



Childhood Traumatic Experiences, Anxiety, and Depression Levels in Fibromyalgia and Rheumatoid Arthritis

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ABSTRACT

Introduction: The close relationship between chronic pain, anxiety, depression, and childhood traumatic experiences is well known. The aim of this study is to investigate childhood traumatic experiences, anxiety, and depression levels in patients with fibromyalgia and rheumatoid arthritis, which are diseases that cause chronic pain.

Method: A total of 30 patients with fibromyalgia, 30 patients with rheumatoid arthritis, and 30 healthy controls, matched with patients with respect to gender, age, and education, were included in the study (90 participants in total). All participants were given a form for sociodemographic characteristics, the Childhood Trauma Questionnaire (CTQ), and Hospital Anxiety and Depression Scale (HAD). Patients were also asked to complete a numeric pain scale (NPS).

Results: Patients with fibromyalgia reported significantly higher scores for CTQ emotional abuse and HAD depression compared with healthy controls. Patients with fibromyalgia reported significantly higher scores for HAD anxiety than both healthy controls and patients with rheumatoid arthritis. Patients with rheumatoid arthritis reported significantly higher scores for CTQ emotional abuse and HAD depression compared with healthy controls. Pain scores of patients with fibromyalgia were higher than in patients with rheumatoid arthritis. Participants who had scores over the threshold on HAD anxiety and depression had significantly higher scores on CTQ sexual abuse.

Conclusion: Both patients with fibromyalgia and patients with rheumatoid arthritis have high levels of childhood traumatic experiences and depression. Patients with pain-related disorders should be examined for childhood traumatic experiences, anxiety, and depression for better treatment outcomes. (*Archives of Neuropsychiatry 2014; 51: 344-349*)

Key words: Fibromyalgia, rheumatoid arthritis, childhood traumatic experiences, anxiety, depression

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Introduction

An abused child can experience childhood traumatic experiences. The types of abuses can be defined as physical abuse, emotional abuse, emotional neglect, physical neglect, and sexual abuse. Physical abuse involves physical punishment behavior and harmful behavior exhibited by caregivers. Emotional abuse involves excessive verbal threats, teasing, insulting criticisms, and comments exhibited by caregivers in such a way that the child's emotional and psychological health is threatened. Emotional neglect involves inadequate satisfaction of the child's requirements, including love, support, interest, attachment, and care. Physical neglect involves inadequate satisfaction of the child's requirements, including nutrition, education, and medical care. Sexual abuse is defined as stroking or stimulation of

the sexual organs of the child or an adolescent by an individual who is at least 5 years older, revealing the sexual organ to the child or forcing the child to show his/her sexual organ, vaginal or anal intercourse, or abuse of the child by way of pornography (1).

Studies have shown that childhood traumatic experiences have negative effects not only on psychological health but also on physical health (2). Psoriasis (3), autoimmune diseases (4), obesity (5), and cardiovascular diseases (6) are some of the physical diseases that have been shown to be related with childhood traumatic experiences. The relationship of pain and pain-related diseases with childhood traumatic experiences is particularly notable (7,8).

On the other hand, the relation of depression and anxiety with pain has been known for a long time. Studies have shown that chronic pain and anxiety and depression frequently occur in association, and the levels of anxiety and depression are higher in patients experiencing pain than healthy controls (9,10).

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Fibromyalgia is a syndrome which is characterized with chronic and diffuse musculoskeletal system pain and many accompanying functional complaints. There has been a consensus on the view that psychological processes and psychosocial stress factors are also characterized in the occurrence of fibromyalgia (11), and no underlying organic cause has been found (12). Rheumatoid arthritis is the most common inflammatory arthritis. Pain and limitation of movement are prominent. Multiple organic factors are involved in the etiology (13).

The aim of this study was to investigate childhood traumatic experiences and anxiety and depression levels in patients diagnosed with fibromyalgia, which is characterized with functional pain, and rheumatoid arthritis, which causes organic pain, and to compare these cases with healthy controls and with each other. Our assumption was that childhood traumatic experiences occurred with a higher rate, and the anxiety and depression levels were higher in patients with a diagnosis of fibromyalgia than patients with a diagnosis of rheumatoid arthritis and healthy controls.

