

## Vertebral Pain Features in Women of Different Age Depending on Body Mass Index

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**Abstract :** Introduction: Back pain is an extremely common health care problem worldwide. Many studies show a link between an obesity and risk of lower back pain. The aim is to study correlation and peculiarities of vertebral pain in women of different age depending on their anthropometric indicators. Materials: 1886 women aged 25-89 years were examined. The patients were divided into groups according to age (25-44, 45-59, 60-74, 75-89 years old) and body mass index (BMI: to 18.4 kg/m<sup>2</sup> (underweight), 18.5-24.9 kg/m<sup>2</sup> (normal), 25-30 kg/m<sup>2</sup> (overweight) and more than 30.1 kg/m<sup>2</sup> (obese). Methods: The presence and intensity of pain was evaluated in the thoracic and lumbar spine using a visual analogue scale (VAS). BMI is calculated by the standard formula based on body weight and height measurements. Statistical analysis was performed using parametric and nonparametric methods. Significant changes were considered as  $p < 0.05$ . Results: The intensity of pain in the thoracic spine was significantly higher in the underweight women in the age groups of 25-44 years ( $p = 0.04$ ) and 60-74 years ( $p = 0.005$ ). The intensity of pain in the lumbar spine was significantly higher in the women of 45-59 years ( $p = 0.001$ ) and 60-74 years ( $p = 0.0003$ ) with obesity. In the women of 45-74 years BMI was significantly positively correlated with the level of pain in the lumbar spine. Obesity significantly increases the relative risk of pain in the lumbar region ( $RR = 0.07$  (95% CI: 1.03-1.12;  $p = 0.002$ )), while underweight significantly increases the risk of pain in the thoracic region ( $RR = 1.21$  (95% CI: 1.00-1.46;  $p = 0.05$ )). Conclusion: In women, vertebral pain syndrome may be related to the anthropometric characteristics (e.g., BMI). Underweight may indirectly influence the development of pain in the thoracic spine and increase the risk of pain in this part by 1.21 times. Obesity influences the development of pain in the lumbar spine increasing the risk by 1.07 times.

**Keywords :** body mass index, age, pain in thoracic and lumbar spine, women

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