

Clinical Research

The Relationship Between Social Phobia and the Stage of the Disease in Patients with Facial Paralysis

Berzan HAZNEDAR^{1,a}, Muhammed AYRAL²

¹Gazi Yaşargil Education and Research Hospital, Otolaryngology, Diyarbakır, Türkiye

²Dicle of University Medical Faculty, Otolaryngology, Diyarbakır, Türkiye

ABSTRACT

Objective: Considering the social communication problems this situation will cause, we studied the relationship between facial paralysis and social phobia.

Material and Method: Our study was approved by Gazi Yaşargil Training and Research Hospital Ethics Committee, and we worked on 80 people as 40 control and 40 case groups. All patients signed informed consent form after objectives and methods of study were explained to them. Patients were examined after signing the informed consent form by experienced physicians. Paralysis of the patients was graded with the House-Brackmann scale. The Liebowitz social phobia symptoms scale was used to measure the level of social phobia. $p < 0.05$ and 95% confidence interval were accepted as statistical significance.

Results: Everyone who experienced facial paralysis and its effects has anxiety about being in public and social environments. This condition manifested itself as a social phobia. In correlation analysis, we realized that a significant correlation was found between the severity of phobia and fact that facial paralysis is in an advanced stage: as a result of Pearson correlation analysis conducted, a weak significant positive correlation was found between the House-Brackmann Grading score and the Liebowitz Social Phobia Symptoms Scale score ($r = 0,281$, $p < 0,05$). Our study noted the patients' undergraduate status, marital status, and age. However, no relationship was found between these values and social phobia.

Conclusion: Our study found a high incidence of social phobia in patients with facial paralysis. The severity of this phobia correlates with the severity of the disease.

Keywords: Central Facial Paralysis, Peripheral Facial Paralysis, Social Phobia.

ÖZ

Yüz Paralizi olan Hastalarda Sosyal Fobi ile Hastalığın Evreleri Arasındaki İlişki

Amaç: Bu durumun yaratacağı sosyal iletişim problemlerini göz önünde bulundurarak yüz felci ile sosyal fobi arasındaki ilişkiyi inceledik.

Gereç ve Yöntem: Çalışmamız Gazi Eğitim ve Araştırma Hastanesi Etik Kurulu tarafından onaylandı ve 80 kişi üzerinde 40 kontrol ve 40 olgu grubu olarak çalıştık. Tüm hastalara çalışmanın amacı ve yöntemi anlatıldıktan sonra aydınlatılmış onam formu imzalatıldı. Hastalar bilgilendirilmiş onam formu imzalandıktan sonra deneyimli hekimler tarafından muayene edildi. Hastaların felçleri House-Brackmann skalası ile derecelendirildi. Sosyal fobi düzeyini ölçmek için Liebowitz sosyal fobi belirtileri ölçeği kullanıldı. $p < 0,05$ ve %95 güven aralığı istatistiksel anlamlılık olarak kabul edildi.

Bulgular: Yüz felci geçirmiş ve etkilerini yaşayan herkes, toplum içinde ve sosyal ortamlarda bulunma kaygısına sahiptir. Bu durum kendini sosyal fobi olarak gösterdi. Korelasyon analizinde fobinin şiddeti ile yüz felcinin ileri bir evre olduğu gerçeği arasında anlamlı bir ilişki olduğunu fark ettik: Yapılan Pearson korelasyon analizi sonucunda House-Brackmann Derecelendirme puanı arasında zayıf ve anlamlı pozitif bir ilişki bulundu ve Liebowitz Sosyal Fobi Belirtileri Ölçeği puanı ($r = 0,281$, $p < 0,05$). Çalışmamızda hastaların lisans durumu, medeni durumu ve yaşı not edildi. Ancak bu değerler ile sosyal fobi arasında bir ilişki bulunamamıştır.

Sonuç: Çalışmamız, Yüz Felci olan hastalarda yüksek oranda sosyal fobi bulmuştur. Bu fobinin şiddeti, hastalığın şiddeti ile doğru orantılıdır.

Anahtar Sözcükler: Merkezi Yüz Felci, Periferik Yüz Felci, Sosyal Fobi.