Methods

Participants and Design

Thirty patients who were being followed up with a diagnosis of fibromyalgia in our physical medicine and rehabilitation outpatient clinic and 30 patients who were being followed up with a diagnosis of rheumatoid arthritis and who were in remission were included in our study. In addition, 30 age-, gender-, and education level-matched healthy controls were included. Inclusion criteria included being in the age range of 18-65 years and being at least literate. The subjects who were found to have clinical mental retardation and who had known organic brain disease or organic disease, which could affect mental functions, were not included in the study. In addition, the subjects who had an additional condition, which could cause pain, were not included in the study.

The patients were included in the study consecutively among the outpatients. A total of 117 patients who were diagnosed with rheumatoid arthritis according to the American Rheumatism Association (ARA) (14) were evaluated. In total, 74 patients were excluded because they did not meet the criteria of remission (15). Further, 10 patients were excluded because they were older than 65 years, and three patients were excluded because they were not literate. Thirty-five patients who were diagnosed with fibromyalgia according to the American College of Rheumatology (ACR) criteria (16) were included in the evaluation. Two patients were excluded because they did not give informed consent, two patients were excluded because they were not literate, and one patient was excluded because of a co-diagnosis of multiple sclerosis. The healthy controls were included consecutively among the female hospital cleaning staff who volunteered to participate. In total, 32 individuals were evaluated. One individual was excluded because of the presence of ankylosing spondylitis, and one individual was excluded because of the presence of livedo reticularis.

Written informed consent was obtained from all subjects. The sociodemographic data form was filled in for all subjects who met the study inclusion criteria, and the Childhood Trauma Questionnaire (CTQ) and Hospital Anxiety and Depression (HAD) Scale were administered. In addition, the Numeric Pain Scale (NPS) was given to the patient groups.

The subjects who scored above the threshold in HAD were evaluated and treated by psychiatry.

Tools

Sociodemographic Data Form: This form interrogates the information about age, education level, gender, history of morbidity, familial history, suicide number, suicide type, and suicide attempt in the family. It was developed by the investigators.

Childhood Trauma Questionnaire: This questionnaire was developed by Bernstein et al. to screen traumatic experiences before the age of 18 years (17). It includes a total of 40 items in a 5-point Likert scale. High scores show the frequency of childhood traumatic experiences. It is composed of three subscales: emotional abuse and emotional neglect, physical abuse, and sexual abuse. Its Turkish validity and reliability study was performed by Aslan and Alparslan (18).

Hospital Anxiety and Depression Scale: This scale was developed by Zigmond and Snaith to determine the risk of anxiety and depression and measure their levels and severities (19). It is particularly preferred to be applied in individuals with a physical illness. It is composed of a total of 14 items. Seven of these measure anxiety and seven measure depression. The cutoff point was found to be 10/11 for the anxiety subscale and 7/8 for the depression subscale. It provides a 4-point Likert measurement. Its Turkish validity and reliability study was performed by Aydemir et al. (20).

Numeric pain scale: This scale is used to measure the severity of pain and in the follow-up of pain. It is composed of a 10 cm line marked with numbers from 0 to 10. It provides measurement between 0 and 10 (0=no pain, 10=the severest pain). The patient is asked to mark the point on this line which corresponds to the pain severity he/she feels (21). In this study, the patients were asked to mark the severest pain they felt throughout the day.

Statistical Analysis

The data obtained were analyzed using the Statistical Package for Social Sciences (SPSS Inc. Chicago, IL, USA) ver. 15.0 program. Single factor analysis of variance (ANOVA) was used to compare the fibromyalgia, rheumatoid arthritis, and healthy control groups in terms of age, education level, and scale scores. The Tukey test was used subsequently to determine the groups that created the difference. In each of the three groups, the rates of the subjects who scored above the threshold were compared using the chi-square test. The disease durations and

pain levels of the fibromyalgia and rheumatoid arthritis groups were compared using the independent t-test. The ages, education levels, and scale scores of the groups with and without anxiety and the ages, education levels, and scale scores of the groups with and without depression were compared using the independent t-test. The correlation between age, education level, and scale scores was investigated using Pearson's correlation analysis. In all statistical analyses, a p value of $<.05$ was considered significant.

Results

All subjects included in the study were female. The mean age was 39.1 ± 9.1 years, and the mean education time was 8.3 ± 4.3 years in the fibromyalgia group. The mean age was 42.7 ± 10.5 years, and the mean education time was 6.6 ± 3.1 years in the rheumatoid arthritis group. The mean age was 40.8 ± 8.9 years, and the mean education time was 8.3 ± 3.2 years in the control group. There was no significant difference between the three groups in terms of age and education level.

