

Correlation Between Level Of Depression, Sleep Disturbance And Suicidal Thoughts Among Lower Limb Amputees

Anna Zaheer^{1*}, Faiza Sharif¹, Nida Fatima¹, Ayesha Shafique¹ and Zeeshan Khan¹

¹University Institute of Physical Therapy, The University of Lahore, Lahore, Pakistan

*annaazaheer@yahoo.com

Highlights:

- Current study is a cross sectional survey to find level of depression and its correlation with sleep and suicidal thoughts among lower limb amputees.
- Patient health questionnaire-9 (PHQ-9) was used and data was calculated from registered hospitals and rehabilitation centers in Lahore, Pakistan.
- It was concluded that amputees suffered from depression of varying severities and there was a significant correlation between depression, sleep and suicidal thoughts.

Abstract:

Amputation is an operative removal of a particular part of the body. Types of this surgical process vary from patient to patient depending upon the condition of a patient. Amputees face various psychological consequences which may lead to depression.

Objective:

To find the correlation between sleep, suicidal thoughts and depression among lower limb amputees.

Methodology:

It was a cross sectional survey conducted on amputees. Data were collected from registered government hospitals and rehabilitation centers of Lahore, Pakistan. Modified Patient Health Questionnaire (PHQ-9) was used to find frequency score of depression. Patient with Transtibial and transfemoral amputation were included in the study. People with other disabilities, pregnancy, infectious stump, upper motor disease, lower motor disease and ongoing malignancy were excluded.

Results:

This study was conducted on 70 patients with Lower limb amputation that was either trans-tibial or trans-femoral. Among all participants 53(75.7%) were males and 17(24.3%) were

females. Depression was presented in 55 (78.57%) amputees, among those 21 (30%) participants were suffering from mild depression, 20 (28.6%) from moderate, 12 (17.1%) with moderately severe and only 2 (2.9%) participants were presented with severe depression. Correlation of depression score with sleep disturbance was 0.492(p 0.000) and that of depression score and frequency of suicidal thought was 0.452(p 0.000).

Conclusions:

Patients who underwent amputation suffered from various psychological consequences such as depression. They had sleep disturbances and suicidal thoughts found to be directly associated to depression.

Key words:

Amputees, Depression, Suicidal thoughts.

Introduction:

Amputation is an operative removal of a particular part of the body. Types of this surgical process vary from patient to patient depending upon the condition of a patient. Amputation is the last hope of survival for patients suffering from different pathological condition.¹ The unilateral or bilateral amputation may be performed and are divided in minor or major amputation. Minor part of limb removal like toe etc. are included in minor amputation and full and partial limb removal is called major amputation.² Most commonly performed were transfemoral and trans-tibial. Peripheral artery disease is the second major cause of amputation in developed countries.³ Lower Limb Amputations for peripheral arterial disease were performed predominantly on an elderly people with concomitant medical complications and poor social support.⁴ Lower Limb Amputation (LLA) because of trauma was seen in young individuals in road traffic accidents. More proximal the amputation is, fewer chances to regain ambulation are present, above knee amputation is preferable for those where below knees amputation is not suitable which might be

due to decreased blood supply to distal portion of the limb or other causes.⁵ Amputees also face various psychological consequences which may lead to depression.⁶ This stigma is one of the major problems of person undergoing amputations as it may leads to social pressure and non-acceptability.⁷ Experience of depression varies person to person. Amputation is a strong enough to causes anxiety and negative thoughts in amputee which can be related to psychological issues.⁶ This situation can be worsened by lack of social support, self-consciousness of disability and knowledge which are among common reasons of psychological disorders. Functional limitation due to amputation can lead to joblessness of the survivor which directly causes financial and social troubles leading to poor psychological condition of that person. This can lead to social isolation due to reduced self-esteem and lack of confidence to face people in presence of disability.⁸ Before getting prosthesis, during the trial and after the adjustment to prosthesis, physiotherapist plays a significant role in rehabilitation process. Standing for the first time after amputation require prior functional independence by physiotherapy sessions, this will decrease the chance of falling and thus fear of fall. This will help in decreasing depression and boost self-esteem.⁹ The amputees have a huge number of psychosocial issues which need to be addressed in order to provide a holistic approach and a better life. It is essential to aware the patient's family, the health care providers and community to the additional psychosocial requirements of amputees.¹⁰ Proper physiotherapy along with the multidisciplinary approach in coordination with other rehabilitation departments can result in improvement.¹¹ While treating amputees, it should always be kept in mind that the focus should not only be limited to the physical need of a patient but it is compulsory to consider other parameters like social, emotional and financial factors so we can provide a complete and better rehabilitation.¹² The purpose of this study was to find the correlation between sleep, suicidal thoughts and depression among lower limb amputees. This study benefits in a way that it can direct further studies to accommodate the amputees in rehabilitation centers with not only physical rehabilitation but also on psychological

counseling for their better physical and mental health. Most of the previous studies were cross-sectional and no good prospective data was present on depression among lower amputees according to researcher's knowledge, this is needed to be addressed in future studies.

Methodology:

It was a cross sectional survey conducted on amputees. Sample size was 70. This study was conducted on Lower limb amputees that were either trans-tibial or trans-femoral. Data were collected from registered government hospitals (Mayo Hospital, Jinnah Hospital) and Rehabilitation center (Pakistan Society of Rehabilitation of Disable) of Lahore, Pakistan. Patient Health Questionnaire (PHQ-9) was used to find the frequency and level of depression.¹³ Patient with transtibial and transfemoral amputation between age 18 to 60 years were included in the study. People with other disabilities, pregnancy, infectious stump, upper motor disease, lower motor disease and ongoing malignancy and age less than 18 years were excluded. Data were analyzed statistically using SPSS version 22.0.