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ORCID IDs: B.H. 0000-0002-4990-5260, M.A. 0000-0002-2421-4842.

Facial Paralysis is a picture of paralysis that develops due to dysfunction or damage in any place along the entire traces of the facial nerves. There are two types of facial paralysis: central facial paralysis and peripheral facial paralysis (1).

Central Facial Paralysis unilateral damage to the corticobulbar pathway between the cortex and the pons at any level causes upper motor neuron-type paralysis in

the lower Dec of the face on the opposite side of the

lesion (1).

Peripheral facial paralysis is the loss of function in the facial muscles innervated by the damaged fibers resulting from damage to the motor fibers of the nerve anywhere between the motor nuclei in the medulla and its most extreme branch. A unilateral facial paralysis occurs when the facial nerve is damaged on the periphery

(1).90% of peripheral facial paralysis (PFP) is idiopathic (Bell's paralysis)(2). Bell's paralysis is a partial or complete paralysis of the face that begins acutely, usually unilateral. Sir Charles Bell first described it in the 1800s. It occurs with a frequency of 13-34 per 100,000 in the general population and constitutes 60-70% of all facial paralysis. It was seen most often at the age of 15-40 years. The incidence of men and women is equal (3). Many diagnostic tests with different diagnostic and prognostic values, such as serum laboratory tests, viral serological tests, computed tomography, magnetic resonance imaging (MRI), and electrodiagnostic tests, have been used in the evaluation of patients with Bell paralysis (3).

While the most common cause of peripheral facial paralysis in adults is BP, it is trauma in children (2).

As a treatment method, oral antiviral is recommended for ten days in combination with prednisone. The etiology of Bell's palsy includes facial nerve edema caused by viral diseases and facial nerve demyelination that develops secondary to it. The medial foramen of the labyrinth, located proximal to the segment, is the narrowest place in the course of the nerve in the temporal bone with a diameter of 0.68 mm and usually causes edema compression here. Herpes simplex virus is the most common viral agent detected by serological methods.

The diagnosis is made primarily based on anamnesis and physical examination. Initial symptoms include numbness of the face, watery eyes, hyperacusia or decausia, taste disorders, decreased tears, and facial weakness/paralysis progresses within a day or two, reaching its maximum level within three weeks. The most crucial goal in the treatment protocol is to accelerate recovery, ensure that recovery is close to full, to prevent corneal complications and other possible sequelae. Corticosteroids are recommended for treatment because they provide a decrease in edema, an increase in nerve regeneration, and an improvement in motor function. Antiviral therapy is helpful if it is started within 72 hours after the appearance of paralysis. According to various authors, the complete recovery rate of idiopathic Bell's palsy is 60%-85%; the indication rate for the operation is 6%. Surgical decompression is considered if more than 90% degeneration and voluntary facial electromyographic (EMG) activity on the affected side are not detected in electroneurography (EnoG) within two to three weeks compared to the unaffected side (4).

The causes of facial paralysis include congenital abnormalities, infections, inflammatory processes, neoplasms, iatrogenic injury, and trauma Dec. The facial nerve and associated muscles are an integral part of closing the eyes, the proper tearing mechanism, support for breathing through the nose, the formation of a smile, the oral phase of eating, speech production, and emotional transfer (5).

In the case of peripheral facial paralysis, asymmetry occurs on the patient's face with movement or at rest, as there will be dysfunction of the facial muscles. This

condition can cause many psychological problems with patients' changes in aesthetic appearance and functional impairment (2). It can be destructive, negatively impacting function, quality of life, and social interaction. Considering that this condition may cause social phobia, we investigated the relationship between facial paralysis and social phobia.

MATERIAL AND METHOD

In December 2021 and March 2022, patients with facial paralysis who applied to our outpatient clinics of physical medicine and rehabilitation and otolaryngology were included in the study.

This study was planned as cross-sectional. Approval was obtained from the Ethics committee of Gazi Yaşargil Training and Research Hospital. All patients signed the informed consent form after the objectives and methods of the study were explained to them. The patients were examined after signing the informed consent form by experienced physicians. Physicians assessed whether patients were eligible to participate in the study. Magnetic resonance imaging, magnetic resonance angiography, computed tomography, and electromyography were used in the examination. In addition, the hearing functions of the patients were evaluated before all the tests. Persons with impaired hearing functions were not included in the study.

