

## The Impact of Myofascial Shoulder Pain on Hopelessness State among Women in Turkey

(Kesan Sakit Bahu Miofascia pada Keadaan Keputusan dalam Kalangan Wanita di Turki)

NAZIM KARALEZLI, OZGE IPEK & AHMAD M. SALEH\*

### ABSTRACT

*One of the major complaints of patients for consulting primary healthcare providers is shoulder pain. The most common causes of this problem are subacromial impingement syndrome (SIS). The aim of the current study was to evaluate the hopelessness status of women with myofascial shoulder pain and to compare them with women suffering from traumatic pain. The prospective study design was used in the current study, 60 women were assigned equally to Myofascial group (group M), a group where women complain of shoulder pain, palpable, and tender myofascial trigger points, and 30 women who sustained traumatic shoulder pain in the control group (group T). Beck Hopelessness Scale was used to detect the hopelessness level. Mann Whitney U test was used for statistical analysis.  $P < 0.05$  was considered significant. The results showed that the mean was a statistically significant difference between the groups regarding hopelessness state (7.4) for the myofascial group and (3.8) for the traumatic group,  $P < 0.05$ . Hopelessness status of women with myofascial shoulder pain should be acknowledged because women may need social and psychological support in addition to medical treatment to overcome their complaints.*

*Keywords: Mann Whitney U; musculoskeletal pain; shoulder injuries; women's groups*

### ABSTRAK

*Salah satu daripada aduan utama pesakit terhadap perunding penyediaan jagaan kesihatan primer adalah sakit bahu. Penyebab yang biasa daripada masalah ini adalah sindrom penekanan subakromial (SIS). Tujuan kajian ini adalah untuk menilai status keputusan para wanita dengan sakit bahu miofascia dan untuk membandingkan mereka dengan wanita yang mengalami penderitaan sakit traumatik. Reka bentuk kajian prospektif telah digunakan untuk kajian ini. Enam puluh (60) wanita telah dipilih secara sama rata untuk mewakili kumpulan miofascia (kumpulan M), kumpulan wanita yang mengadu sakit bahu, terpalpatkan dan titik pencetus miofascia lembut dan 30 wanita yang mengalami sakit bahu trauma mewakili kumpulan terkawal (kumpulan T). Skala 'Beck Hopelessness' telah digunakan untuk mengesan tahap putus asa. Ujian U Mann-Whitney telah digunakan untuk analisis statistik.  $P < 0.05$  dianggap sebagai nilai bererti. Keputusan menunjukkan nilai min mempunyai perbezaan statistik yang ketara antara kumpulan-kumpulan mengenai keadaan putus asa (7.4) untuk kumpulan miofascia dan (3.8) untuk kumpulan trauma,  $P < 0.05$ . Status putus asa daripada wanita dengan sakit bahu miofascia sepatutnya diakui kerana wanita mungkin memerlukan sokongan dari segi sosial dan psikologi dan juga rawatan perubatan untuk mengatasi aduan mereka.*

*Kata kunci: Kecederaan bahu; kumpulan wanita; sakit muskuloskeletal; U Mann Whitney*

### INTRODUCTION

Compromised shoulder movement due to pain, stiffness, or weakness can cause substantial disability and affect a person's ability to carry out daily activities (eating, dressing, personal hygiene) and work (Calvo-Lobo et al. 2018). One of the major complaints of patients consulting for primary healthcare providers is shoulder pain (Kuijpers et al. 2006; Reilingh et al. 2008). Self-

reported shoulder pain is estimated to be between 16 and 26%; it is the third most common cause of musculoskeletal consultation in primary care, and approximately 1% of adults consult a general practitioner with new shoulder pain annually (Mitchell 2005). The most common causes of this problem are subacromial impingement syndrome (SIS), and myofascial pain produced by myofascial trigger points (MTPs) (Bron et al. 2011; Gerwin et al. 1997; Koester

et al. 2005; Morrison et al. 1997; Simons 2002; Skootsky et al. 1989). MTPs are defined as exquisitely tender spots in discrete taut bands of hardened muscle that produce symptoms known as myofascial pain. They are classified into active and latent trigger points. Active MTPs cause a clinical pain complaint, are always tender, prevent full lengthening of the muscle, weakens the muscle. Latent MTPs are clinically quiescent with respect to spontaneous pain and are painful only when palpated. A latent MTP may have all the other clinical characteristics of an active MTP and always has a taut band that increases muscle tension and restricts the range of motion (Simons et al. 1999). Palpation is still considered the only reliable clinical method of diagnosing MTPs.

