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RELATIONSHIP BETWEEN ALEXITHYMIA AND MUSCULOSKELETAL PAIN, JOB STRESS, JOB AND LIFE SATISFACTION IN YOUNG ACADEMICIANS WORKING IN THE FIELD OF HEALTH SCIENCES

ORIGINAL ARTICLE

ABSTRACT

Purpose: This study aimed to determine the relationship between alexithymia and musculoskeletal pain, job stress, job and life satisfaction in young academicians.

Methods: Ninety-three young academicians (73 females; mean age=29.50±5.33 years) were included. The prevalence of alexithymia was assessed with the Toronto Alexithymia Scale-20 items (TAS-20). Musculoskeletal pain and pain intensity were evaluated by the Nordic Musculoskeletal Questionnaire (NMQ) and Numeric Pain Rating Scale (NRS). The job stress, job, and life satisfaction were investigated by the Perceived Job Stress Scale (PJSS), the Minnesota Satisfaction Questionnaire (MNQ) and the Satisfaction with Life Scale (SLS), respectively.

Results: The prevalence of alexithymia (TAS-20 score >60) in all participants was 15%. There was no significant difference in NMQ, NRS, PJSS, MNQ, and SLS between low-, middle- and high-normal alexithymia subgroups (p>0.05). The NMQ analysis indicated that approximately 39.8% of the participants had musculoskeletal pain; the prevalence of pain was higher in the neck (73.1%), low back (63.4%) and shoulder (55.9%) regions. The TAS-20 was not correlated with NMQ, PJSS, MNQ, and SLS (p>0.05). There was a negative correlation between pain intensity at rest and SLS (r=-0.324, p=0.015). In addition, the pain intensity during activity was correlated with PJSS (r=0.268, p=0.035) and SLS (r=-0.317, p=0.017).

Conclusion: Alexithymia was not related to musculoskeletal pain, job stress, and job and life satisfaction in young academicians. However, increased pain intensity related to decreased life satisfaction and increased perceived job stress level. Therefore, the high prevalence of pain in the neck, low back and shoulder should not be ignored by young academicians.

Key Words: Alexithymia; Musculoskeletal Pain; Satisfaction.

SAĞLIK ALANINDA ÇALIŞAN GENÇ AKADEMİSYENLERDE ALEKSİTİMİ VE MUSKULOSKELETAL AĞRI, İŞ STRESİ, İŞ VE YAŞAM MEMNUNİYETİ ARASINDAKİ İLİŞKİ

ARAŞTIRMA MAKALESİ

ÖZ

Amaç: Genç akademisyenlerde aleksitimi ve muskuloskeletal ağrı, iş stresi, iş ve yaşam memnuniyeti arasındaki ilişkiyi araştırmaktı.

Yöntem: Sağlık alanında çalışan 93 genç akademisyen (73 kadın; ortalama yaş, 29,50±5,33 yıl) çalışmaya dahil edildi. Aleksitimi prevelansı değerlendirmesinde Toronto Aleksitimi Ölçeği-20 madde (TAS-20) kullanıldı. Muskuloskeletal ağrı ve ağrı şiddeti İskandinav Kas İskelet Sistemi Anketi (NMQ) ve Numerik Ağrı Derecelendirme Skalası (NRS) ile değerlendirildi. İş stresi, iş ve yaşam memnuniyeti sırasıyla Algılanan İş Stresi Ölçeği (PJSS), Minnesota Memnuniyet Anketi (MNQ) ve Yaşam Doyumu Ölçeği (SLS) kullanılarak ölçüldü.

Sonuçlar: Katılımcıların % 15'i aleksitimik idi (TAS-20 skoru >60). Düşük-, orta- ve yüksek-normal aleksitimi alt grupları arasında NMQ, NRS, PJSS, MNQ ve SLS açısından fark yoktu (p>0,05). NMQ analizi, katılımcıların yaklaşık % 39,8'inde kas iskelet sistemi ağrısı olduğunu; ağrı prevalansının boyun (% 73,1), bel (% 63,4) ve omuz (% 55,9) bölgelerinde daha yüksek olduğunu gösterdi. TAS-20 sonuçları ile NMQ, PJSS, MNQ ve SLS ilişkili değildi (p>0,05). İstirahatteki ağrı şiddeti ile SLS arasında negatif bir ilişki vardı (r=-0,324, p=0,015). Ek olarak, aktivite sırasındaki ağrı şiddeti ile PJSS (r=0,268, p=0,035) ve SLS ilişkili bulundu (r=-0,317, p=0,017).