Forty patients aged 18 years and over who were diagnosed with facial paralysis and whose sequelae continued despite the completion of clinical treatment were included in the study. Demographic characteristics of the participants such as age, gender, marital status, profession, education status, height, and weight were recorded.

Persons with a disease related to the central nervous system, current Bell's palsy, concomitant movement disorders, heart failure, pulmonary, renal, or hepatic insufficiency, or any malignancy were excluded from the study. In addition, patients with cognitive impairment, which led to the inability to answer the questions asked reliably, were not included in the study.

Eighty people, including 40 cases and 40 controls, participated in the study. There are 20 women and 20 men in the case group, while 21 women and 19 men are in the control group. The mean age of the case group was 37.35, the standard deviation was 6.71, the mean age of the control group was 36.475, and the standard deviation was 7.77. While 21 of the case group were married and had undergraduate education level, it revealed that 17 of the control group were married and 18 were undergraduates.

The patients were evaluated with the House-Brackmann scale. The Liebowitz social phobia symptoms scale was used to measure the level of social phobia.

House-Brackmann Scale

The House-Brackmann Scale is an analysis tool developed to evaluate facial functions and determine the

degree of paresis/paralysis globally. The House-Brackmann scale was first defined in 1985 in Los Angeles by otolaryngologists Dr. John W. House and Dr. Derald E. Brackmann. It is a widely accepted system. Its application is simple. However, it is sensitive, gives accurate results, and is reliable.

The scale was translated into Turkish by two independent researchers at the beginning. After that, two researchers came together and completed the final version of the translation. Another researcher specializing in neurotology has translated the Turkish version of the scale back into English. At these stages, validity and reliability tests have been completed.

When calculating the score, the upward movement of the middle of the eyebrow and the outward movement of the oral commissure are taken as a basis. 1 point is given for every 0.25 cm movement up to a maximum of 1 cm for eyebrow and oral commissure movement. If the structures can be moved by 1 cm in both movements, 8 points are scored, the maximum score. From the point of view of its objectivity, movements are made both on the normal and affected sides.

Facial functions are graded in 6 stages according to the scores obtained. H-B1 indicates that facial functions are normal, and H-B6 indicates that there is total paralysis (6-8).

Liebowitz Social Phobia Symptoms Scale

Michael Liebowitz developed the Liebowitz Social Phobia Symptoms Scale in 1987 to evaluate the social relationship and performance situations in which individuals with social phobia exhibit fear and/or avoidance behavior. The validity and reliability studies of the scale were conducted by Heimberg et al. (9), and the validity and reliability study of the Turkish form was conducted by Soykan et al. (10). The Cronbach alpha coefficient for the whole scale was found to be 0.98. The Cronbach's alpha coefficient for the fear or anxiety and avoidance subscales is 0.96 and 0.95, respectively (11).

There are 24 items on the scale, 11 of which are social relations and 13 of which are performance. The scale consists of Likert-type items scored between 1-4. The total score is obtained by summing the fear and avoidance scores (12). 55-65 points indicate mild social phobia, 65-80 points indicate moderate social phobia, 80-95 points indicate severe social phobia and 95+ points indicate very severe social phobia (13).

Statistical Analysis

Calculations were made with the SPSS 18 (SPSS, Chicago, Ill., USA). Kolmogorov-Smirnov test was used to evaluate whether the data were in accordance with the normal distribution. Comparisons between the groups were made using the independent samples t-test or the Mann Whitney U test according to the suitability of the data for the normal distribution. The difference between the proportional variables was calculated using the Chi-square test. Spearman correlation analysis assessed the relationship between facial paralysis and

social phobia development. $p < 0.05$ and 95% confidence interval were considered statistically significant.

RESULTS

As a result of the Kolmogorov-Smirnov test, which was carried out to determine whether there was a significant difference between the Liebowitz Social Phobia Symptoms Scale scores of the case group and the control group was observed that the data were not normally distributed ($p < 0.05$) (Table 1).

