

THE EFFECT OF SOCIAL SUPPORT AND SEVERITY OF THE DISEASE ON POSTTRAUMATIC GROWTH IN ANKYLOSING SPONDYLITIS

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ABSTRACT

Aim: Posttraumatic growth (PTG) is described as the positive psychological changes after struggling with highly challenging life circumstances. This study aimed to evaluate PTG in patients with ankylosing spondylitis (AS) who were characterised with posture and joint motion disorders. The clinical and social factors that play a role in the development of PTG were also investigated.

Materials and methods: Eighty AS patients aged 18 to 65 years were included in the study. Disease activity was evaluated by the Bath Ankylosing Spondylitis Disease Activity Index (BASDAI), functional status by the Bath Ankylosing Spondylitis Functional Index (BASFI) and spinal mobility by the Bath Ankylosing Spondylitis Metrology Index (BASMI). For the evaluation of the positive psychological changes posttraumatic growth inventory (PTGI) was used, as multidimensional scale of perceived social support (MSPSS) and ways of coping inventory were respectively used to assess social support and coping strategies.

Results: The population consists of 58 male and 22 female subjects. The mean total scores of PTG, total social support and coping inventory were 67.90 ± 18.96 , 66.42 ± 14.52 and 96.97 ± 10.43 , respectively. The total PTG scores were significantly higher in women than in men ($p=0.016$). BASDAI and BASFI were negatively correlated with PTG, whereas ways of coping and social support were positively correlated with PTG ($p=0.001$, $r=0.352$; $p=0.044$, $r=0.226$).

Conclusion: Social support and ways of coping have a positive effect, whereas disease severity and poor functional index have a negative effect on the development of PTG.

Key words: Ankylosing spondylitis, posttraumatic growth, social support, ways of coping.

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Introduction

Ankylosing spondylitis (AS) is a chronic, systemic, inflammatory disease that particularly affects the axial skeleton and peripheral joints. It is common in young men aged 20 to 40 years⁽¹⁾. The prevalence of AS was 0.49 in our region⁽²⁾. Genetic and environmental factors play a role in the aetiology of this disease. The clinical presentation of AS is characterised by chronic pain, morning stiffness, restriction of movement and posture disorders, which affect the daily routines of patients⁽¹⁾. Although non-steroidal anti-inflammatory drugs, sulfasalazine, methotrexate and TNF- α antagonist have been used in the treatment of AS, none of them can be considered as curative⁽³⁾.

Consequently, psychological disorders, such as anxiety and depression, are frequently proved in these patients^(4,5). Nevertheless, aside from these negative psychological disorders, patients may also develop some positive changes, such as posttraumatic growth (PTG). PTG is identified as the positive psychological changes experienced as a result of the struggle with highly challenging life circumstances⁽⁶⁾. These changes can be seen in different areas, including self-perception, interpersonal relationships and life philosophy⁽⁷⁾. Social support is directly related to PTG and leads to the formation of positive coping⁽⁸⁾. Although reports on this subject carried out in patients with rheumatoid arthritis, cancer and coronary artery disease have been conducted, no clinical trial has been performed on

patients with AS⁽⁹⁻¹²⁾. To the best of our knowledge, this study is the first to evaluate PTG and social support in AS patients.

This study aimed to assess AS patients in terms of PTG and to investigate the clinical and social factors that are likely to play a role in the development of PTG.

Materials and methods

The study protocol was reviewed and approved by the local ethics board of Mustafa Kemal University. Informed consent was obtained from each participant.

Participants

AS patients who were diagnosed according to the modified New York criteria and those who were admitted to the outpatient clinic of Physical Medicine and Rehabilitation were included in the study⁽¹³⁾. Patients with psychiatric disorders, additional systemic diseases (diabetes, hypothyroidism, cancer, etc.) and previous joint operation history (arthroplasty, arthrodesis, etc.); illiterate patients; and pediatric patients were excluded.

Sociodemographic and clinical characteristics of participants

Patient age, occupation, marital status, education level, income level, place of residence, duration of disease and drugs used were recorded. Disease activity, functional status and spinal mobility of patients were assessed by the Bath Ankylosing Spondylitis Disease Activity Index (BASDAI)⁽¹⁴⁾, Bath Ankylosing Spondylitis Functional Index (BASFI)⁽¹⁵⁾ and Bath Ankylosing Spondylitis Disease Metrology Index (BASMI)⁽¹⁶⁾, respectively. Laboratory parameters, erythrocyte sedimentation rate (ESH, mm/hour) and C-reactive protein (CRP, mg/dl) levels were also measured.