The underlying pathophysiological mechanisms for MTPs are still unclear. For that reason, a functional holistic approach to shoulder pain, including adequate analgesia, is important to motivate patients and encourage rehabilitation (Calvo-Lobo et al. 2018). However, all therapeutic modalities including rehabilitation, injection therapy, medication, and physical therapy may sometimes be conflicting or lacking (Bergman et al. 2010; Camarinos & Marinko 2009; Dorrestijn et al. 2009). Surgery should be considered when conservative measures fail (Bergman et al. 2010).

Beck Hopelessness Scale is a 20-item self-evaluation type scale developed by Dr. Aaron T. Beck (Beck et al. 1974). It was designed to measure three major aspects of hopelessness: feelings about the future, loss of motivation, and expectations. The evaluation criteria are given points from 1 to 20. The greater points show a greater level of hopelessness. The aim of this study was to evaluate the hopelessness status of women with myofascial shoulder pain using the Beck Hopelessness Scale and to compare them with women suffering from traumatic pain.

#### MATERIALS AND METHODS

The study method and protocol were reviewed and approved by the ethical committee in the hospital (*EXT 040 – 31/10/2018*). Permission to use questionnaire was achieved by the original author, written informed consent was obtained from all participants who agreed to participate in the study. All participants were reviewed by the primary researcher to ensure the eligibility of the participants to participate in the study. After that, the written informed consent was obtained from each participant.

#### SUBJECTS

The prospective study consisted of 60 women in Turkey. Thirty (30) women with shoulder pain more than 3

months, palpable and tender myofascial trigger points, included in the myofascial group (group M) and thirty (30) women who sustained traumatic shoulder pain more than 3 months included in the control group (group T). Exclusion criteria for the myofascial group were systemic illness, supraspinatus tendon tear, cervical disc herniation, acromioclavicular and glenohumeral joint arthritis. Only patients with traumatic shoulder pain were included in the control group. Patients with palpable and tender myofascial trigger points were excluded from the control group despite sustained traumatic pain.

The sample size was determined according to G\* power software which was used to compute the sample size (Faul et al. 2007). To have a power of 0.80 with medium effect size, a total sample of 48 participants is required. An expected 25% attrition rate was added to avoid the risk of bias, which is usually of concern if the rate exceeds 20% (Polit & Beck 2010). Thus, an additional number of 12 participants were included to give a total of 60 participants in the sample, 30 participants in each group.

#### INSTRUMENT

Data were collected with face to face interview technique by an advanced practice nurse (AY) who has experience in physical examination. Beck Hopelessness Scale was used to detect the hopelessness level (Table 1). The hopelessness scale is valid and differentiates depressive patients from control subjects. The scale has a good reliability (test-retest,  $r = .81$ ) and a good internal consistency ( $\alpha = .97$ ) for depressive subjects and  $\alpha = .79$  for control subjects (Bouvard et al. 1992). The patients were also questioned for socio-demographic variables like age, occupation, educational level, economic income level, and dissension with their husbands.

#### DATA ANALYSIS

In both two groups participants were sub-grouped according to educational level (group 1: elementary school, group 2 high school and higher), age (group A:  $\leq 30$ , group B: 30-40, group C:  $> 40$ ), having an occupation (group X: have an occupation, group Y: no occupation), income level (group  $\alpha$ : low income, group  $\beta$ : intermediate-high income) and dissension between parents (group #: having problem, group &: no problem). Patient Characteristics between groups were compared together (Table 2). Mann Whitney U was used for statistical analysis.  $P < 0.05$  was considered as significant.

TABLE 1. *Beck Hopelessness Scale*

This questionnaire consists of a list of twenty statements. Please read the statements carefully one by one. If the statement describes your attitude for the past week, including today, write 'T' or 'true'. If the statement is false for you, write 'F' or 'false'. Please be sure to read each sentence.