Table 1. Descriptive statistics.

		Group		Total
		Case	Control	
Gender	Male	20 50,0%	19 47,5%	39 48,8%
	Female	20 50,0%	21 52,5%	41 51,3%
Total		40 100,0%	40 100,0%	80 100,0%
		Group		Total
		Case	Control	
Age	25-33	19 48,7%	19 48,7%	38 48,7%
	34-42	7 15,4%	8 17,9%	15 16,7%
	43-55	14 35,9%	13 33,3%	27 34,6%
Total		40 100,0%	40 100,0%	80 100,0%
		Group		Total
		Case	Control	
Marital Status	Single	19 47,5%	19 47,5%	38 47,5%
	Married	21 52,5%	21 52,5%	42 52,5%
Total		40 100,0%	40 100,0%	80 100,0%
		Group		Total
		Case	Control	
License	No	19 47,5%	22 55,0%	41 51,3%
	Yes	21 52,5%	18 45,0%	39 48,8%
Total		40 100,0%	40 100,0%	80 100,0%

As a result of the Mann Whitney U test, which was conducted to examine whether there was a significant difference between the Liebowitz Social Phobia Symptoms Scale scores of the case group and the control group, there was a significant difference between the groups. ($U = 644,000$, $p < 0.05$) (Table 2).

Table 2. Mann Whitney U Test Conducted to Examine the Scores of the Liebowitz Social Phobia Symptoms Scale Between the Case and Control Group.

Group	N	Average of Ranks	Sum of Ranks	Mann-Whitney U	Z	p
Liebowitz Social Phobia Symptoms Scale	Case	39	42,49	1657,00	644,000	-1,336
	Control	39	26,51	1024,00		
Total	78					0,032

Pearson correlation analysis was performed to examine whether there was a significant relationship between the participants' House-Brackmann Grading and Liebowitz Social Phobia Symptoms Scale scores (Table 3).

Table 3. Pearson Correlation Analysis of the House-Brackmann Grading and Liebowitz Social Phobia Symptoms Scale Scores.

		Liebowitz Social Phobia Symptoms Scale	House-Brackmann Grading
Liebowitz Social Phobia Symptoms Scale	Pearson Correlation	1	0,281*
	p		0,013
	N	39	39
House-Brackmann Grading	Pearson Correlation	0,281*	1
	p	0,013	
	N	39	39

*0.05

As a result of the Pearson correlation analysis, a weak significant positive correlation was found between the House-Brackmann Grading score and the Liebowitz Social Phobia Symptoms Scale score ($r= 0,281$, $p< 0.05$).

DISCUSSION

FP is usually presented in the form of Bell palsy, which is found in the case of peripheral facial paralysis with a generally very unknown etiology. Although there is a dominant incidence in the female gender, its existence is mentioned in studies that do not make significant gender distinctions. In addition, it has been reported many times that the incidence of FP increases with age (14).

In the study performed by Kang et al. (15) with 250 patients diagnosed with FP, 54.8% were female, and 45.2% were male, and it was reported that the frequency of their patients was generally seen between the ages of 50-60. Garanhani et al. (16) also drew attention to the superiority of the female gender with a rate of 60.9% in FP patients they diagnosed between 1999 and 2003. However, Rowlands et al. (17) reported no significant gender variability for 2473 patients with Bell's palsy. Moreover, the incidence of FP increased significantly in patients with 0 onset age and was divided into 15-year periods.

Similarly, in our study, it was observed that the gender distribution of our patients 51.3% were female, 48.7% were male, and the mean age was between 23-33 and 43-55 years.

In the study conducted by Özdemir et al. (18), when patients with a mean admission time of 2.76 ± 2.07 (range=1-7 days) were classified according to the House-Brackmann Scale (HBS) system. Grade 3 facial paralysis was observed most frequently with a rate of 40.0% (n= 40), followed by grade 4 with 26% (n= 26),

grade 5 with 20% (n= 20) and grade 6 with 8% (n= 8), and grade 2 with 6% (n= 6) respectively. When the mean admission times of the cases were evaluated according to the HBS Grading, a statistically significant difference was found between the groups ($p= 0.003$). The longest mean time to admission (3.78 ± 2.527 days) was observed in patients in the grade 3 group, while the shortest mean time to admission (1.63 ± 1.061 days) was observed in the grade 6 group.