Results:

70 lower limb amputees were included in this study, among those 53(76%) were males and 17(24%) were females (Figure 1).

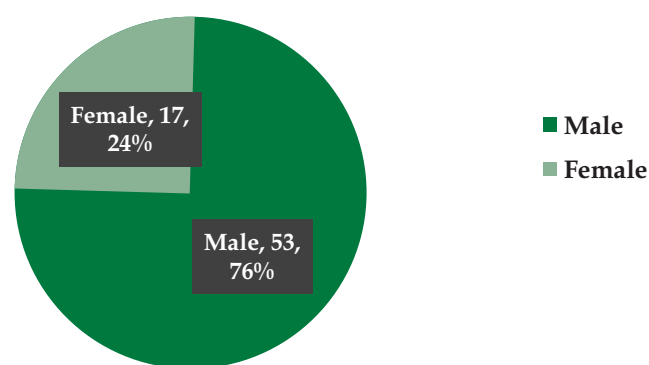


Figure 1: Frequency of gender of participants

Results showed that 15 out of 70 participants were not suffering from depression whereas 55(78.57%) amputees had depression, amongst those 21(30%) amputees had mild depression, 20(28.6%) participants had moderate, 12(17.1%) were presented with moderately severe and only 2(2.9%) participants were suffering from severe depression (Figure 2).

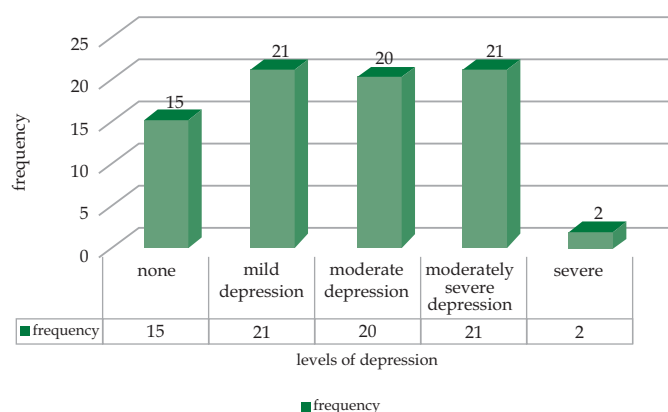


Figure 2: Level of depression among participants

A significant correlation between sleep disturbance and suicidal thoughts with depression in lower limb amputee was found (Table 1). Depression score of individual participants was calculated using statistical analysis. Correlation of depression score with sleep disturbance was 0.492(p 0.000) and correlation of depression score and frequency of suicidal thought is 0.452(p 0.000).

As p value is 0.000 (less than 0.05) so it showed that sleep disturbance and suicidal thoughts had direct relation with frequency of depression.

	Depression score	p value
Sleep disturbance	0.496 *	0.000
Frequency of suicidal thoughts	0.452*	0.000

Table 1: Correlation of depression score with sleep disturbance and suicidal thoughts

Discussion:

Amputation may lead to various psychological issues. Hawamdeh ZM *et al.*, conducted a research on amputees and concluded that 20% of 56 participants had depressive symptoms. Patients were recruited from clinics of Jordan University hospital, and Al-Basheer hospital in Amman Royal Farah Rehabilitation Center, Jordan¹⁴. Majority of the responders had mild depression whereas very few were severely depressed this may be due to the reason that with the time patients start accepting their bodies, gradually they accept the change in their life due

to amputation and start adapting to it. In a systematic review conducted in India by Sahu E *et al.*, it was indicated that depression and other stress related conditions gradually decreases with time¹⁵. Singh R *et al.*, conducted a cohort study in which depression was screened in 105 amputees in rehabilitation ward. It was reported that 28(26.7%) patients had symptoms of depression and other psychological issues were also present in those participants¹⁶. Participants reported that they had trouble sleeping which was significantly correlated to their depression. Those having sleep disturbance were depressed which negatively affect not only their rehabilitation but also their social life. Amputation is a serious tragedy in a person's life which can make a person psychologically unstable that he could have suicidal thoughts which directly indicates presence of depression in that person. People having traumatic amputation suffered from more depression and anxiousness as their pre-amputation time of life could be much better than people already had physical problems and disorders such as diabetes mellitus, which is common cause of amputation in Pakistan and it has several adverse effects on body¹⁷. In previous studies such as in a study conducted by Sing *et al.*, it was indicated that incidence of depression after amputation varies with time. Sometimes, incidence of depression could be 17.6 and 19.1% which was comparable to majority of previous studies but occasionally it could be as high as 41% or much higher rate¹⁸. Frierson RL and *et al.*, in their study explained that psychological issues found in amputees have by far received very poor attention. Patients undergone an amputation process not only suffer from a physical loss but it can also take away various parameters of an individual's life having a major impact on their future life. It is also known that amputees themselves do not focus on psychiatric consultation without psychiatric referral prescribed by any health care provider. Ideally, such life-event stressors are best handled with psychiatric referral. The psychological referral is compulsory in such cases because of various reasons, some of which are behavior problems, flashbacks of previous accidental events, suicidal thoughts and unable to accept body

appearance etc. Moreover, psychiatric consultation can slightly lessen ICU and clinic stays and also promote better behavior and relation with family and friends which directly improve social support and thus improving overall mental and physical health¹⁹.

Conclusions:

The patients who underwent amputation suffered from various psychological consequences such as depression. They had sleep disturbance and suicidal thoughts which were directly associated to depression. The psychological referral is compulsory in such cases because of various psychological reasons to provide holistic care.

Recommendations:

Most of the studies were cross-sectional and no good prospective data was present on depression among lower amputees according to researcher's knowledge, this is needed to be address in future studies.

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