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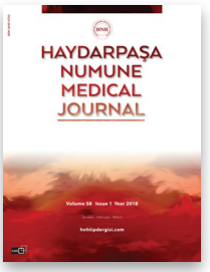

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ORIGINAL ARTICLE

Depression, Social Phobia and Quality of Life after Major Lower Limb Amputation

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Abstract

Introduction: In this study, we aimed to compare the social phobia, depression and quality of life in patients with major lower limb amputation to non-amputated.

Methods: Patients who were underwent above or below the knee amputation in the past were evaluated retrospectively by examining the hospital records. All the participants were administered Liebowitz Social Anxiety Scale (LSAS), Hospital Anxiety and Depression Scale (HADS), and Short-Form 36 (SF-36).

Results: The number of patients was 30 (21 males, nine females) in the amputated group and 30 (22 males, eight females) in the control group. The mean age was 41.8±14.09 years in the amputated group and 43.3±18.68 years in the control group. All LSAS and HADS scores were higher, and SF-36 scores were lower in the amputation group compared to the control group ($p<0.05$). The patients who were amputated more than five years ago had higher LSAS social fear scores, and lower HAD depression scores compared to patients less than five years ($p=0.035$, $p=0.024$, respectively). The employed patients had lower HAD depression and HAD total scores compared to unemployed patients ($p=0.008$, $p=0,049$, respectively). The patients amputated due to medical complications had higher scores in anxiety compared to the patients with traumatic amputation ($p=0.005$, $p=0.016$, respectively).

Discussion and Conclusion: Social phobia, depression and poor quality of life are common problems in patients with major lower limb amputation. After five years, it should not be forgotten that social phobia will increase; depression will decrease along with its seriousness. Therefore, amputated patients should be psychiatrically counseled and treated. It is important to provide permanent employment opportunities to improve the quality of life.

Keywords: Amputation; social phobia; depression, quality of life; psychiatry.

Conventional amputation indications include the treatment of life-threatening trauma and malignancy[1]. Major lower limb amputations remain a challenging problem. Amputated patients have problems in sleeping, concentration, and recalling, which subsequently may lead to the development of anxiety and depression[2]. After two years of amputation, psychological problems regarding physical appearance emerge and then they may cause so-

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cial phobia[3]. In addition, these problems may bring on negative effects on the occupational and social lives of the patients[3, 4].

Many studies have demonstrated that physical disorders may lead to social phobia, and this could negatively affect a person's life[5]. Social and economic rehabilitation of the amputated patients is an important issue. Literature reviews have indicated that there have been very few studies evaluating the psychological parameters of amputated patients[6]. However, to our knowledge, no study has been conducted reporting the social phobia, depression and quality of life in patients with major lower limb amputation and comparing them with a control group.

In this study, we investigated the social phobia, depression and quality of life in patients with major lower limb amputation in comparison to the control group. In addition, we analyzed the subgroups concerning age, gender, cause of amputation, and time since amputation.

Our hypothesis is that in patients with major lower-extremity amputation, social phobia and depression will be a more serious and poorer quality of life when compared to the control group.

Materials and Methods

Patients who were amputated above or below the knee in the past and applied to our clinic between January 2010 and December 2013 were evaluated retrospectively in this study after approval of the local ethics committee. An informed consent was obtained from each participant. Patients older than 18 years of age who completed at least one year after amputation were included in this study. Patients who were diagnosed with psychiatric illness and/or who used the psychiatric drug during or before this study were excluded from this study. The control group was randomly selected among the persons who visited the inpatients at the hospital.

Measures

All the participants were administered Liebowitz Social Anxiety Scale (LSAS), Hospital Anxiety and Depression Scale (HADS), and Short-Form 36 (SF 36).

Liebowitz Social Anxiety Scale (LSAS): LSAS is a questionnaire developed by Liebowitz for measuring the severity of fear and avoidance in social interactions and performance situations. LSAS consists of 24 items, of which 13 items related to performance anxiety and 11 concern social situations. The scale was administered by a clinician and provided scores on six subscales that had a positive correlation with high scores, assessing (I) the severity of social fear, (II) the severity of performance fear, (III) the severity of social avoidance, (IV) the severity of performance avoidance, (V) severity of total fear, and (VI) the severity of total avoidance. The reliability and validity of the Turkish version of LSAS have been shown in previous studies[7].

Hospital Anxiety and Depression Scale (HADS): HADS was first developed by Zigmond and Snaith in 1983[8]. HADS is used for assessing the severity of anxiety and depression and evaluating the risk for these disorders. HADS is suitable for patients with physical disabilities and patients presenting to first-step health centers. The scale provides scores on anxiety and depression subscales. As a patient-reported instrument, HADS is a 4-point Likert-type scale. HADS includes 14 items, of which seven items relate to anxiety, and seven relate to depression. Higher scores correlate with the risk of anxiety and depression. The reliability and validity of the Turkish version of HADS were demonstrated by Aydemir et al.[9].

