

TRANSVAGINAL ULTRASOUND:

The musculoskeletal risks for practitioners.

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Introduction

Transvaginal ultrasound examinations are one of the most valuable tools for imaging the female pelvis. There are a number of varied positions the patient and sonographer can adopt to perform the examination. Due to the high prevalence of Work Related Muscular Skeletal Disorders (WRMSD) amongst sonographers a multimethod research study was undertaken to identify factors that affect the muscular strain on sonographers whilst performing transvaginal examinations.

Method

The assessment of transvaginal ultrasound examinations and the relationship to WRMSD was completed in two sections.

An electronic questionnaire was designed to provide background information regarding the demand, technique and prevalence and symptoms of WRMSD.

The second part of the research was an observational assessment to allow a postural analysis using the Rapid Upper Limb Assessment (RULA).

The five different positions were:

Position 1: The patient laid on the couch with a wedge placed under their bottom to lift the pelvis off the couch, the sonographer was seated on a saddle stool to the right of the patient.

Position 2: The patient placed their legs in stirrups during the examination, the sonographer was seated on a saddle stool to the right side of the patient.

Position 3: The end of the couch was lowered and the patient placed their feet on a stool whilst their bottom was on the edge of the examination couch, the sonographer was seated on a saddle stool.

Position 4: The patient laid on the couch with a wedge placed under their bottom to lift the pelvis of the couch, the sonographer stood to the right side of the patient.