- 1) I look forward to the future with hope and enthusiasm.
- 2) I might as well give up because there's nothing I can do to make things better for myself.
- 3) When things are going badly, I am helped by knowing that they can't stay that way forever.
- 4) I can't imagine what my life would be like in ten years.
- 5) I have enough time to accomplish the things I most want to do.
- 6) In the future, I expect to succeed in what concerns me most.
- 7) My future seems dark to me.
- 8) I happen to be particularly lucky and I expect to get more of the good things in life than the average person.
- 9) I just don't get the breaks, and there's no reason to believe that I will in the future.
- 10) My past experiences have prepared me well for my future.
- 11) All I can see ahead of me is unpleasantness rather than pleasantness.
- 12) I don't expect to get what I really want.
- 13) When I look ahead to the future I expect I will be happier than I am now.
- 14) Things just won't work out the way I want them to.
- 15) I have great faith in the future.
- 16) I never get what I want, so it's foolish to want anything.
- 17) It is very unlikely that I will get any real satisfaction in the future.
- 18) The future seems vague and uncertain to me.
- 19) I can look forward to more good times than bad times.
- 20) There's no use in really trying to get something I want because I probably won't get.

TABLE 2. Comparison of mean scores for sociodemographic variables among patients between the myofascial group and traumatic group

Sociodemographic variables	P-value, $P < 0.05$
Educational level	$P = 0.04$
Age	$P = 0.02$
Having an occupation	$P = 0.80$
Income level	$P = 0.02$
Dissension between parents	$P = 0.002$

#### RESULTS AND DISCUSSION

The location of trigger points was mostly in the infraspinatus muscle. The average age of participants in each group was 38.9 years in myofascial group and 41.3 in the control group. 7 and 9 patients were younger than 30 (23.3 and 30%), 11 and 10 were between 30 and 40 (36.7 and 33.3%), 12 and 11 were older than 40 (40 and

36.7%) in myofascial and control groups respectively. The educational level was an elementary school in 25 and 21 participants (83.3 and 70%) and high school and higher in 5 and 9, respectively (16.7 and 30%). While 10 of the patients (33.3%) in the myofascial group had an occupation, 15 patients (50%) in the control group had an occupation, 20 patients (66.7%) in the myofascial group

and 15 (50%) in control group were housewives. According to their income level, 20 and 15 patients (66.7% and 50%) had low, 10 and 15 (33.3% and 50%) had intermediate and good income levels in myofascial group and control group, respectively. While 22 (73.3%) of the patients in the myofascial group had problems with their husbands, 8 (26.7%) of them mentioned that they did not have such problem. Fourteen (14) patients (46.7%) in the control group had marital problems and 16 (53.3%) did not.

The results showed that the average of hopelessness in the myofascial group was statistically significantly higher than the control group ( $U = 110, p = .014$ ). The mean hopelessness scores (7.4),  $p < 0.05$  compared to (3.8),  $p < 0.05$ , respectively.

MTPs are local points, that are highly sensitive to pressure, the application of which causes characteristically referred to sensations, including pain, muscle dysfunction, and sympathetic hyperactivity (Simons et al. 1999).

In clinical practice, the identification of MTPs is usually performed by palpation (Bron et al. 2007; Ge et al. 2008). The most frequently located in the infraspinatus and upper trapezius muscles. In the present study, MTPs of the patient were mostly in the infraspinatus muscle in agreement with the literature (Barbero et al. 2019; Bron et al. 2011; Calvo-Lobo et al. 2018).

In recent years, our understanding of the etiology, pathophysiology, and management of MTPs has increased. However, the underlying pathophysiological mechanism for MTPs is still unclear and multimodal rehabilitation, injection therapy, medication, surgery, physical therapy or the application of other therapies in patients with MTPs may sometimes be problematic (Borges & Macedo 2010; Metzker 2017).