Tartışma: Sağlık alanında çalışan genç akademisyenlerde aleksitimi ile muskuloskeletal ağrı, iş stresi, iş ve yaşam memnuniyeti ilişkili değildi. Ancak, artmış ağrı şiddeti ile azalmış yaşam memnuniyeti ve artmış iş stresi ilişkiliydi. Bununla birlikte, genç akademisyenlerde boyun, bel ve omuz bölgelerinde saptanan yüksek ağrı prevelansı göz ardı edilmemesi gerektiği görüşündeyiz.

Anahtar Kelimeler: Aleksitimi; Muskuloskeletal Ağrı; Memnuniyet.

INTRODUCTION

Musculoskeletal pain is a known result of overuse, repetitive strain and work-related musculoskeletal disorders (1). It is multifactorial and resulted in due to the interactions between various risk factors varying across several occupations (2). Office workers, school teachers, and health care professionals are the most common occupations which have high physical risk factors (3). Complex interactions between physiological, psychological and sociocultural factors in occupation might lead to global challenge based on interconnected consequences like as decreasing efficiency of work, productivity and well-being at work (4). Several studies have investigated the cause and effect relationship between musculoskeletal pain and psychological and physical factors (1,3,4). The general idea of these studies is psychological and physical causes are the indicators of musculoskeletal pain (1,3,4). Another critical factor is the repetitive movements, which increase the incidence of shoulder pain in the general population (4). Health care professionals suffer from frequently low back pain (71.6%), shoulder pain (46.8%), and neck pain (42.2%) (5). Similar to school teachers, academicians demonstrated that most painful areas were neck (44.7%), shoulder (40.4%), upper and lower back (33.3%) (3).

Academicians face various challenges such as lack of physical infrastructure, working with professionally insufficient personnel, financial resources problems and mobbing in universities (6). In addition to these, young academicians could face with being burnout due to the negative mood, emotional dysregulation and negative emotions such as being depressed, anxious, unhappy at work (7). All of these factors can cause physical and psychological problems such as emotional blindness (alexithymia), high job stress, low job and life satisfaction and pain (4). Alexithymia is considered as a deficit in cognitive processing and emotional regulation which is characterized by difficulty in identifying feelings and distinguishing between feelings and the bodily sensations of emotional arousal (8). The studies investigating the relationship between alexithymia and chronic pain reported that there is a positive association between alexithymia and pain (9,10). However, a small number of studies suggested that alexithymia was not significantly related to pain intensity in patients with chronic pain (11).

Since the number of health sciences faculties is increasing each year in Turkey (12), young academicians take a more active role in the academic process. Although there is a limited number of study which focuses on academicians' musculoskeletal pain (3), there is no study evaluating the relation between alexithymia and musculoskeletal pain, job stress, job and life satisfaction in young academicians. Therefore, this study aimed to determine whether alexithymia related to musculoskeletal pain, job stress, and job and life satisfaction in young academicians working in the field of health sciences. The hypothesis was alexithymia related to musculoskeletal pain, job stress, and job and life satisfaction in young academicians working in the field of health sciences.

METHODS

Participants

The present study had a cross-sectional and observational design. It was carried out between June and August 2017, in the academicians who were employed in two different universities. One hundred and seven consecutive participants were screened for inclusion criteria whereas 93 participants agreed to participate in the study. Inclusion criteria consisted of being older than 22 years old and lower than 35 years old, working as an academician in the field of health sciences, and agreed to participate in the study. The exclusion criteria were having any communication difficulties, psychotic disorder or undergoing psychiatric treatment, any orthopedic, cardiorespiratory, neurological, and rheumatological problems diagnosed by a medical doctor, and presence of surgery history at least one year ago.