When the three groups were compared in terms of scale scores, no significant difference was found between the three groups in terms of the CTQ physical abuse and CTQ sexual abuse subscale scores. A statistically significant difference was found between the three groups in terms of the CTQ emotional abuse and emotional neglect and HAD anxiety and depression subscale scores ($F=4.80$, $p=.010$; $F=8.98$, $p<.001$; $F=3.85$, $p=.025$, respectively). The CTQ emotional abuse and HAD depression subscale scores were significantly higher in the fibromyalgia group than the control group ($p=.014$, $p=.049$). The HAD anxiety subscale score in the fibromyalgia group was found to be significantly higher than both the control and rheumatoid arthritis groups ($p<.001$, $p=.023$). The CTQ emotional abuse and HAD depression subscale scores were found to be significantly higher in the rheumatoid arthritis group than the control group ($p=.043$, $p=.046$). The comparison of the three groups in terms of age, education level, and scale scores is summarized in Table 1.

The mean disease duration was 70.4 ± 40.4 months in the fibromyalgia group and 81.5 ± 60.6 months in the rheumatoid arthritis group. There was no statistically significant difference between the two groups in terms of disease time. When the NPS scores of the two groups were compared, it was found that the mean NPS score was 7.4 ± 2.3 in the fibromyalgia group and 3.8 ± 2.0 in the rheumatoid arthritis group, and the NPS score of the fibromyalgia group was found to be significantly higher ($t=6.57$, $p<.001$).

It was found that 63.3% of the fibromyalgia group ($s=19$), 36.7% of the rheumatoid arthritis group ($s=11$), and 23.3% of the control group ($s=7$) scored above the threshold (11 and above) in the HAD anxiety subscale. The rate of the subjects who scored above the threshold in the fibromyalgia group was found to be higher than both the control and rheumatoid arthritis groups ($X^2=9.77$, $p=.004$; $X^2=4.27$, $p=.035$, respectively). It was found that 53.3% of the fibromyalgia group ($s=16$), 50% of the rheumatoid arthritis group ($s=15$), and 33.3% of the control group ($s=10$)

scored above the threshold (8 and above) in the HAD depression subscale; however, no statistically significant difference was found between the three groups.

The subjects were examined by dividing them into two groups according to the score obtained in the HAD anxiety subscale. The subjects who scored 11 and above, which was the cutoff value, were compared with those who scored 10 and below. The mean age in the group who scored above the threshold in the HAD anxiety subscale was significantly lower than the other group ($p=.012$). In the group who scored above the threshold, the CTQ sexual abuse and HAD depression subscale scores were found to be statistically higher ($p=.021$, $p<.001$, respectively). No significant difference was found between the two groups in terms of the other scale scores and education level (Table 2).

The subjects were divided again into two groups according to the score obtained in the HAD depression subscale. The subjects who scored 8 and above, which was the cutoff value for the HAD depression subscale, were compared with those who scored 7 and below. The CTQ sexual abuse and HAD anxiety subscale scores were found to be significantly higher in the group who scored above the threshold ($p=.046$, $p<.001$, respectively). There was no significant difference between the two groups in terms of age, education level, and other scale scores (Table 3).

The fibromyalgia, rheumatoid arthritis, and control groups were examined separately and in association in terms of correlations between age, education level, and scale scores. When the subjects were evaluated in association, a significant correlation was found between the CTQ sexual abuse and HAD anxiety and depression subscale scores ($r=.53$, $p=.009$; $r=.38$, $p=.030$, respectively). Other than this, no statistically significant correlation was found in the analysis of the groups separately and in association, except for correlation of the subscales with each other.

Discussion

Pain is defined as an unpleasant sensory and emotional experience, which occurs as a result of tissue damage (22). On the other hand, there is a close relation of pain and pain-related conditions with psychosocial stress factors and psychological problems (23,24). Fibromyalgia and rheumatoid arthritis, both of which are characterized with pain in the musculoskeletal system, are differentiated by the fact that fibromyalgia has a functional cause and rheumatoid arthritis has an organic cause.

