

Short report

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The anxiety between individuals with and without joint hypermobility

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ABSTRACT – Background and Objectives: This study was performed to compare the anxiety disorders between individuals with and without joint hypermobility.

Methods: A total of 94 Turkish volunteers, 40 subjects (38 females, 2 males) with joint hypermobility and 54 controls (47 females, 7 males) without joint hypermobility, were included in this study. We evaluated the joint hypermobility by using the Beighton scoring system in the participants and a Beighton score of at least 4 was considered as joint hypermobility. In addition, all cases were evaluated with Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) and Hamilton Anxiety Rating Scale by a psychiatrist in order to define their psychiatric disorders and anxiety levels, respectively.

Results: Age, gender and educational levels of the participants were similar between these two groups. Mean of anxiety score was higher statistically in the study group (13.5 ± 5.3) than that of the control group (11.1 ± 4.9) ($p < 0.05$). No statistically a significant difference in the ratio of psychiatric disorders according to SCID-I were observed between cases with and without hypermobility.

Conclusions: Anxiety scores have been found significantly higher in the group with hypermobility than that of the group without hypermobility. We strongly recommend the assessment of medical conditions, including joint hypermobility syndrome, in anxiety patients.

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Introduction

Joint hypermobility is a highly heritable clinical condition characterized by an increased distensibility of joints in passive movements and hypermobility in active movements¹. Its prevalence in the general population appears to range between 10% and 15%, and it is more common in women than in men. A strong association between joint hypermobility and anxiety disorders, which has been found both in clinical² and also in nonclinical populations³, must be considered. Interestingly, joint hypermobility and anxiety disorders have similar prevalence in the general population, between 10% and 15%, and have similar female predominance (3:1). Although joint hypermobility syndrome often goes unnoticed, affected individuals may suffer from repeated injuries of the musculoskeletal system³.

Aim of this study was to compare the anxiety and other psychiatric disorders (major depression, panic, dysthymic, generalized anxiety, and obsessive-compulsive disorders) between individuals with and without hypermobility.

Participants and Methods

A total of 94 Turkish volunteers who were admitted to the Rheumatology Outpatient Clinic of Adnan Menderes University, 40 subjects (38 females, 2 males) with joint hypermobility and 54 controls (47 females, 7 males) without hypermobility, were enrolled in this study. Participants had no psychiatric disease that was diagnosed in their medical story.

A physical examination, including the measurement of height and body weight

was performed. The educational levels were interrogated and recorded.

In this study, joint hypermobility was evaluated in the participants by using the Beighton scoring system⁴, and a Beighton score of at least 4 was considered as joint hypermobility. Generally, a Beighton score of at least 4 is defined as hypermobility⁵⁻⁹.

Forty hypermobile subjects were defined as a study group and 54 age and sex-matched participants that had Beighton score 0 were constituted as a control group.

The psychiatrist who performed the psychiatric evaluation did not know to which group each individual belonged. All cases were subjected to Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I)¹⁰ and Hamilton Anxiety Rating Scale by a psychiatrist in order to determine their psychiatric disorders and anxiety levels, respectively. Because of all participants were Turkish, the Turkish version of the SCID-I¹¹ and Hamilton Anxiety Rating Scale were used¹².

Mean difference of age and BMI values among two groups were assessed by using independent-samples t test. The Mann-Whitney U test was used to compare the sex, educational levels and anxiety disorders of subjects with and without hypermobility.

Results

There was no significant difference between these two groups by means of age and BMI ($p > 0.05$). Mean of beighton score was determined to be statistically higher in study group than that of the control group ($p < 0.001$) (Table 1).

Table 1

Comparison of the mean age, body mass index (BMI) and Beighton scores between two groups

Group	Hypermobility (n = 40) Mean (SD)	Control (n = 54) Mean (SD)	p
Age	41.05 ± 12.77	41.38 ± 8.55	> 0.05
BMI (kg/m ²)	25.46 ± 4.83	25.65 ± 5.87	> 0.05
Beighton score	5.35 ± 1.34	0.00 ± 0.00	< 0.001

No statistically a significant difference was found by educational levels and sex between these groups ($p > 0.05$) (Table 2).