Beck hopelessness scale is scored between 0 and 20. The scale between 0-4 indicates that there is no hopelessness, between 4-8 shows mild, between 8-14 moderate and over 14 shows severe hopelessness (Albuquerque-Sendín et al. 2018; Mystakidou et al. 2008). Although the overall average hopelessness scale of 7.4 in our study shows that there is mild hopelessness of patients with shoulder pain with MTPs, the average hopelessness scale of the patients with low education level, low income, and dissension with their husbands were  $7.80 \pm 2.64$ ,  $8.20 \pm 2.56$  and  $8.18 \pm 2.44$ , respectively. This shows that women who have low income and who have problems with their husbands have moderate hopelessness and those with low education have almost moderate hopelessness. Among these parameters, low economic income has the most effect on hopelessness. It was reported in the literature that hopelessness level over 7 increases the suicide risk (Mystakidou et al. 2008). The levels detected in this study show that there may be a higher suicide risk for women with myofascial shoulder pain than the normal population. To the best of our knowledge, this is the first

study that evaluates the hopelessness status of patients with myofascial shoulder pain.

The strength of this study was diminished by the small size of the series. Also, there were patients suffering from ankle pain in the traumatic group. We had to add these patients because of a smaller number of patients with a shoulder trauma. But we have decided to assess the hopelessness level of women who attended the hospital with an objective complaint with similar age, occupation, education level, economic status, and marital problems as possible.

#### CONCLUSION

As conclusion dissension between parents, low economic income, and low educational level elevate hopelessness levels may have a relation in patients with myofascial pain around the shoulder. Assessing the hopelessness status of women with myofascial shoulder pain can be beneficial because these patients may need social and psychological support in addition to the current treatment regimens to overcome their complaints. Also forming family support groups may decrease hopelessness levels of women having dissension with their husbands.

#### ACKNOWLEDGEMENTS

The authors would like to thank the Deanship of Scientific Research at Prince Sattam Bin Abdulaziz University. The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

#### REFERENCES

- Albuquerque-Sendín, F., Madeleine, P., Fernández-de-Las-Peñas, C., Camargo, P.R. & Salvini, T.F. 2018. Spotlight on topographical pressure pain sensitivity maps: A review. *Journal of Pain Research* 11: 215.
- Barbero, M., Schneebeli, A., Koetsier, E. & Maino, P. 2019. Myofascial pain syndrome and trigger points: Evaluation and treatment in patients with musculoskeletal pain. *Current Opinion in Supportive and Palliative Care* 13(3): 270-276.
- Beck, A.T., Weissman, A., Lester, D. & Trexler, L. 1974. The measurement of pessimism: The hopelessness scale. *Journal of Consulting and Clinical Psychology* 42(6): 861.
- Bergman, G.J., Winters, J.C., Groenier, K.H., Meyboom-de Jong, B., Postema, K. & van der Heijden, G.J. 2010. Manipulative therapy in addition to usual care for patients with shoulder complaints: Results of physical examination outcomes in a randomized controlled trial. *Journal of Manipulative and Physiological Therapeutics* 33(2): 96-101.
- Borges, D.R.D.S.C. & Macedo, A.B. 2010. The benefits of the association of laser therapy and therapeutic exercises in shoulder impingement syndrome: Case study. *Electronic Health Journal Cesuc* 1.
- Bouvard, M., Charles, S., Guerin, J., Aimard, G. & Cottraux, J.