Previous studies have reported that various chronic pain-related conditions, including muscle pain, headache, pelvic pain, and abdominal pain, occur with a high rate in individuals who have traumatic childhood experiences (25,26,27). Similarly, it has been reported that childhood traumatic experiences are reported at a higher level in patients with chronic pain (18,29,30). However, previous studies that investigate the relation of childhood traumatic experiences with pain have not been interrogated if pain has an organic etiology, and only pain reported by the subjects has been considered. In our study, the group with rheumatoid arthritis, which is known to have an organic cause, was also examined.

Table 1. Comparison of the fibromyalgia, rheumatoid arthritis, and control groups in terms of age, education level, and scale scores

	Fibromyalgia (s=30) mean±SD	Rheumatoid arthritis (s=30) mean±SD	Control (s=30) mean±SD	ANOVA	Tukey
Age (years)	39.1±9.1	42.7±10.5	40.8±8.9	F=.64, p=.53	Fibromyalgia control p=.934 Rheumatoid arthritis control p=.730 Fibromyalgia rom. art. p=.,511
Education (years)	8.3±4.3	6.6±3.1	8.3±3.2	F=2.80, p=.07	Fibromyalgia control p=.997 Rheumatoid arthritis control p=.092 Fibromyalgia rom. art p=.107
CTQ-emotional abuse	41.8±12.4	40.4±15.5	32.6±8.2	F=4.80, p=.010	Fibromyalgia control p=.014* Rheumatoid arthritis control p=.043* Fibromyalgia rom. art p=.905
CTQ-physical abuse	26.3±6.7	26.2±7.0	24.5±5.1	F=.80, p=.452	Fibromyalgia control p=.500 Rheumatoid arthritis control p=.538 Fibromyalgia rom. art p=.998
CTQ-sexual abuse	5.8±2.7	5.3±0.9	5.2±0.8	F=1.11, p=.336	Fibromyalgia control p=.352 Rheumatoid arthritis control p=.971 Fibromyalgia rom. art p=.482
HAD-anxiety	11.7±4.4	9.0±3.3	7.5±3.	F=8.98, p<.001	Fibromyalgia control p<.001** Rheumatoid arthritis control p=.305 Fibromyalgia rom. art p=.023*
HAD-depression	7.9±3.3	7.9±3.9	5.7±3.4	F=3.85, p=.025	Fibromyalgia control p=.049* Rheumatoid arthritis control p=.046* Fibromyalgia rom. art p=.999

*p<.05, **p<.001
 CTQ: Childhood Trauma Experiences Scale; HAD: Hospital Anxiety and Depression Scale

Table 2. Comparison of the ages, education levels, and scale scores of the subjects who scored above and below the threshold in the HAD anxiety subscale

	HAD-anxiety ≥ 11 (s=37) mean±SD	HAD-anxiety ≤ 10 (s=53) mean±SD	t	p
Age (years)	38.2±9.0	43.2±9.4	-2.5	.012*
Education (years)	7.9±3.7	7.5±3.6	.63	.533
CTQ-emotional abuse	40.4±13.3	36.8±12.6	1.29	.199
CTQ-physical abuse	26.2±6.6	25.3±6.1	.75	.483
CTQ-sexual abuse	5.9±2.5	5.0±0.4	2.35	.021*
HAD-depression	9.5±3.1	5.5±3.2	5.83	<.001**

*p<.05, **p<.001
 CTQ: Childhood Trauma Experiences Scale; HAD: Hospital Anxiety and Depression Scale.

Table 3. Comparison of the ages, education levels, and scale scores of the subjects who scored above and below the threshold in the HAD depression subscale

	HAD-depression ≥11(s=37) mean±SD	HAD-depression ≤10 (s=53) mean±SD	t	p
Age (years)	40.1±9.5	42.0±9.5	-.99	.325
Education (years)	7.4±3.6	7.9±3.7	-.68	.496
CTQ-emotional abuse	38.8±10.9	37.7±14.4	-.41	.680
CTQ-physical abuse	25.9±7.4	25.3±4.6	-.53	.596
CTQ-sexual abuse	5.8±2.2	5.1±0.3	-2.20	.032*
HAD-anxiety	11.8±3.5	7.4±3.8	5.77	<.001**

*p<.05, **p<.001
 CTQ: Childhood Trauma Experiences Scale; HAD: Hospital Anxiety and Depression Scale.

According to the results of our study, emotional abuse in the childhood was reported at a higher level in the patients with a diagnosis of fibromyalgia than the healthy controls. This supported our assumption. Previous studies have also demonstrated that childhood traumatic experiences are reported at a higher level in patients with a diagnosis of fibromyalgia (31).

