Original Article

Robotics in Lower limb Amputate to improve functional activity

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Abstract

Phantom limb pain (PLP) is defined as pain experienced by a bodily part that is no longer existent. Stump pain is pain felt in the severed limb's remaining component, whereas phantom sensations are nonpainful sensations felt in a bodily part that no longer exists. People with bilateral limb amputation did not have a higher rate of phantom pain or feeling than those with single limb amputation. There has been a link discovered between the PLP and residual limb pain. Preamputation pain has also been linked to an increased likelihood of getting PLP.

Keywords: Phantom Limb Pain, Stump Pain, Suspension Therapy, Strengthening, Biofeedback.

INTRODUCTION

This Feelings of phantom Amputation patients may also have sensation, which is not the same as PLP. The phantom sense is almost universal, and it has nothing to do with pain.

Phantom feelings can be classified into three categories:

Thermodynamic (movement)

The sense of touch (size, shape, position)

Extrasensory perception (touch, pressure, temperature, itch, vibration)

PLP is likely to persist or worsen as a result of stress, worry, grief, and other emotional stressors. Amputees with depressed symptoms were more likely than those without depressive symptoms to describe their pain as more severe, according to a study. [1-15]

Training in Mobility The lack of limb stability and control is a major worry for many amputees and a hindrance to prosthetic mobility. Lower-limb prosthetic users are at a higher risk of tripping and falling, which is related to the amount of amputation, age, and the severity of comorbidities such as visual or hearing loss, joint contractures, reduced sensitivity, and muscular atrophies.

I. CAUSE

The actual cause of phantom limb discomfort is unknown to researchers. One theory is that when nerves in portions of your spinal cord and brain lose messages from a missing limb or leg, they "rewire." As a result, they are able to

Incidence 50-70 years old is the average age Males account for 75% of the population, while females account for 25%. Limb The lower limb accounts for 85% of the total, whereas the upper limb accounts for 15%. RTA(Renal Tubular Acidosis), gunshot, malignant tumour, nerve injury, and infection are the most common (indications). Burn gangrene, peripheral vascular insufficiency, and serious infections are all caused by extreme heat and cold. [16-35]

A. TREATMENT SUSPENSION

Suspension To suspend a part of the body or the full body, supported slings and pulleys are employed. It is powered by friction and a pendulum, eliminating the need for gravity movement.

B. PENDULUM

- Pendulum for body strengthening: The main suspension point is 2 inches below the ASIS, where an s-hook connects the supporting rope to the mesh. A supplementary supporting rope is attached using the same shook.

- The patient is encouraged to perform hip abduction and adduction movements to strengthen the abductor, as well as medial axis shifting to strengthen the adductor

- Biofeedback, either auditory or visual, should be used. Physically, muscle strength, joint mobility, respiratory function, balance reaction, vision, and hearing are all assessed.

Lower appendage removal (LLA)

Lower appendage removal (LLA) is related with significant recovery challenges and deep rooted versatility constraints.. Appendage misfortune thwarts parts of engine control, however it additionally lessens the tactile criticism data and proprioception that are related with the fringe sensory system. Accordingly, people with LLA frequently walk increasingly slow more energy than non-tragically handicapped people.

They likewise show abnormal step and stacking designs that might be related with long haul auxiliary medical problems including persistent back torment and joint issues. Besides, unfortunate equilibrium and walk work in people with LLA can prompt the feeling of dread toward falling and a more noteworthy frequency of falls, with the greater part of moving around grown-ups with LLA falling something like one time each year. The results of these falls incorporate injury and hospitalization, elevated feeling of dread toward falling prompting prosthesis neglect, and the ensuing social withdrawal lessening their capacity to recuperate from the injury, both truly and mentally.

Factors associated to amputation:

The number of years since amputation was calculated using the date of the most recent significant operation on the limb with the amputation recorded in the subject's hospital history.

When ambulating with the prosthesis, respondents checked whether they utilised canes, crutches, walkers, or no device. The capacity to "walk automatically" was determined by questioning whether the individual had to concentrate on each step during the survey. This is a question from the Prosthetic Profile of the Amputee survey.

Factors of Psychology

Because psychological processes impact both pain perception and treatment outcomes, including psychological concepts into physical therapy treatment appears to have the potential to improve outcomes. A variety of psychological variables influence how people perceive pain.

The depression levels were measured using the Center for Epidemiologic Studies Depression (CES-D) Scale. An index ranging from 0 to 60 is calculated by averaging 27 replies on 4-point Likert scales over 20 items. Higher scores indicate greater pain.

Alpha coefficients of.85 for the general population and.90 for a sample of mental patients were reported by Radloff27.

A correlation (r) of.76 was observed when the CES-D Scale was administered by a nurse and a research clinician. 27 The test-retest reliability coefficients ranged from.4 to.7.27,28.

Linking CES-D Scale items with present symptoms has been associated to low retest results.

27 There has been a lot of support supporting validity. 26 Radloff27 discovered correlations (r) ranging from.44 to.56 with other variables.

To measure adaptability to amputation and the prosthesis, a single question was employed. 21 To determine the degree of adaptation, a 5-point Likert scale with anchors of "not at all adapted" and "totally adapted" at the extremities of the scale was utilised.[26-36]

CONCLUSION

The results of this study suggest that a brief and intensive physiotherapy programme improves Walking speed was the biggest predictor of the primary result, with the intervention being the best predictor. Traditional rehabilitation, which focuses mostly on walking, is less beneficial in the recovery of traumatic amputees than this sort of training. The authors advocate proper For treating traumatic lower amputees, curative, rehabilitative, and preventative interventions, including particular physiotherapy training, due to the social, economic, and political effects of landmines. Unfortunately, recent experience in Aceh Province, Indonesia, following the Tsunami disaster reveals that limb rehabilitation methods are not yet being implemented on a regular basis: new amputees do not appear to have systematic access to prosthetic care (prelez 2005). There is study being done in the issue of traumatic amputees.

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