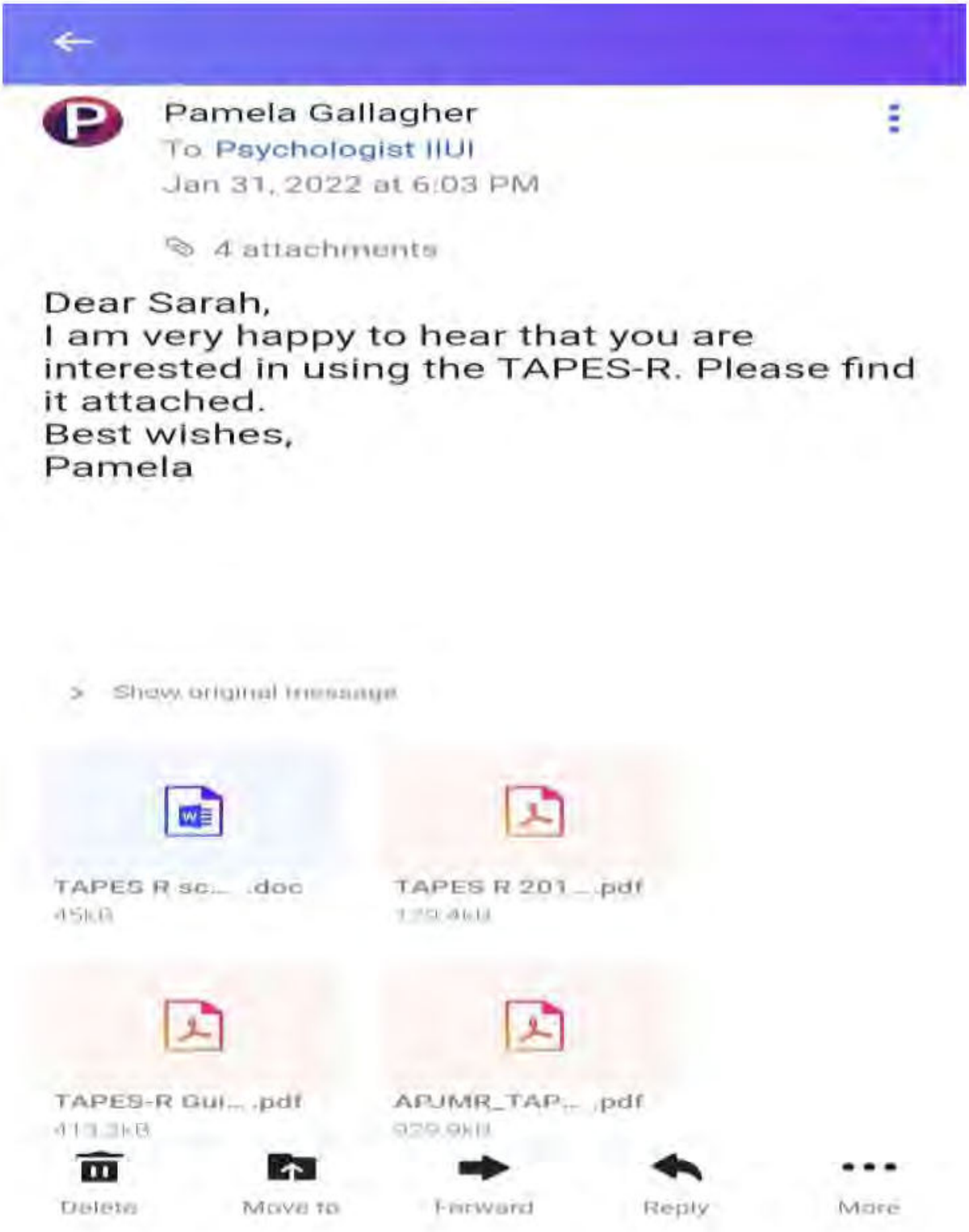
Recommended cut-off scores for conventional severity labels (normal, moderate, severe) are as follows:

NB Scores on the DASS-21 will need to be multiplied by 2 to calculate the final score.

	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

Lovibond, S.H. & Lovibond, P.F. (1995). Manual for the Depression Anxiety & Stress Scales. (2nd Ed.)Sydney: Psychology Foundation.