Each participant was asked to sign an informed consent form. The study was conducted based on the principles outlined in the Declaration of Helsinki of 2013, and the study protocol was approved by Okan University Ethics Committee (No: 85-21.6.2017).

Outcome Measurements

The characteristics of participants (age, gender, marital status, education, working time) were questioned by the Sociodemographic Data Form. Musculoskeletal pain and the pain intensity at rest, during activity, at night were evaluated by the Nordic Musculoskeletal Questionnaire (NMQ) and Numeric Pain Rating Scale (NRS), respectively. Perceived job stress, job, and life satisfaction were assessed using the Perceived Job Stress Scale (PJSS), the Minnesota Satisfaction Questionnaire (MNQ) and the Satisfaction with Life Scale (SLS), respectively.

The Toronto Alexithymia Scale-20 items (TAS-20) are a self-report scale that is comprised of 20 items that reflects three domains of alexithymia: Difficulty describing feelings, difficulty identifying the feeling, externally-oriented thinking. The total alexithymia score is the sum of responses to all 20 items, which are rated by using a 5-point Likert scale whereby 1=strongly disagree, and 5=strongly agree (13). The cut-off point of the TAS-20 score higher than 60 was used to classify the participants as alexithymic. Subsequently, the non-alexithymic group was classified into three subgroups: Low-normal alexithymia (score<44), middle-normal alexithymia (score 44-50) and high-normal alexithymia (score 51-60) based on their total scores in the present study (14). The Turkish version of TAS-20 is a reliable and valid score in the Turkish population (15).

The Nordic Musculoskeletal Questionnaire (NMQ) is widely used for assessing the presence and severity of musculoskeletal symptoms. This questionnaire consists of 27 items analyzing the period prevalence (12 months), point prevalence (7 days) and the presence of musculoskeletal pain symptoms. These are aches, pain, and discomfort in nine different parts of the body as neck, shoulders, elbows, wrists/hands, upper back, lower back, hips/thighs, knees, and ankles/feet. All answers are given according to a dichotomous "yes or no" response (16). The Turkish version of the NMQ has been shown to be a valid and reliable scale to measure the presence of musculoskeletal symptoms (17).

The Numeric Pain Rating Scale (NRS) was used for an assessment of pain intensity at rest, during activity and at night. Participants were asked to make pain ratings, corresponding to current pain via a horizontal line, 10 cm in length, with 0 indicating no pain and 10 severe pain (18).

The Perceived Job Stress Scale (PJSS) is a scale to assess perceived job stress and consists of the 15 items that are rated using a 5-point Likert scale whereby 1=never/anytime and 5=often/every time. The score is the sum of all the items and dividing them by 15 (19). Final score was used to classified the participants into categories based on the stress levels that are A=1.0-1.3; B=1.4-1.9; C=2.0-2.5; D=2.6-3.1; E=3.2-3.4, and F=3.5-4.0. Category A, B, E, and F stress levels might impact motivation and threaten health, while C and D were stress levels lead to a positive effect on success (20). The Turkish version of the PJSS was a valid and reliable scale (21).

The Minnesota Satisfaction Questionnaire-short form (MSQ-short form) is the questionnaire that includes 20-item with two dimensions: intrinsic job satisfaction and extrinsic job satisfaction. Each item is rated on a 5-point Likert scale, ranging from 1 (very dissatisfied) to 5 (very satisfied). Intrinsic job satisfaction includes 12 items while extrinsic job satisfaction includes eight items. The neutral satisfaction score is three based on the sum of the score (22). The final score higher than 3 indicates high job satisfaction; smaller than 3 indicate low job satisfaction. The Turkish version of MSQ-short form was a valid and reliable score (20).

The Satisfaction with Life Scale (SLS) has 5-items that assess global life satisfaction concerning the quality of life. It assesses how satisfied people are with their lives in general. All items are rated using a 7-point Likert scale on which 1=strongly disagree, 2=disagree, 3=slightly disagree, 4=neutral, 5=slightly agree, 6=agree, and 7=strongly agree. The total score ranges from 5 to 35 points, with higher scores indicating greater life satisfaction (23). The SLS was shown as a reliable and valid instrument for the assessment of life satisfaction in the Turkish population (24). All the required permissions for the questionnaires were provided.