The mean of anxiety score in the hypermobility group were found to be significantly higher than that of the control group ($p <$

Table 2

Comparison and distribution of sex and educational levels in the groups

	Hypermobility n (%)	Control n (%)	p
Sex			
Female	38 (95)	47 (87)	> 0.05
Male	2 (5)	7 (13)	
Educational levels			
No education	0 (0)	0 (0)	> 0.05
First level primary	5 (12.5)	8 (14.8)	
Second level primary	21 (52.5)	22 (40.7)	
High school	14 (35)	24 (44.4)	

0.05). No statistically a significant difference in the ratio and frequency of psychiatric disorders according to SCID-I were observed between cases with and without hypermobility ($p > 0.05$) (Table 3).

Discussion

In this study, we aimed to investigate the anxiety levels and frequency of other psychological disorders (major depression, panic, dysthymic, generalized anxiety, and obsessive-compulsive disorders) between

individuals with and without joint hypermobility. Consequently, mean anxiety score was found significantly higher in the study group than that in the control group.

Bulbena *et al.*³ reported that the correlations of joint laxity with trait anxiety were significant. Subjects (N = 526) were assessed with the Hospital del Mar hypermobility criteria and the State-Trait Anxiety Inventory. Scores for trait anxiety, and to a lesser extent state anxiety, were significantly higher among subjects with joint hypermobility syndrome than among subjects without this syndrome.

Table 3
Mean of Hamilton anxiety score and distribution of SCID-I between two groups

	Hypermobility n (%)	Control n (%)	p
Hamilton anxiety score (mean \pm SD)	13.5 \pm 5.3	11.1 \pm 4.9	< 0.05
SCID-I	n (%)	n (%)	
No diagnosis	24 (%60)	31 (57.4)	
Major depression	3 (%7.5)	2 (3.7)	
Dysthymic disorder	5 (12.5)	8 (14.8)	
*Gen. anx. disor.	2 (5.0)	3 (5.6)	> 0.05
Panic disorder	2 (5.0)	3 (5.6)	
*Obses-Comp. disor.	0 (0)	1 (1.9)	
*Gen. anx. disor. + Major depression	4 (10)	6 (11.1)	

*Gen. anx. disor.: Generalized anxiety disorder, Obses-Comp. disor.: Obsessive-Compulsive disorder.

Some studies have shown a strong association between panic disorder/agoraphobia and joint laxity or joint hypermobility syndrome^{3,13-14}. We also evaluated panic disorder in participants of this study. Consequently, no a significant difference was found regarding to panic disorder between these two groups in this study.

In addition, we investigated the presence of major depression, dysthymic, generalized anxiety, and obsessive-compulsive disorders in all of participants and we compared the ratio and rate of these disorders among these subjects with and without joint hypermobility. But, we could not determined a significant difference in these disorders among these two groups.

In the study published in 1998 by the Martin-Santos and *et al.*², in a psychiatric population, was compared the ratio of hypermobility between patients with panic disorder and/or agoraphobia with age- and sex-matched psychiatric and medical comparison subjects, and found joint hypermobility to be 67.7% of the patients with anxiety disorder but in only 10.1% of the psychi-

atric and 12.5% of the medical comparison subjects. Nevertheless, no significant differences were found in the prevalence of mitral valve prolapse between the patients with anxiety disorder and the comparison subjects.

In this study, we researched the rate of obsessive-compulsive disorder in subjects with and without joint hypermobility. While obsessive-compulsive disorder was not found in hypermobility group, this disorder determined in a case of other group. Thus, there was no a significant difference in statistical analyse. A review of the literature did not reveal any study that the frequency of obsessive-compulsive disorder was investigated in subjects with hypermobility.

In conclusion, we found that hypermobile subjects had more anxious than that of the control cases. Our study and other reports concerning this situation demonstrated that a association had between anxiety disorder and hypermobility. Anxiety may also be due to the perception of joint instability and frequent pain and injury without understandable antecedent.

We think that researchers and clinicians should be aware of the fact that anxiety patients suffer from a variety of medical conditions, one of which is joint hypermobility, a disorder that despite the evidence seems to be underrecognized and underdiagnosed. We strongly recommend the assessment of medical conditions, including joint hypermobility, in anxiety patients.

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