1992. Study of Beck's hopelessness scale. Validation and factor analysis. *L'Encephale* 18(3): 237-240.
- Bron, C., Dommerholt, J., Stegenga, B., Wensing, M. & Oostendorp, R.A. 2011. High prevalence of shoulder girdle muscles with myofascial trigger points in patients with shoulder pain. *BMC Musculoskeletal Disorders* 12(1): 139.
- Bron, C., Franssen, J., Wensing, M. & Oostendorp, R.A. 2007. Interrater reliability of palpation of myofascial trigger points in three shoulder muscles. *Journal of Manual & Manipulative Therapy* 15(4): 203-215.
- Calvo-Lobo, C., Pacheco-da-Costa, S., Martínez-Martínez, J., Rodríguez-Sanz, D., Cuesta-Álvaro, P. & López-López, D. 2018. Dry needling on the infraspinatus latent and active myofascial trigger points in older adults with nonspecific shoulder pain: A randomized clinical trial. *Journal of Geriatric Physical Therapy* (2001) 41(1): 1-13.
- Camarinos, J. & Marinko, L. 2009. Effectiveness of manual physical therapy for painful shoulder conditions: A systematic review. *Journal of Manual & Manipulative Therapy* 17(4): 206-215.
- Dorrestijn, O., Stevens, M., Winters, J.C., van der Meer, K. & Diercks, R.L. 2009. Conservative or surgical treatment for subacromial impingement syndrome? A systematic review. *Journal of Shoulder and Elbow Surgery* 18(4): 652-660.
- Faul, F., Erdfelder, E., Lang, A. & Buchner, A. 2007. G\*Power 3: A flexible statistical power analysis program for the social, behavioral and biomedical sciences. *Behavior Research Methods* 39(2): 175-191.
- Ge, H.Y., Fernández-de-las-Peñas, C., Madeleine, P. & Arendt-Nielsen, L. 2008. Topographical mapping and mechanical pain sensitivity of myofascial trigger points in the infraspinatus muscle. *European Journal of Pain* 12(7): 859-865.
- Gerwin, R.D., Shannon, S., Hong, C.Z., Hubbard, D. & Gevirtz, R. 1997. Interrater reliability in myofascial trigger point examination. *Pain* 69(1-2): 65-73.
- Koester, M.C., George, M.S. & Kuhn, J.E. 2005. Shoulder impingement syndrome. *The American Journal of Medicine* 118(5): 452-455.
- Kuijpers, T., van Tulder, M.W., van der Heijden, G.J., Bouter, L.M. & van der Windt, D.A. 2006. Costs of shoulder pain in primary care consultants: A prospective cohort study in The Netherlands. *BMC Musculoskeletal Disorders* 7(1): 83.
- Metzker, C.A.B. 2017. Conservative treatment in shoulder impingement syndrome. *Physical Therapy in Motion*. <https://www.researchgate.net/publication/262616197>.
- Mitchell, C., Adebajo, A., Hay, E. & Carr, A. 2005. Shoulder pain: Diagnosis and management in primary care. *BMJ* 331(7525): 1124-1128.
- Morrison, D.S., Frogameni, A.D. & Woodworth, P. 1997. Non-operative treatment of subacromial impingement syndrome. *JBJS* 79(5): 732-737.
- Mystakidou, K., Tsilika, E., Prapa, E., Smyrnioti, M., Pagoropoulou, A. & Lambros, V. 2008. Predictors of spirituality at the end of life. *Canadian Family Physician* 54(12): 1720-1721.
- Polit, D.F. & Beck, C.T. 2010. *Essentials of Nursing Research: Appraising Evidence for Nursing Practice*. Pennsylvania: Lippincott Williams & Wilkins.
- Reilingh, M.L., Kuijpers, T., Tanja-Harfterkamp, A.M. & Van der Windt, D.A. 2008. Course and prognosis of shoulder symptoms in general practice. *Rheumatology* 47(5): 724-730.
- Simons, D.G. 2002. Understanding effective treatments of myofascial trigger points. *Journal of Bodywork and Movement Therapies* 6(2): 81-88.
- Simons, D.G., Travell, J.G. & Simons, L.S. 1999. *1. Travell & Simons' Myofascial Pain and Dysfunction: Upper Half of Body*. Pennsylvania: Lippincott Williams & Wilkins.
- Skootsky, S.A., Jaeger, B. & Oye, R.K. 1989. Prevalence of myofascial pain in general internal medicine practice. *Western Journal of Medicine* 151(2): 157.
- Nazim Karalezli  
Department of Orthopedics, Mugla  
School of Medicine  
Sitki Kocman University  
Turkey
- Ozge Ipek  
Department of Physiotherapy and Rehabilitation, Mugla  
Faculty of Health Sciences  
Mugla Sitki Kocman University  
Turkey
- Ahmad M. Saleh\*  
Department of Nursing, Alkharj  
College of Applied Medical Sciences  
Prince Sattam Bin Abdulaziz University  
Riyadh, Saudi Arabia
- \*Corresponding author; email: [am.saleh@psau.edu.sa](mailto:am.saleh@psau.edu.sa)

Received: 2 May 2019

Accepted: 31 January 2020