When congenital and genetic causes are examined, Melkersson-Rosenthal Syndrome (MRS) and familial facial paralysis are the leading causes of recurrent facial paralysis (19). MRS is a neuro-mucocutaneous granulomatous disease characterized by the triad of recurrent peripheral facial paralysis, painless and non-pitting orofacial edema, and fissured tongue (20). It is a clinically diagnosed disease. The physical examination findings of our cases did not support MRS. Pitts et al. (21) reported the incidence of familial peripheral facial paralysis as 22.8% in their study. It has been reported that familial facial paralysis may be inherited autosomal dominant and may also have variations (22). None of our cases had a familial history of facial paralysis.

Appropriate treatment options should be evaluated by determining the prognosis in FP patients according to the duration of paralysis and disease severity. For this reason, the time between the patient's application to a health institution after the onset of symptoms is vital (23).

In addition, Savettieri et al. (24) made a door-to-door study by using all the data belonging to municipalities in Sicily, with 13,510 participants over the age of 12, and determined that patients with FP applied late or did not apply to health institutions because of mild severe loss of function, short-term paralysis and completely healed symptoms, and highlighted the difficulties in determining the true incidence.

Moreover, it is known that previous FP stories have prognostic value. However, Lee et al. (25) emphasized that it is both physical and psychological benefits for patients with early facial paralysis symptoms to apply to health institutions as soon as possible.

In our study, a classification was made as 39 cases and 39 controls since 1 person filled in the demographic data and left later. House grading scores were high because everyone in the case group had previous facial paralysis. There was a significant difference in the social phobia scores in the case group looking for both groups. Everyone who has had facial paralysis and has seen its effects has anxiety about going out in public and being in social environments. This situation shows itself as social phobia, and in the correlation analysis, a significant correlation was found between the severity of the phobia and the advanced stage of facial paralysis.

In our study, the patients' license status, marital status, and age were noted. However, no relationship was found between these values on social phobia.

Conclusions and Recommendations

- The incidence of social phobia is high in people with facial paralysis
- The severity of this phobia correlates with the severity of the disease.
- This situation is not affected by license status, marital status, age, or gender.
- More specific results can be obtained with higher numbers of analyzes.
- In studies conducted by noting the duration of the disease, it can be examined when social phobia occurs.
- Patients with facial paralysis can also be referred for psychiatry when they come to ENT and FTR outpatient clinics. Therapeutic intervention points related to

SSRIs used for general anxiety and phobia can be examined.

Conflict of interest

There is no conflict of interest in this study.

Limitations

The fact that the number of cases in our study is small can be shown as a limitation. Future studies with high case series are needed. The duration of the disease was not taken into account in our study.