Short form-36 (SF-36) Quality of Life Survey: SF-36 was developed by Ware and Sherbourne for evaluating the quality of life[10]. The questionnaire consists of 36 items assessing eight aspects of health: vitality, physical functioning, bodily pain, general health perceptions, physical role functioning, emotional role functioning, social role functioning, and mental health. These subscales are scored between 0-100, where 0 indicates poor and 100 indicates good health. The reliability and validity of the Turkish version of SF-36 were demonstrated by Kocyigit et al.[11].

Statistical Analysis

Data were evaluated using SPSS 21.0 for Windows (SPSS Inc., Chicago, IL, USA). Statistical analyses were performed using the Mann-Whitney U test and Student's t-test. A p-value of <0.05 was considered significant.

Results

The number of patients was 30 (21 males, nine females) in the amputated group and 30 (22 males, eight females) in the control group. The mean age was 41.8±14.09 years in the amputated group and 43.3±18.68 years in the control group. The mean time to administer the forms after amputation was 8.77±7.92 years.

There was no significant difference between the amputated and control group regarding age and sex (p=0.69). The results of our study revealed that all LSAS and HAD scores were higher, and SF-36 scores were lower in the am-

Table 1. Comparison of the amputated and control subjects

	Amputation (n=30) Group Mean±SD	Control Group (n=30) Mean±SD	p
Age	41.86±14.09	43.03±18.68	0.786
LSAS performance fear	19.36±4.27	13.03±4.63	<0.001
LSAS social fear	16.00±4.21	12.53±4.43	0.003
LSAS total fear	35.36±7.83	25.93±10.01	<0.001
LSAS performance avoidance	28.73±8.43	12.93±5.24	<0.001
LSAS social avoidance	26.33±9.40	13.03±4.55	<0.001
LSAS total avoidance	55.06±17.42	25.53±9.01	<0.001
LSAS total score	90.50±20.66	52.06±17.92	<0.001
HADS depression	16.60±2.88	4.50±3.18	<0.001
HADS anxiety	15.86±4.00	4.63±2.67	<0.001
HADS total	32.70±6.30	9.10±5.51	<0.001
SF-36 physical functioning	58.70±17.50	82.00±7.38	<0.001
SF-36 physical role functioning	51.66±20.69	86.66±12.68	<0.001
SF-36 pain	47.33±17.20	78.96±12.17	<0.001
SF-36 general health perceptions	51.00±10.11	80.00±9.73	<0.001
SF-36 vitality	42.66±13.50	81.16±10.22	<0.001
SF-36 social role functioning	42.50±19.58	79.16± 16.19	<0.001
SF-36 emotional role functioning	37.74±14.47	78.86±18.54	<0.001
SF-36 SF 36 mental health	34.66±12.75	76.33±13.35	<0.001

LSAS: Liebowitz Social Anxiety Scale; HADS: Hospital Anxiety and Depression Scale.

putation group compared to the control group (Table 1).

The patients who were amputated more than five years ago had higher depression scores when compared to the control group (HADS mean depression; 15.35 versus 3.18) (p=0.006). The patients who were amputated more than five years ago had higher LSAS social fear scores, and lower HAD depression and HAD total scores compared to patients less than five years (p=0.035, p=0.024, p=0.015, respectively) (Table 2).

The patients with below knee amputation (n=23) had lower HAD depression and HAD anxiety scores and higher SF-36 pain scores when compared to the patients with above-knee amputation (n=7) (p=0.024, p=0.015, p=0.046, respectively) (Table 3).

The employed patients (n=15) had higher SF 36 pain and lower HAD depression and HAD total scores when compared to unemployed patients (n=15) (p=0.024, p=0.008, p=0,049, respectively).

The patients amputated due to medical complications

Table 2. Comparison of the psychiatric parameters based on time since amputation

	<5 years (n=16)	>5 years (n=14)	p
LSAS social fear	14.5	17.7	0.035
HADS depression	17.6	15.3	0.024
HADS total	35.25	29.78	0.015

LSAS: Liebowitz Social Anxiety Scale; HADS: Hospital Anxiety and Depression Scale.

Table 3. Comparison of the HADS depression, HADS anxiety, and SF-36 scores based on the location of amputation

	Lower-knee (n=23)	Above-knee (n=7)	p
HADS depression	15.95	18.71	0.024
HADS anxiety	14.91	19.0	0.015

HADS: Hospital Anxiety and Depression Scale; SF-36: Short-Form 36.