The questionnaires were distributed to the participants and face to face interview method was used for the data collection. A consultation was

Table 1: Characteristics of the Study Population According to the Toronto Alexithymia Scale-20 Score Level.

Parameters	Total	TAS-20 Score				p
		Low-Normal (<44)	Middle-Normal (44-50)	High-Normal (51-60)	Alexithymic (>60)	
	(n=93)	(n=13)	(n=32)	(n=34)	(n=14)	
	Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean±SD	
Age (years)†	29.50±5.33	28.38±5.82	29.54±5.75	30.00±4.88	28.50±3.69	0.802
Gender (Women), n (%)‡	73 (78.5)	12 (92.3)	32 (85.5)	22 (64.7)	11 (78.5)	0.528
Marital Status (Married), n (%)‡	44 (47.3)	6 (46.1)	13 (40.5)	15 (44.1)	10 (71.4)	0.084
Daily Duration of Working (hours)†	8.38±0.84	8.38±0.86	8.42±0.99	8.35±0.69	8.25±0.50	0.961
Musculoskeletal Pain, n (%)‡						
Never	30 (32.2)	6 (46.2)	13 (31)	8 (23.5)	0 (0)	0.137
Sometimes	26 (28)	1 (7.7)	9 (21.4)	10 (29.4)	7 (50)	
Always	37 (39.8)	6 (46.2)	20 (47.6)	16 (47.0)	7 (50)	
NRS (0-10)†						
Rest	2.85±1.81	2.42±2.07	2.72±1.88	3.04±1.60	3.50±2.38	0.747
Activity	4.58±1.94	4.14±2.47	4.48±2.01	4.60±1.67	6.00±2.16	0.476
Night	2.46±2.16	2.85±1.95	2.27±2.18	2.39±1.92	3.50±2.64	0.715
TAS-20 (5-100)†	49.36±8.39	38.69±5.89	47.16±1.97	54.17±2.52	65.00±2.30	**0.001***
PJSS (1-5)†	2.67±0.49	2.60±0.44	2.56±0.50	2.64±0.46	3.13±0.23	0.152
MSQ (1-5)†						
Total	3.61±1.29	3.48±0.44	3.48±0.56	3.67±1.15	3.20±0.23	0.614
Intrinsic	3.55±0.77	3.72±0.58	3.60±0.63	3.65±0.57	3.14±0.96	0.595
Extrinsic	3.75±0.50	3.27±0.44	3.05±0.74	3.20±0.57	3.12±0.70	0.657
SLS (5-35)†	24.32±6.10	24.69±6.82	25.19±4.92	24.23±6.15	21.75±0.18	0.668

*p<0.05, †One-way ANOVA, ‡Chi-square Test, *p<0.05. NRS: Numeric Pain Rating Scale, TAS-20: Toronto Alexithymia Scale-20, PJSS: Perceived Job Stress Scale, MSQ: Minnesota Satisfaction Questionnaire, SLS: Satisfaction with Life Scale.

Table 2: Prevalence of the Musculoskeletal Pain According to Body Regions.

Region	Trouble (ache, pain, discomfort) at Any Time Last 12 Months	Change Jobs or Duties at Any Time Last 12 Months	Pain at Any Time Last 7 Days
	n (%)	n (%)	n (%)
Neck	68 (73.1)	22 (23.7)	35 (37.6)
Shoulders	52 (55.9)	13 (14.0)	20 (21.5)
Upper Back	14 (15.1)	3 (3.2)	3 (3.2)
Elbows	37 (39.8)	13 (14.0)	12 (12.9)
Wrists/Hands	41 (68.8)	24 (25.8)	28 (30.1)
Low Back	59 (63.4)	25 (26.9)	30 (32.3)
Hips/Thighs	18 (19.4)	4 (4.3)	11 (11.8)
Knees	37 (39.8)	5 (5.4)	14 (15.1)
Ankles/Feet	36 (38.7)	11 (11.8)	16 (17.2)

provided by researchers when the participants had questions. It took about 15 min to fill out the questionnaires.