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REFERENCES

1. Acarkan T ve Nazlıkul H. Nervus Fasiyalis Paralizisi. Bilimsel Tamamlayıcı Tıp Regülasyon ve Nöral Terapi Dergisi 2014; 9: 16-21.
2. Şerifler S. Periferik Fasiyal Paralizide Monosit/HDL ve Monosit/lenfosit Parametrelerinin Hastalığın Evresi ve Prognoza Etkisinin Araştırılması (Doctoral dissertation, Ankara Yıldırım Beyazıt Üniversitesi Tıp Fakültesi). 2020.
3. Islamoglu Y, Celik B, Kiris M. Facial paralysis as the only symptom of COVID-19: A prospective study. Am J Otolaryngol 2021; 42: 102956.
4. Erdoğan D ve Bak O. Dirençli Bir Fasiyal Paralizi Olgusunda Nöralterapi İle Çözüm. Bilimsel Tamamlayıcı Tıp Regülasyon ve Nöral Terapi Dergisi 2017; 11: 31-8.
5. Jandali D ve Revenaugh, PC. Facial reanimation: an update on nerve transfers in facial paralysis. Curr Opin Otolaryngol Head Neck Surg 2019; 27: 231-6.
6. Medica EM. Give me a kiss! An integrative rehabilitative training program with motor imagery and mirror therapy for recovery of facial palsy. Eur J Phys Rehabil Med 2019.
7. House JW ve Brackmann DE. Facial nerve grading system. Otolaryngol Head Neck Surg 1985; 93: 146-7.
8. Mengi E, Kara CO, Ardıç FN et al. Validation of the Turkish Version of the Facial Nerve Grading System 2.0. Turk Arch Otorhinolaryngol 2020; 58: 106.
9. Heimberg RG, Horner KJ, Juster HR et al. Psychometric properties of the Liebowitz Social Anxiety Scale. Psychol Med 1999; 29: 199-212.
10. Soykan C, Ozgüven HD, Gençöz T. Liebowitz Social Anxiety Scale: The Turkish version. Psychol Rep 2003; 93: 1059-69.
11. Demir V. Sanatla Terapi Programının Bireylerin Kaygı, Sosyal Kaygı ve Sağlık Kaygısı Düzeyleri Üzerine Etkisi. Int J Soc Sci 2018; 1: 223-34.
12. Ürün ÖD ve Öztürk ÇŞ. Yetişkin bireylerde sosyal görünüş kaygısı ile sosyal kaygı, benlik saygısı ve yaşam doyumunu arasındaki ilişkiler. Adnan Menderes Üniversitesi Sağlık Bilimleri Fakültesi Dergisi 2020; 4: 37-45.
13. Baker SL, Heinrichs N, Kim HJ, Hofmann SG. The Liebowitz social anxiety scale as a self-report instrument: a preliminary psychometric analysis. Behav Res Ther 2020; 40: 701-15.
14. Lockhart P, Daly F, Pitkethly M, Comerford N, Sullivan F. Antiviral treatment for Bell's palsy (idiopathic facial paralysis). The Cochrane Library 2010; 2-12.
15. Kang NR, Tark MR, Byun SM, Ko WS, Yoon HJ. A Clinical analysis on 250 cases of Inpatients with Facial Paralysis. J Korean Med Ophthalmol Otolaryngol Dermatol 2010; 23: 109-21
16. Garanhani MR, Rosa JC, Capelli AD, Ribeiro MC. Physical therapy in peripheral facial paralysis: retrospective study. Braz J Otorhinolaryngol 2007; 73: 106-9.
17. Rowlands S, Hooper R, Hughes R, Burney P. The epidemiology and treatment of Bell's palsy in the UK. Eur J Neurol 2002; 9: 63-7.
18. Özdemir D, Özgür A, Çelebi M et al. Fasiyal Paralizili Hastalarda Başvuru Süresi ile Paralizi Dere-

- cesi Arasındaki İlişki. Sakarya Tıp Dergisi 2019; 9: 544-9.
19. Ropper AH and Samuels MA. Adams and Victor's Principles of Neurology, 9th edn. Boston: mcgraw-Hill, 2009.
 20. Zimmer WM, Rogers RS, Reeve CM, Sheridan PJ. Orofacial manifestations of Melkersson-Rosenthal syndrome. A study of 42 patients and review of 220 cases from the literature. Oral Surg Oral Med Oral Pathol 1992; 74: 610-9.
 21. Pitts DB, Adour KK, Hilsinger RL Jr. Recurrent Bell's palsy: analysis of 140 patients. Laryngoscope 1988; 98: 535-40.
 22. Clement WA, White A. Idiopathic familial facial nerve paralysis. J Laryngol Otol 2000; 114:132-4.
 23. Batman Ç and Binnetoğlu A. Travmatik Periferik Fasiyal Paralizi. Türkiye Klinikleri JENT - Special Topics 2016; 9: 51-5.
 24. Savettieri G, Salemi G, Rocca WA et al. Incidence and lifetime prevalence of Bell's palsy in two Sicilian municipalities. Acta Neurol Scand 1996; 94: 71-5.
 25. Lee SM, Yang SP, Kim ES et al. Admission care for Bell's palsy patients: a qualitative report on patient experiences. J Korean Acupunct & Mox Med Sci 2013; 30: 11-23.