(n=10) had higher scores in anxiety when compared to the patients with traumatic amputation (n=20) (p=0.005, p=0.016, respectively).

Discussion

In our study, the findings showed that patients with major limb extremity amputation had a higher severity of social phobia and depression and lower quality of life when compared to the control group.

Social phobia is one of the major problems for the rehabilitation of amputated patients[3, 12–15]. Social phobia may often develop after amputation, and its severity may change over time. Horgan et al.[3] reported that psychological problems related to physical appearance might cause social phobia after two years of amputation. The emergence of social phobia may also decrease the emotional competence of amputated patients, which is required for daily activities[3]. In addition, these problems may cause negative effects on the occupational and social lives of the patients[3, 4]. In our study, LSAS social fear scores were higher in patients with amputation when compared to the control group. The patients with time since amputation of more than five years had higher scores in social phobia compared to the patients with time since amputation of fewer than five years. Therefore, we consider that amputated patients should be provided with prompt and sufficient psychiatric counseling.

Depression after amputation is another important problem for amputated patients[3, 16]. Williamson et al.[17] eval-

uated the time since amputation in 160 amputated patients and reported that the frequency of depression was 21% in the patients with time since amputation of 2-10 years. A limited number of studies has shown that the depression rate increases after two years of amputation[3, 15, 17]. In our study, depression scores were higher in all patients with amputation when compared to the control group. However, the patients with time since amputation of more than five years had lower scores in depression compared to the patients with time since amputation of less than five years, which suggests that the person has been partially successful in dealing with depression by accepting his current situation over the years. However, we may argue that depression remains a severe problem after five years of amputation.

The level of amputation is also an important factor for social phobia and depression. Hagberg et al.[18] reported that adaptation to prosthesis and performance in daily activities provided lower scores in the patients with above-knee amputation when compared to the patients with lower knee amputation. In our study, the patients with lower knee amputation had significantly lower scores in depression and anxiety compared to the patients with above-knee amputation. We think that the higher severity of depression and anxiety in the patients with above-knee amputation, when compared to the patients with lower knee amputation, is because it is more difficult to adapt to prosthesis and daily life activities in the light of the literature. Thus, we consider that psychiatric counseling should be prioritized in patients with above-knee amputation.

Occupational life is a component of social rehabilitation after amputation[3, 19, 20]. Rybarczyk et al.[19] evaluated 89 amputated patients and reported that social life is closely associated with depression. In our study, the severity of social phobia and depression was significantly lower in employed patients when compared to unemployed patients. Sustaining a permanent occupation might have a positive effect on the wellbeing of an amputated patient. Hence, we may conclude that providing permanent employment opportunities for amputated patients and redesigning the workplaces according to their needs are of prime importance.

A limited number of studies is available that compare the patients with traumatic amputation with the patients due to medical complications[3, 21]. Previous studies showed that adaptation to amputation and social rehabilitation was more challenging for the patients amputated due to systemic diseases[3, 21–23]. Jayakaran et al.[23] evaluated 12 patients with lower knee amputation (due to medical complications [n=6] and traumatic causes [n=6]) and reported that anxiety scores were significantly higher in the patients amputated due to medical complications. Similarly, we also found that the anxiety scores were higher in the patients amputated due to medical complications. Thus, our findings are consistent with the literature[15].

It is expected that the quality of life will deteriorate in patients with major amputation[15, 24]. Smith et al.[25] reported negative effects of low back pain, phantom pain, and stump pain on quality of life after lower limb amputations. Ebrahimzadeh et al.[26] reported that psychiatric problems, as well as low back pain, phantom pain, age and employment, affect the quality of life. Hagberg et al.[18] reported that the level of amputation affects daily life activities. In our study, all quality of life subscales were found to be lower in patients with amputation compared to the control group. In the light of the literature, we think that the quality of life in patients with major lower extremities has deteriorated due to many factors, such as psychiatric problems, low back pain, phantom pain, stump pain, age, level of amputation, adaptation to prosthesis and employment.

The limitations of our study are the small number of patients and its retrospective design. More definitive results can be obtained with a larger number of patients and prospective studies.

Conclusion

Social phobia, depression and poor quality of life are common problems in patients with major lower limb amputation. After five years, it should not be forgotten that social phobia will increase and depression will decrease along with its seriousness. Therefore, amputated patients should be psychiatric counseled and treated. It is important to provide permanent employment opportunities to improve the quality of life.

Ethics Committee Approval: The Ethics Committee of Health Sciences University Istanbul Medeniyet University Göztepe Training and Research Hospital provided the ethics committee approval for this study (10.04.2019-2019/0125).

Peer-review: Externally peer-reviewed.

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