Post Traumatic Growth Inventory

The Turkish version of posttraumatic growth inventory (PTGI) with proven validity and reliability was used to determine the positive psychological changes. PTGI consists of five sub-groups with 21 items: relating to others (7 items), new possibilities (5 items), personal strength (4 items), spiritual change (2 items) and appreciation for life (3 items). Each item ranges from 0 (I did not experience this change as a result of my disease) to 5 (I experi-

enced this change excessively as a result of my disease). The total score ranges from 0 to 105^(6,8).

Multidimensional Scale of Perceived Social Support

To assess social support, the Turkish version of the multidimensional scale of perceived social support (MSPSS), which has proven reliability and validity, was used. MSPSS consists of 12 questions that address support of family, friends and other important people. Answers are rated from 1 (very strongly disagree) to 7 (very strongly agree). The total score ranges from 12 to 84⁽¹⁷⁾.

Ways of Coping Inventory

The ways of coping inventory (WCI) has 66 items that determine the cognitive and behavioural strategies people use in stressful circumstances. We used the modified and shortened Turkish version consisting of 42 questions with proven validity and reliability. The answer format of this scale is scored from 1 to 3 (1 = never, 2 = sometimes, 3 = always). The total score ranges from 42 to 126^(18,19).

Statistical Analysis

Statistical analysis was done by statistical package for the social sciences (SPSS) for Windows version 21.0 (SPSS, Chicago, IL). Descriptive statistics (frequency, percentage, mean and standard error) were used in data assessment. The normal distribution of continuous variables was evaluated with Kolmogorov-Smirnov test. Kruskal-Wallis test was used to compare more than two groups. The mean values of two groups were assessed by Student's T-test. The median values were evaluated by Mann-Whitney U test. The level of statistical significance was set top < 0.05.

Results

A total of 80 patients (58 men and 22 women) were included in the study. The mean age of patients was 40.91 ± 10.17 , and the mean disease duration was 8.36 ± 6.96 years. A total of 65 (81.3%) AS patients used anti-TNF agents, 10 (12.5%) used non-steroidal anti-inflammatory drugs and 5 (6.3%) used sulfasalazine. The demographic, clinical and characteristics of patients are shown in Tables 1 and 2.

The mean total PTG score of patients was 67.90 ± 18.96 . The highest score was found in the relating to others subscale (22.65 ± 7.18). The mean

total social support score was 66.42±14.52. Patients were found to have mostly received support from family members (24.22 ± 5.93). PTG and social support scores are shown in Table 3.

	Minimum	Maximum	Mean	SD
Age (years)	18	65	40.91	10.17
Disease duration (years)	1	30	8.36	6.96
BASMI	5	15	8.52	2.49
BASDAI	0	10.5	3.06	2.11
BASFI	0	9.7	3.33	2.48
CRP (mg/dl)	3.3	51.7	12.04	11.77
ESH (mm/h)	2	57	19.62	14.42

Table 1: Demographic and clinic patient data.

BASMI: Bath ankylosing spondylitis metrology index; BASDAI: Bath ankylosing spondylitis disease activity index; BASFI: Bath ankylosing spondylitis functional index; CRP: C-reactive protein; ESR: Erythrocyte sedimentation rate; SD: Standard deviation

Variables	N	%
Gender		
Male	58	72.5
Female	22	27.5
Marital status		
Married	66	82.5
Single	14	17.5
Education		
8 years under	57	71.3
8 years above	23	28.8
Employment		
Unemployed	46	57.5
Employed	34	42.5
Monthly incomea		
Less than 500 TL	31	38.8
500-1000 TL	37	46.3
1000-2000 TL	9	11.3
2000 TL and above	3	3.8
Place of residence		
Big cityb	29	36.3
Cityc	28	35
Townd	8	10
Villagee	15	18.8

Table 2: Characteristics of study group.

a TL is Turkish Lira. 1 TL=3.05 Euro; b Population more than 200.000 people; c 10.000-200.000; d 1.000-10.000; e Population less than 1.000

	Minimum	Maximum	Mean	SD
Total PTG	16	101	67.9	18.96
Relating to others	5	35	22.65	7.18
New possibility	2	25	13.75	5.12
Personal strenght	0	28	13.55	4.63
Spiritual change	0	10	7.65	2.48
Appreciation of life	0	18	10.5	3.36
Social support	14	84	66.42	14.52
Family	4	28	24.22	5.93
Friends	4	28	18.52	6.48
Significant others	6	28	23.7	5.65

Table 3: The subscales of PTG and social support
PTG: Posttraumatic growth; SD: Standard deviation

PTG scores in women were significantly higher than those in men (p = 0.016). PTG subscales of relating to others (p = 0.004), spiritual change (p = 0.035) and appreciation for life (p = 0.030) were significantly higher in women than in men. No significant difference was found between men and women in the personal strength and new possibilities subscales (Fig 1). When two age-related groups (patients under and over the age of 41) were created, no significant difference was found between the two groups in terms of PTG (p = 0.222). Marital status, educational level, employment status, income level, place of residence and drugs used did not affect PTG scores (p=0.604, p=0.154, p=0.573, p=0.075, p=0.964 and p=0.462, respectively). PTG was negatively correlated with BASDAI and BASFI (p = 0.002, r: -0.344; p = 0.001, r: -0.350). No correlation was found between BASMI and PTG (p=0.179, r=-0.152). Social support and ways of coping were positively correlated with PTG (p=0.001, r=0.352; p=0.044, r=0.226).