On the other hand, it was observed that childhood emotional abuse occurred with a higher rate in the rheumatoid arthritis group than the healthy controls in our study, contrary to our assumption. This suggested that childhood traumatic experiences are related with both functional and organic pain-related conditions. Hence, in a population-based study conducted with a very large sample in Canada, an increase in the risk of arthritis was found in the subjects who had childhood traumatic experiences (32). It may be thought that negative behavior patterns and insufficient coping abilities (33,34) related with childhood traumatic experiences may be effective in terms of this increased risk of chronic diseases, including arthritis, etc., observed in individuals who have had childhood traumatic experiences.

In another study, patients with fibromyalgia and rheumatoid arthritis were compared, and it was reported that childhood traumatic experiences were reported with a higher rate in the fibromyalgia group (35). However, the lack of a control group in this study prevents a comparison with healthy controls and further interpretation. In our study, each of the three abuse types were reported with a high rate in the fibromyalgia group compared with the rheumatoid arthritis group; however, the difference was not statistically significant. This may be related with insufficient statistical power. Further studies should be conducted with larger sample sizes and should involve a control group.

Similarly, the levels of depression are higher in the fibromyalgia and rheumatoid arthritis groups than the healthy controls and similar to each other. Hence, studies conducted with individuals with chronic pain have shown that depression is observed frequently in these groups. Geisser et al. (36) found that a diagnosis of DSM-IV major depression was present with a rate of 33% in individuals with chronic pain. Yazıcı et al. (10) reported that 42.3% of the patients with musculoskeletal system pain scored above the threshold in the HAD depression subscale. In our study, 53.3% of the fibromyalgia group and 50% of the rheumatoid arthritis group scored above the threshold in the HAD depression subscale, and these findings were compatible with the literature.

In our study, it was found that the levels of anxiety were higher in the fibromyalgia group than both the healthy controls and the rheumatoid arthritis group, and the rheumatoid arthritis group was not different from the healthy control group. In total, 63.3% of the fibromyalgia group and 36.7% of the rheumatoid arthritis group scored above the threshold in the HAD anxiety subscale. This rate was reported to be 33.1% by Yazıcı et al. (10) in the group with chronic back or cervical or knee pain due to organic cause, similar to our rheumatoid arthritis group. The much higher rate in the fibromyalgia group may be related with the psychosomatic origin of fibromyalgia. Hence, the level of pain measured by NPS in the fibromyalgia group in our study was also higher than the

rheumatoid arthritis group, and the relation of pain with anxiety in fibromyalgia has been known for a long time (37). Previous studies have also reported that the level of pain and anxiety are higher in fibromyalgia than that in rheumatoid arthritis, but no difference is present between the levels of depression (38).

Anxiety and depression are the most common psychological disorders that have been associated with childhood traumatic experiences, particularly with sexual abuse (39,40,41,42). In our study, it was found that childhood sexual abuse was reported with a higher rate in the subjects who scored above the threshold in the anxiety and depression scales, and a significant correlation was found between the levels of anxiety and depression and childhood sexual abuse. The fact that the level of depression is high in individuals with anxiety and the level of anxiety is high in individuals with depression is an expected finding and suggests a close relation between anxiety and depression (43,44,45).

An interesting finding of our study was the fact that the level of childhood emotional abuse was at a high level in the patients with fibromyalgia and rheumatoid arthritis, whereas sexual abuse was at a high level in the patients whose anxiety and depression levels were above the threshold. Previous literature has not focused much on the types of childhood traumatic experiences when investigating the relation of childhood traumatic experiences with different psychological and physical conditions. Therefore, it would be useful to examine the different types of childhood traumatic experiences separately in future studies.

Fibromyalgia is mostly observed in female individuals (46). Therefore, our sample was composed of women. One of the limitations of our study was the fact that it was conducted only with women, and the results could not be generalized to men. Another limitation was the fact that information about childhood traumatic experiences was interrogated retrospectively, and the questioning was open to the effect of memory illusions. On the other hand, a superiority of our study was the fact that two musculoskeletal with functional and organic causes were examined in association, and a healthy control group was also involved.

Childhood traumatic experiences are experiences that lead to long-term stress on the individual and affect both psychological and physical health negatively. Investigation of childhood traumatic experiences, anxiety, and depression in individuals with pain-related conditions with functional or organic origin and treatment of pain-related diseases with a multidisciplinary approach will provide important findings.

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