Appendix E


Pamela Gallagher
To Psychologist IIUI
Jan 31, 2022 at 6:03 PM
4 attachments
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I am very happy to hear that you are interested in using the TAPES-R. Please find it attached.
Best wishes,
Pamela
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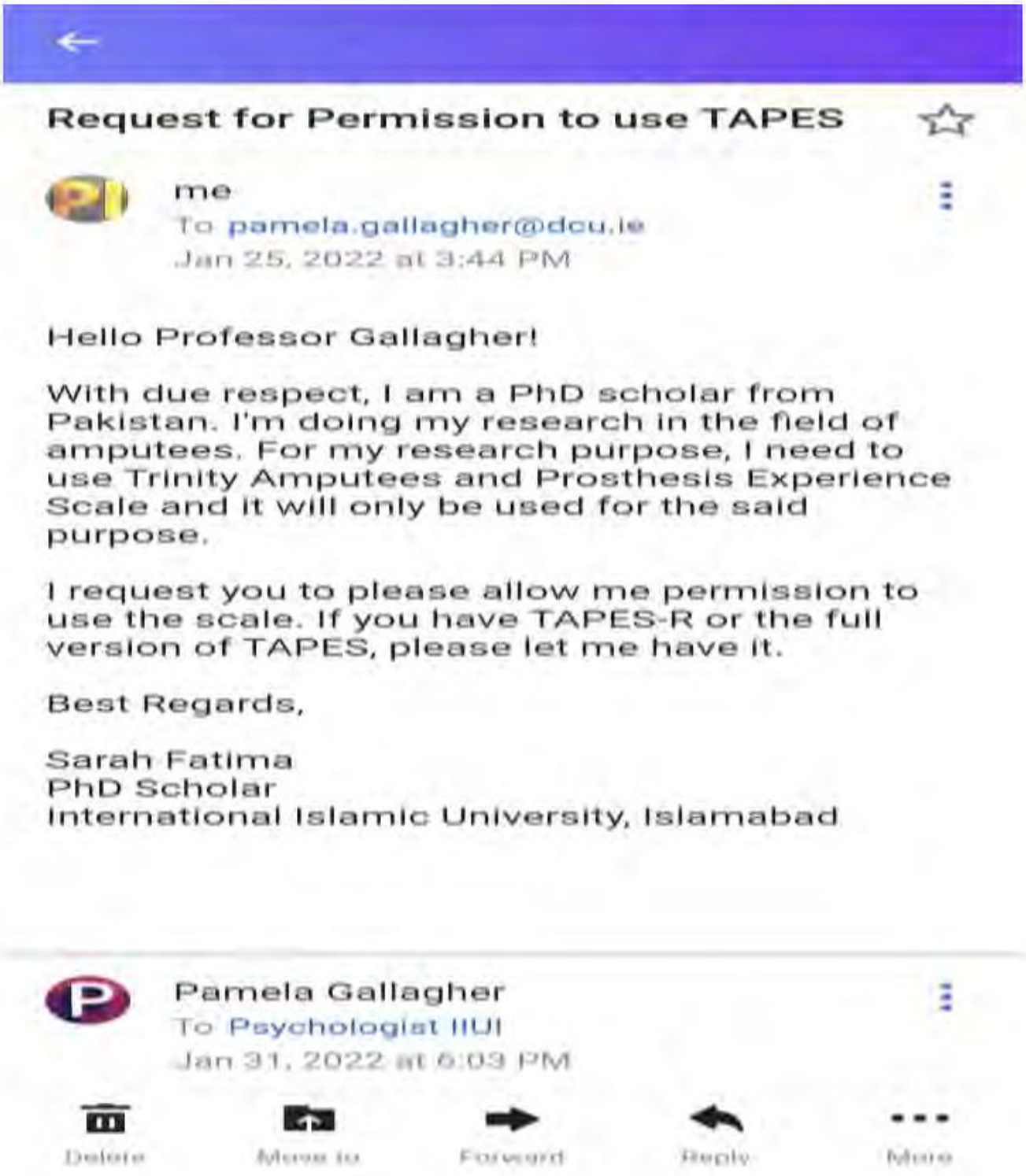
Appendix F



Request for Permission to use TAPES

me
To pamela.gallagher@dcu.ie
Jan 25, 2022 at 3:44 PM

Hello Professor Gallagher!

With due respect, I am a PhD scholar from Pakistan. I'm doing my research in the field of amputees. For my research purpose, I need to use Trinity Amputees and Prosthesis Experience Scale and it will only be used for the said purpose.

I request you to please allow me permission to use the scale. If you have TAPES-R or the full version of TAPES, please let me have it.

Best Regards,

Sarah Fatima
PhD Scholar
International Islamic University, Islamabad

Pamela Gallagher
To Psychologist IIUI
Jan 31, 2022 at 6:09 PM

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Appendix G

Turnitin *Originality Report*

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