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**«Theoretical and empirical scientific  
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# THE CARDIAC SONOGRAPHERS AND WORK-RELATED MUSCULOSKELETAL PAIN AND DISORDERS: A REVIEW

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## Introduction and background.

The work may lead a sonographer to comfort and excellent performance, or may cause musculoskeletal pain or disorders, those are still recorded [1], [2], [2] and might decrease the work quality and efficacy, at least [3]. It may depend of the sonographer's age and gender, concordance of the equipment, scanning technique particularities, anthropometric characteristics and duration of work experience of a sonographer, scheduling, duration and type of the examination [4]. Thus, according to the American Society of Echocardiography recommendations, a comprehensive transthoracic echocardiography should last for 45 to 60 minutes, or 15 to 30 minutes more for complicated cases [4], whereas the comprehensive sonography of pancreas, hepatobiliary system, kidneys, spleen, intestine, abdominal blood vessels may last for about half an hour [6]. In addition, echocardiography is related to special transducer positioning [7].

**Purpose.** The aim of this review is to look through the particularities of musculoskeletal pain in cardiology sonographers.

**Materials and methods.** The search strategy included requests "cardiology" OR "cardiac" OR "echocardiography" AND sonographers" AND "work-related" AND "prevalence", sorting "by relevance" was applied, articles dated the year 2019 and later were included. Additional search entries were found by manual search through the references lists from the original researches. As a search engine Google Scholar was used initially.

**Results.** The open statistical data and scientific articles on work-related musculoskeletal diseases in sonographers in Europe were presented to lack [8].

## SECTION 16.

### MEDICAL SCIENCES AND PUBLIC HEALTH

The authors of the researches take into account the daily work time [8], echocardiography time [9], [3] whether the sonographers perform other examinations also [9]. The work-related musculoskeletal disorders in sonographers, who perform echocardiography predominantly, were reported to be more frequent and severe [3], [9], than in sonographers, whose predominant ultrasound examination type is different. Although other authors' point of view is not concordant with the previous one [4]. The sonographers were presented to suffer from work-related pain in their neck, shoulders and lower back [10], [11], [7], [4], whereas the cardiac sonographers were reported to experience pain in their shoulders, neck, hands and wrists [3], [8], [9], most frequently.

#### Discussion

The precise accounting of the types of examinations with the percentage and duration of each type in the work schedule, may outline the most appropriate ratio to decrease the musculoskeletal pain related to the sonographers' work and to increase their efficacy. Although, the appropriate schedules may be hard to provide in practical work.

#### Conclusion

The work-related musculoskeletal pain and disorders in cardiac sonographers are reported to be more severe and frequent than in their peer colleagues, who perform other types of examinations more often. The most prevalent work-related musculoskeletal pain sites in cardiac sonographers were reported to be shoulders, neck, hands and wrists. The education on the means of the prevention of the work-related musculoskeletal disorders in sonographers [8] and the further researches on the enhancement of the effectiveness of these methods are reported to be needed.

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