Statistical Analysis

The SPSS 21.0 software package (SPSS Inc., Chicago, IL, USA) was used to evaluate data and analyze descriptive statistics (frequencies, mean, standard deviation). Statistical analysis was performed at a 95% confidence level, and the statistical significance level was set as 0.05. The Kolmogorov-Smirnov test was used to assess the distribution of data. In the present study, data were distributed normally, therefore, a parametric test was used for statistical analysis. The One-way ANOVA and Student's t-test were used to analyze the continuous variables and the Chi-square test was used for categorical variables when comparing the demographic data between the subgroups. Correlations between the number of painful regions, pain intensity, alexithymia, and the other parameters were analyzed using Pearson correlation analysis (specifically, r=0.50-1.00 was strong; r=0.30-0.49 was medium, and r= 0.10-0.29 was weak).

RESULTS

A total of 93 participants, whose mean age was 29.50±5.33 years, were included in the study. Seventy-one percent of the participants were working for one to three years, and about 26% of them was working for four to six years. Only two participants were working for seven years and longer. Forty-three percent of the participants were working in physiotherapy and rehabilitation; 23.6% of participants were working in nursing; 18.2% of participants were working in nutrition and dietetics; 15% of participants were working in midwifery. Approximately, 43.3% of the participants had stress levels that might impact motivation and threaten health; 51.8% of the participants had low job satisfaction. The characteristics of the participants according to TAS-20 levels were summarized in Table 1. The prevalence of alexithymia (TAS-20 score >60) in all participants was 15% (n=14; 10 women, four men). There was no relationship between the TAS-20 subgroups and age, gender, marital status, working hours presence of the musculoskeletal pain, pain intensity, alexithymia, job stress, job, and life satisfaction (p>0.05).

Approximately 39.8% of the participants had musculoskeletal pain at any parts of their body. The NMQ analysis indicated that among those with having pain at any time during the last 12 months, the pain prevalence was highest in the neck (73.1%), low back (63.4%) and shoulders (55.9%) than in other regions of the body (Table 2). In addition, the primary pain regions induced any changing jobs or duties at any time the last 12 months were the neck (37.6%), low back (32.3%) and wrists/hands (30.1%) in the participants.

The differences between "yes" and "no" responders were only analyzed for the primary pain regions, which were the neck, low back, and shoulders (Table 3). There were no differences between "yes" and "no" responders of having pain at any time

Table 3: The Differences between "Yes" and "No" Responders in The Most Frequent Painful Region.

Parameters	Neck Pain			Low Back Pain			Shoulder Pain		
	No (n=25)	Yes (n=68)	p	No (n=34)	Yes (n=59)	p	No (n=41)	Yes (n=52)	p
TAS-20†									
Total	49.36±8.39	49.29±6.32	0.961	48.70±8.14	49.88±5.93	0.516	49.29±7.48	49.32±6.28	0.982
Low-Normal	36.19±5.19	36.95±6.87	0.722	37.22±5.58	39.52±5.68	0.747	37.13±6.21	38.45±4.28	0.544
Middle-Normal	46.27±6.11	47.32±6.84	0.515	48.16±6.11	49.42±5.96	0.472	44.32±5.68	45.47±5.26	0.438
High-Normal	52.17±7.52	54.19±8.32	0.487	54.43±7.87	56.12±6.44	0.442	52.17±6.52	53.17±7.85	0.426
Alexithymic	65.52±8.35	66.02±7.15	0.194	63.17±7.10	64.96±8.10	0.209	61.12±8.55	61.86±8.30	0.253
PJSS†	2.67±0.49	2.60±0.47	0.516	2.68±0.40	2.58±0.51	0.365	2.55±0.47	2.67±0.48	0.234
MSQ†									
Total	3.61±1.29	3.51±0.59	0.618	3.51±0.68	3.56±0.91	0.797	3.60±1.01	3.49±0.66	0.524
Intrinsic	3.55±0.77	3.64±0.55	0.524	3.56±0.58	3.65±0.64	0.535	3.63±0.61	3.61±0.62	0.875
Extrinsic	3.75±0.50	3.55±0.52	0.516	3.44±0.52	3.83±0.40	0.153	3.43±0.53	3.75±0.46	0.239
SLS†	24.32±6.10	24.73±5.51	0.751	25.05±5.87	24.37±5.66	0.578	24.56±5.93	24.67±5.47	0.922

†Student's t-test. TAS-20: Toronto Alexithymia Scale-20, PJSS: Perceived Job Stress Scale, MSQ: Minnesota Satisfaction Questionnaire, SLS: Satisfaction with Life Scale.