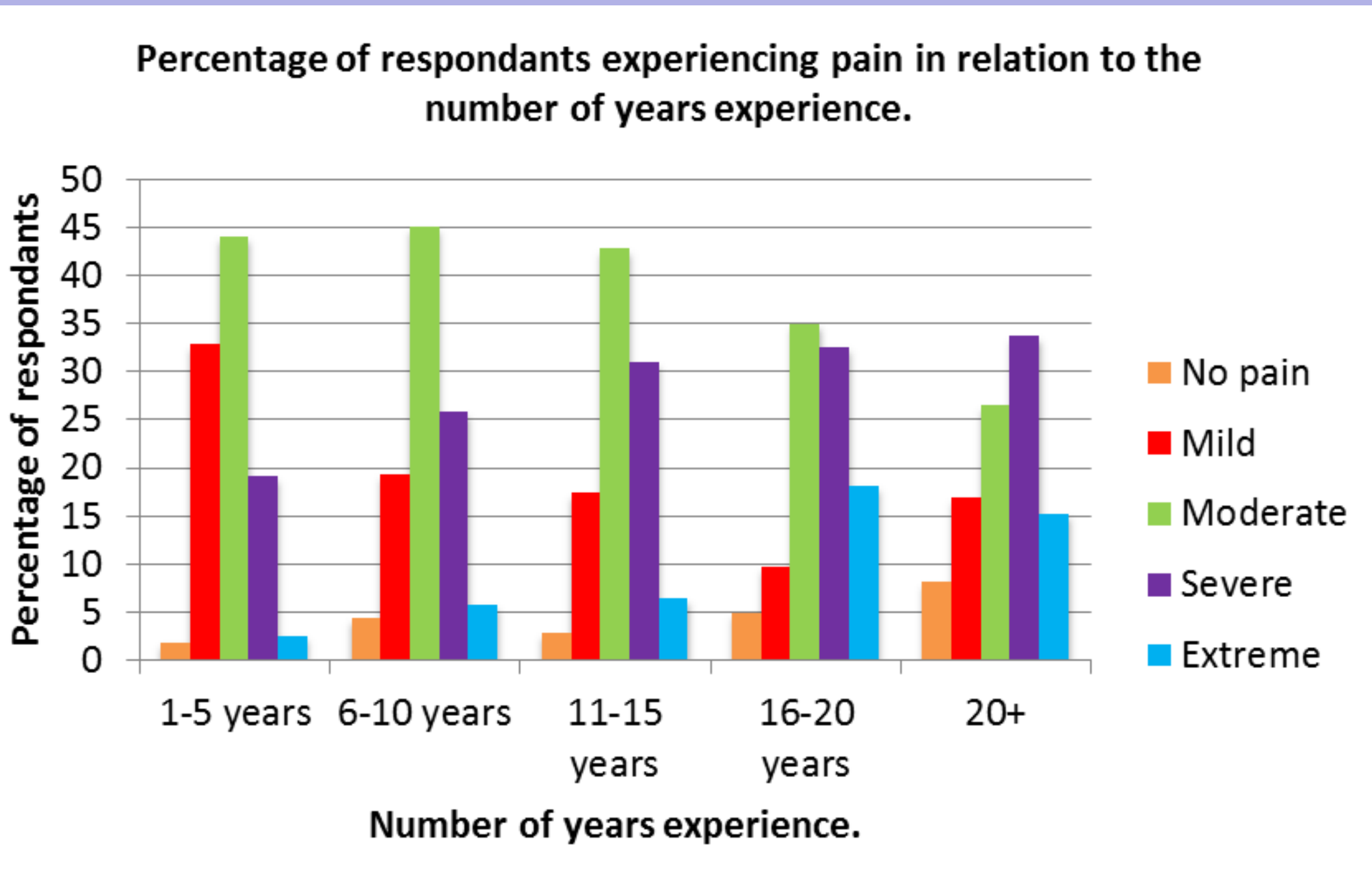
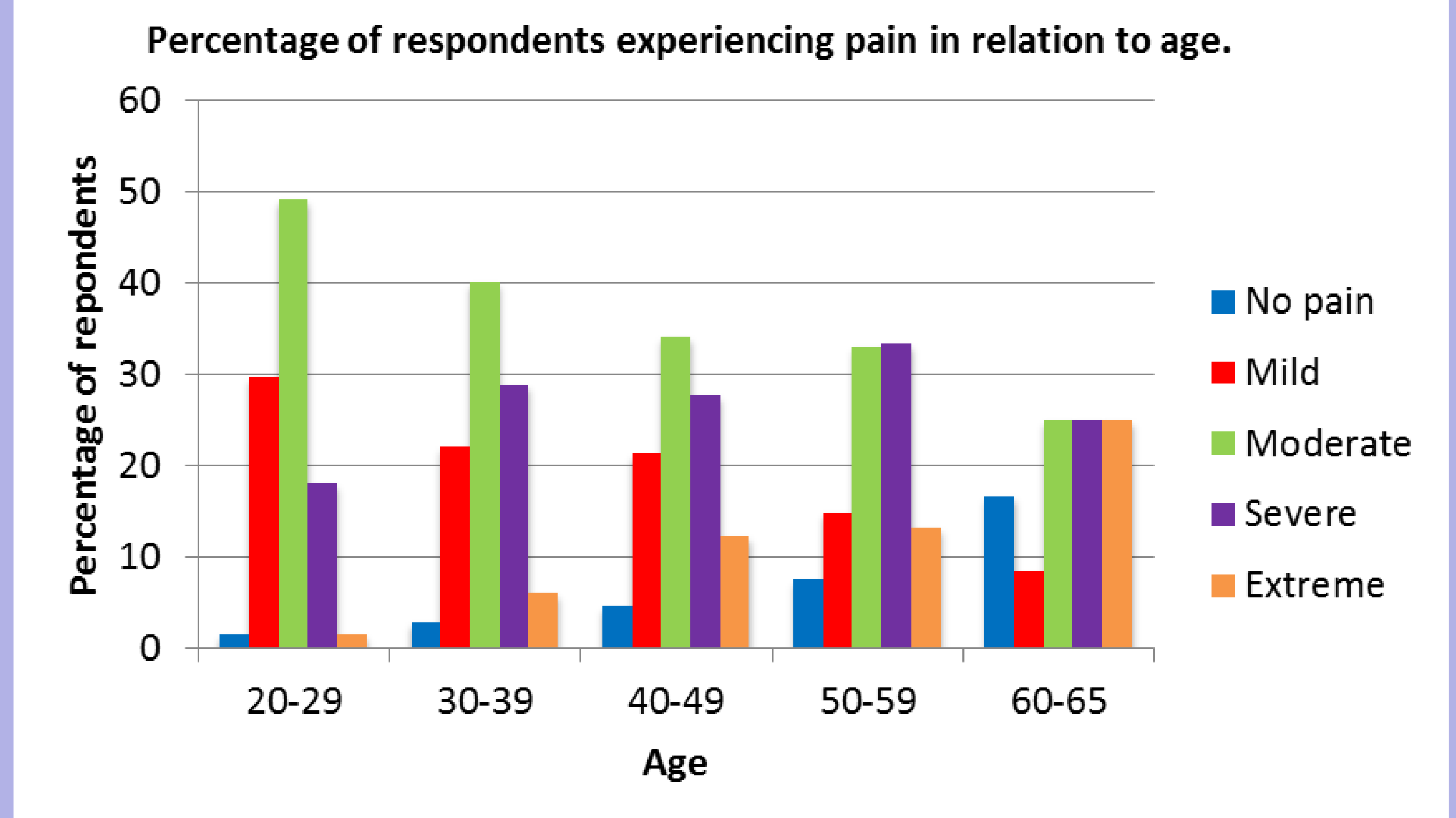
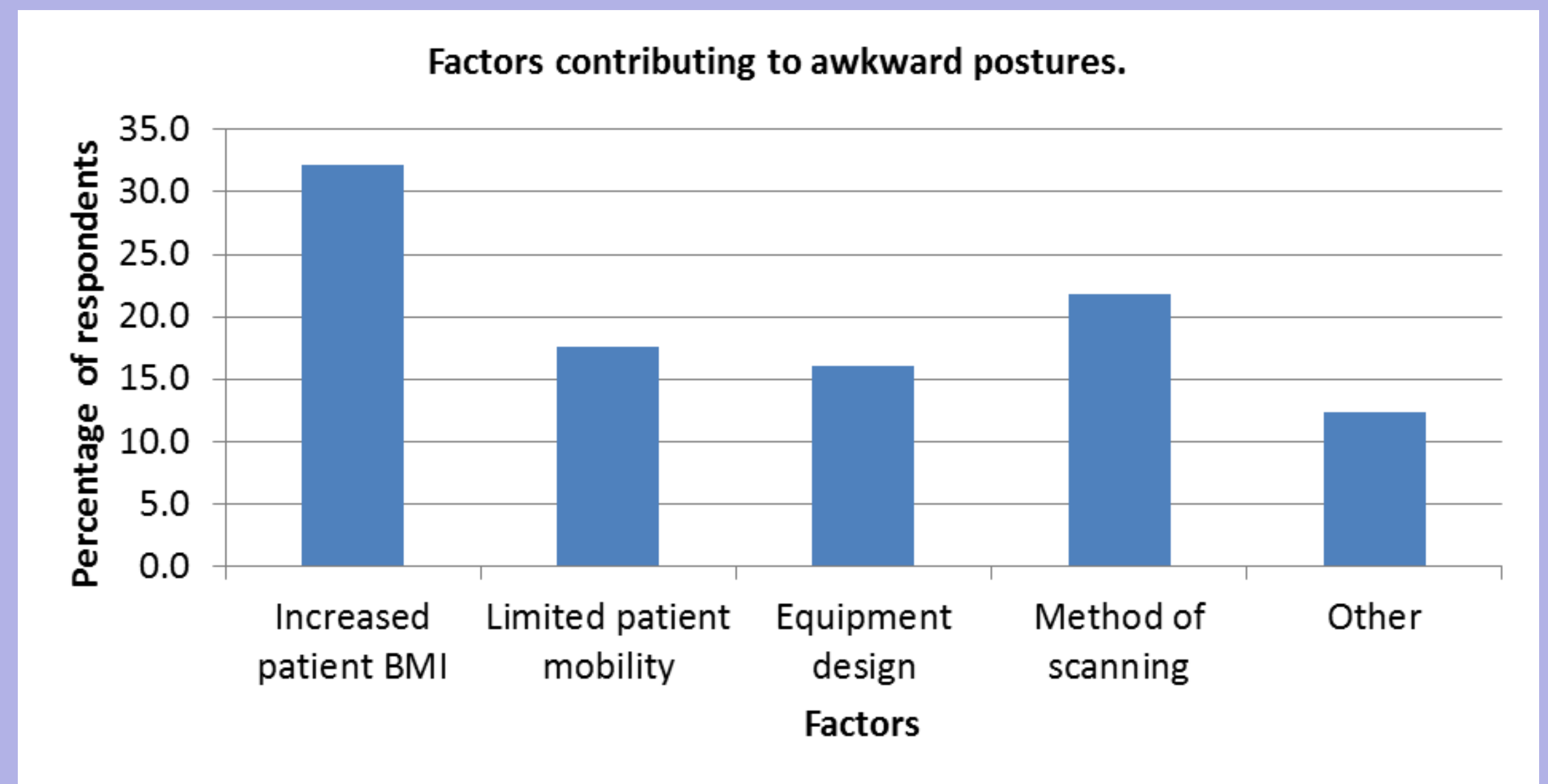
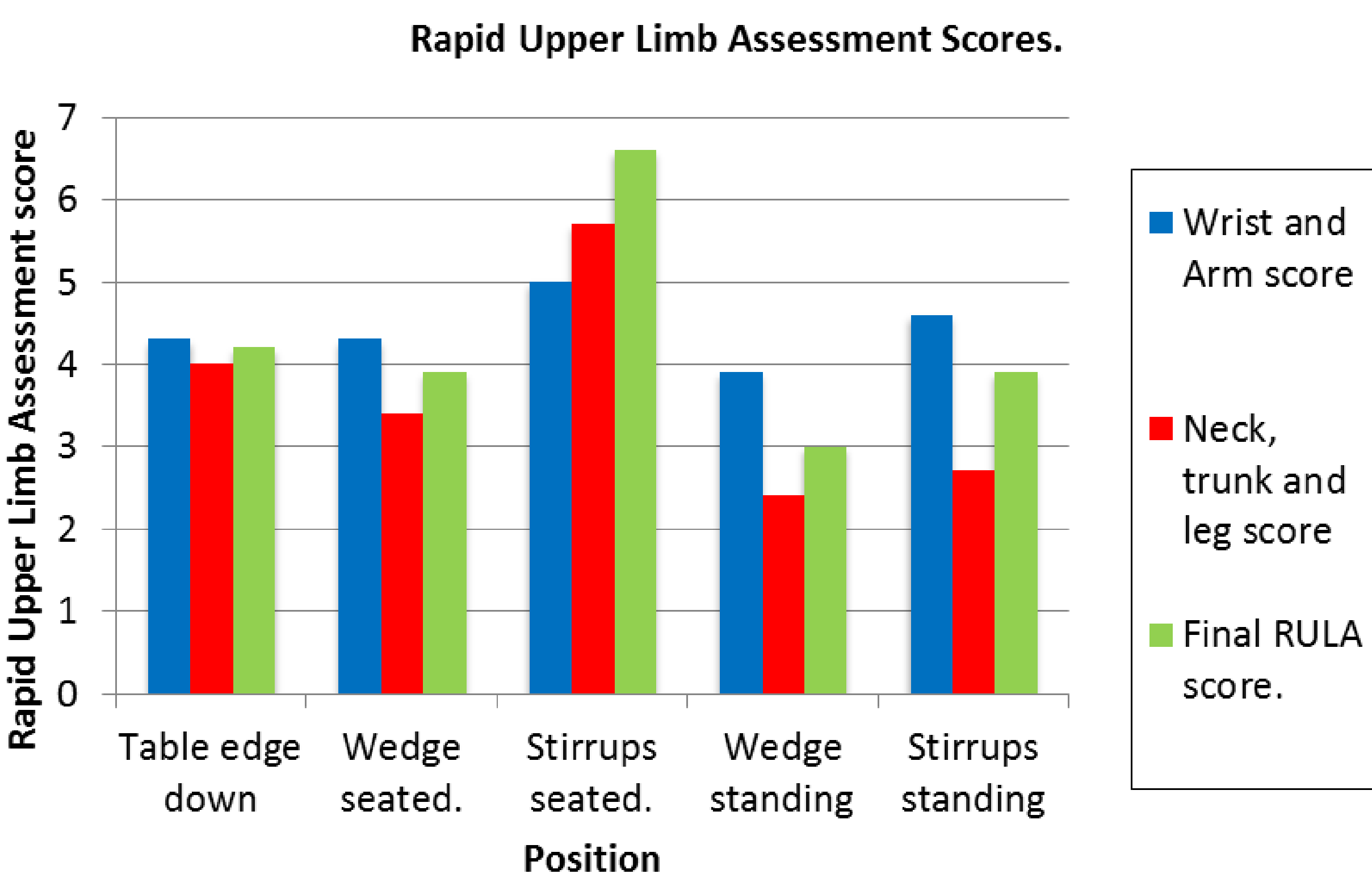
Position 5: The patient placed their legs in stirrups during the examination, the sonographer stood to the right of the patient.