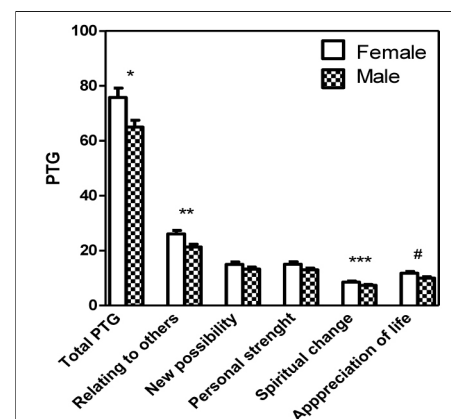


Fig. 1: The comparison of PTG scores in male and female patients.
* p=0.016, ** p=0.004, *** p=0.035, # p=0.030

Discussion

The results of this study show that AS patients with low disease activity, good functional status, high social support and effective coping strategies are more likely to develop PTG. PTG levels in a variety of diseases may be associated with different sociodemographic characteristics. Rahmani et al.⁽¹¹⁾ conducted a study on cancer patients and concluded that PTG is significantly high in young and highly educated patients. Leung et al.⁽¹²⁾ reported that PTG is more likely to be high among young, low-educated female patients with coronary artery disease. In a meta-analysis, PTG was reported to be higher in women than in men, similar to our results⁽²⁰⁾. By contrast, some studies found no relationship between sociodemographic characteristics and PTG⁽²¹⁻²³⁾. These different results may be associated with the different number of patients, regional differences and variation of clinical diagnosis of patients.

Change in perspective of the world because of an experienced traumatic event plays a key role in the development of PTG. The severity of the traumatic event can also affect the degree of PTG⁽¹²⁾. Karanci et al.⁽²⁴⁾ reported a positive correlation between the degree of PTG scores and post-traumatic stress disorder caused by accidents and different traumatic events such as natural disasters. Blix et al.⁽²⁵⁾ reported high PTG scores in individuals who were exposed to severe trauma during the bombing in Oslo in 2011. Thombre et al.⁽²²⁾ conducted a study on cancer patients and concluded that PTG scores were higher in relapse patients than in patients with no relapse. However, Dirik et al.⁽⁹⁾ evaluated the PTG scores of rheumatoid arthritis patients and reported no association between PTG and disease activity. Kimhi et al.⁽²⁶⁾ found a significantly negative correlation between severity of war exposure and PTG scores. In our study, we found a significantly negative correlation between disease severity and PTG scores. Moreover, the functional index of patients negatively correlated with PTG scores. These findings show that the improvement of the functional status of patients leads to increased PTG scores. That is, patients with low disease activity and good functional status have a better positive outlook and self-expression.

Studies have been conducted on the effect of social support and coping ways on PTG scores. Social support and positive coping have been shown to positively affect PTG scores. Moreover,

positive coping is more effective than social support⁽²⁷⁾. Dirik et al.⁽⁹⁾ conducted a study on rheumatoid arthritis patients and concluded that social support and coping ways are positively correlated with PTG. Social support may also be a factor that strengthens coping ways. In breast cancer patients, breast cancer-specific social support in the early period after treatment was shown to have a positive effect on PTG and could be a predictor of increased PTG scores^(8,28). In a meta-analysis of factors affecting PTG, optimism, social support and coping were found to be associated with PTG. The effect of social support on PTG was moderate, and the effect of coping on PTG ways was high⁽²⁹⁾. In a trial conducted on coronary artery disease patients, coping ways positively affected PTG, but social support had no effect on PTG⁽³⁰⁾. These findings show that social support and coping ways are positively correlated with PTG, similar to our study.

The limitations of our study should be noted. The sample size of patients was relatively small, and patients were from the same region and had similar cultural characteristics. As our study is a cross-sectional study, only the current situation of the patients was assessed. Therefore, further studies with longer follow-up periods and patients with different clinical, ethnic, socio-economic and cultural characteristics are required.

In conclusion, social support and coping ways have a positive effect on the development of PTG, whereas disease severity and poor functional status have a negative effect on PTG scores in AS patients.

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