Table 4: Relation between the Number of Painful Regions, Pain Intensity, Alexithymia, Job Stress, Job Satisfaction, and Life Satisfaction.

Measurements	Number of Painful Regions at Any Time Last 12 Months		Number of Painful Regions Induced Any Changing Jobs or Duties at Any Time Last 12 Months		Number of Painful Regions at Any Time Last 7 Days		NRS-Rest		NRS-Activity		NRS-Night	
	r	p	r	p	r	p	r	p	r	p	r	p
NRS												
Rest	-0.021	0.862	-0.021	0.832	-0.022	0.842	1.000	1.000	**0.398**	**0.001***	**0.506**	**<0.001***
Activity	0.016	0.918	0.230	0.067	-0.085	0.494	**0.398**	**0.001***	1.000	1.000	**0.313**	**0.012***
Night	0.130	0.312	0.168	0.206	0.088	0.499	**0.506**	**<0.001***	**0.313**	**0.012***	1.000	1.000
TAS-20	0.107	0.308	0.194	0.068	0.102	0.318	0.088	0.495	0.124	0.327	0.086	0.525
PJSS	0.015	0.872	0.086	0.434	0.116	0.297	0.164	0.204	**0.268**	**0.035***	0.154	0.235
MSQ												
Total	-0.004	0.972	-0.077	0.469	0.058	0.596	0.018	0.894	0.016	0.885	0.002	0.984
Intrinsic	0.080	0.401	-0.124	0.225	0.136	0.187	-0.034	0.794	-0.038	0.802	-0.098	0.462
Extrinsic	0.066	0.518	0.126	0.245	0.119	0.267	0.056	0.686	-0.086	0.514	0.136	0.301
SLS	-0.013	0.884	-0.168	0.124	0.046	0.676	**-0.324**	**0.015***	**-0.317**	**0.017***	-0.189	0.141

*p<0.05, Pearson Correlation Test, r (p). Pearson Correlation Test. NRS: Numeric Pain Rating Scale, TAS-20: Toronto Alexithymia Scale-20, PJSS: Perceived Job Stress Scale, MSQ: Minnesota Satisfaction Questionnaire, SLS: Satisfaction with Life Scale.

during the last 12 months concerning alexithymia, job stress, job and life satisfaction (p>0.05).

There was no correlation between the number of painful regions, pain intensity, alexithymia, job stress, job and life satisfaction (p>0.05) (Table 4). There was a negative correlation between pain intensity at rest and SLS (r=-0.324, p=0.015). The pain intensity during activity was correlated with PJSS (r=0.268, p=0.035) and SLS (r=-0.317, p=0.017).

DISCUSSION

The present study revealed that alexithymia was not related to musculoskeletal pain, job stress, and job and life satisfaction in young academicians working in the field of health sciences. Besides, there was no difference in musculoskeletal pain levels, job stress, job and life satisfaction between low-normal, middle normal, high normal subgroups of alexithymia. An essential finding of the present study was the pain intensity at rest and during activity was negatively correlated with life satisfaction, and also pain intensity during activity was positively associated with job stress. It has also been found that there was a high prevalence of pain in the neck, low back, and shoulder in young academicians working in the field of health sciences.