Results

Seven sonographers were assessed using the Rapid Upper Limb Assessment form. The higher the RULA score the higher the risk of MSD and increased muscular strain the sonographer experiences and the average scores are recorded in Table 1.

A total of 742 responses were analysed for the electronic questionnaire.

96.2% of respondents were suffering from pain and discomfort with 87.8% stating transvaginal examinations resulted in awkward postures.



Discussion

Performing transvaginal examinations with a wedge either standing or sitting produced the lowest average RULA scores of 3 and 3.9. There was significantly less trunk twisting, side bending and arm abduction.

The questionnaire highlighted several factors that may be contributing to the increase in WRMSD. This study highlighted a potential issue in regard to only 29% of respondents reported having 10 or 15 minutes to perform a transvaginal examination.

This study demonstrated a higher rate of professionals (32.8%) having to change their work duties due to the symptoms they were experiencing, further research is required to examine what changes were made to the respondent's role and if the changes were beneficial.

Conclusion

There remains a great deal of work to be undertaken to prevent and reduce the increasing prevalence of WRMSD in sonographers and further interventional research is needed. The observational section of the study demonstrated that the different positioning for transvaginal examinations produced a unique set of postural problems for sonographers and standing reduced the muscular strain on the lower back. This study revealed an extremely high prevalence of musculoskeletal pain in professionals who perform transvaginal ultrasound examinations. Issues regarding transvaginal scanning, department protocols and ergonomics need to be addressed to help reduce and prevent WRMSD.

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