Pain has a multidimensional nature, which is suggested to consist of at least two dimensions: Affective component and sensory component. Affective component is related to the unpleasant experiences of pain whereas the sensory component indicates the intensity of pain (25,26). A recent review have indicated that there is a specific relation only between alexithymia and the affective dimension of pain in patients with chronic pain. They concluded that prevalence of alexithymic features, especially difficulties in identifying feelings, is high in all the different chronic pain conditions whereas the association between alexithymia and pain intensity is not always clear (25). In another study, Makino et al. pointed out that alexithymia was not significantly associated with pain intensity but alexithymia was moderately associated with pain interference and catastrophizing in patients with chronic pain (9). Similarly, in the present study could not conduct differences in age, gender, the presence of the musculoskeletal pain and pain intensity among the subgroups of the TAS-20 score. Besides, there was no difference in alexithymia score between "yes" and "no" responders in respect to the most frequent painful region. A possible reason for these results would be because our study sample consisted of young healthy individuals without any chronic pain conditions, and also the majority of them classified into non-alexithymic based on their total TAS-20 scores. Although we could not show any statistical differences, the pain intensities at rest, during activity and at night were higher in the alexithymic group compared to the non-alexithymic subgroups (low-normal alexithymia, middle-normal alexithymia, and high-normal alexithymia). Using a one-dimensional measurement to assess pain might be the reason that we could not find a relationship between pain levels and alexithymia.

In the present study, the pain prevalence was highest in the neck, low back and shoulders than in other regions of the body. Mohan et al. (3) indicated that neck, shoulder, upper and lower back were the most common painful regions whereas the least common painful region was elbow among academician. These findings were consistent with our results. Besides, the overall prevalence of pain among the participants was 39.8% in our study. This result was not consistent with Mohan et al. study, which indicated approximately 83.3% of the academicians had musculoskeletal pain at any parts of their body (3). Different results would arise from 71% of our participants have teaching experience between one to three years and only two participants was working for seven years and longer; hence the majority of them might predispose to a lesser impact of musculoskeletal risk factors.

Negative mood, emotional dysregulation and negative emotions such as being depressed, anxious, unhappy may predispose to chronic pain which is often accompanied by alexithymia and depression owing to the affective dimension of pain (27,28). Recent researches have demonstrated that lifetime pain exposures, cognitions, stress responses, and emotions have an impact on pain perception (26,27). Academicians are often exposed to work-related stress mainly associated with excessive workload, emotional and physical exhaustion (29). All these negative factors may

lead to increase the perception of musculoskeletal pain and decrease the efficiency at the place of work (14). There were no differences in the level of job stress in either the TAS-20 score level or between "yes" and "no" responders in the most common painful region. Differently, it was found that the pain intensity during activity and job stress related to each other. These results indicated instead of alexithymia, the young academicians with high pain levels would have higher job stress.

Similar to the relationship between job stress and alexithymia results, there was no difference in the level of job and life satisfaction according to the TAS-20 score. Stalnacke et al. (30) showed that life satisfaction is related to pain intensity, anxiety, depression, post-traumatic stress, and disability in individuals with chronic pain. Similar to these results, the present study found that increased pain during activities related to decreased life satisfaction and also increased job stress level. In addition to these results, it was also found that the increased pain at rest associated with decreased life satisfaction. These results were consistent with the previous findings (30).

The present study had some limitations that should be highlighted. First, as an inclusion criterion, it was required the participants' declarations that they do not have any psychotic disorder or undergoing psychiatric treatment, specific musculoskeletal pain, orthopedic, cardiorespiratory, neurological, rheumatological problems diagnosed by a doctor. Second, the levels of depression, anxiety or physical activity were not assessed. Third, this study was based on a cross-sectional and self-reported data collection. Thus, concluding causal associations among all variables is difficult. Fourth, because the overall prevalence of pain and alexithymia in all participants were low in our study, including the participants who reported a high level of pain and alexithymia would affect the results. Finally, the fact that all the participants were young academicians who have been starting to work in the field of health sciences not too long ago limits the generalization of the results.

In conclusion, this study found that there was no significant difference in the presence of the musculoskeletal pain, pain intensity, and job stress, job and life satisfaction between the alexithymic and the nonalexithymic groups. Alexithymia was not associated with the musculoskeletal pain, pain intensity, and job stress, job and life satisfaction in young academicians working in the field of health sciences. However, an increase in pain intensity was related to a decrease in life satisfaction and increase in job stress level. We could not show any relationship between alexithymia and musculoskeletal pain, job stress, job and life satisfaction whereas a high prevalence of the neck pain, low back pain and shoulder pain in healthy young academicians should not be ignored. Future longitudinal studies are required to investigate the relationship between alexithymia and musculoskeletal pain, job stress, job and life satisfaction in academicians with longer work experience and working in different fields.

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