



COMPARISON OF SPINAL POSTURE, MOBILITY AND STABILITY  
IN INDIVIDUALS WITH AND WITHOUT ERECTILE DYSFUNCTION  
(Open Discussion ePosters 350)



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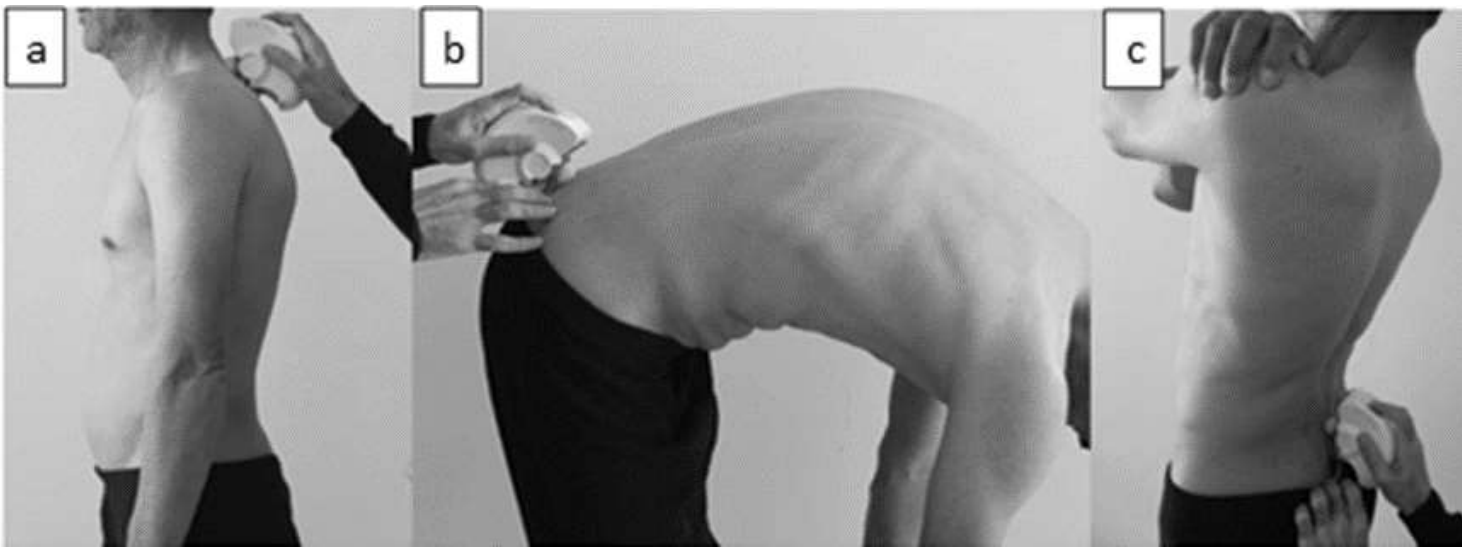
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Hypothesis / aims of study

Erectile dysfunction (ED) refers to the inability of the penis to continuously achieve or maintain sufficient erection to meet a satisfactory sexual life (1). ED is one of the most common pelvic floor dysfunctions affecting middle-aged and older men. It is often associated with underlying psychological and cardiovascular risk factors. However, ED often occurs secondary to pelvic floor muscles weakness. Spinal structure and function (posture, mobility or stability) changes may negatively affect the pelvic floor by increased intra-abdominal pressure, change of pelvic position, myofascial dysfunction or increased stress on neural and muscular structures and these changes may cause pelvic floor dysfunctions (2). Spinal posture, mobility or stability in different pelvic floor dysfunctions (urinary incontinence, overactive bladder etc.) were examined (2,3). However, no study has been found examining the spinal structures of individuals with ED. Therefore, this study aimed to compare spinal posture, mobility and stability in individuals with and without ED.

Study design, materials and methods

This study was planned as a case-control study. The study included patients with ED (ED group, n=33) and without (Control group, n=33) 66 men were included. The inclusion criteria were as follows: For the ED group, sexually active male individuals who were diagnosed with ED between the ages of 20-60, had ED complaints for at least 6 months, and volunteered to participate in the study. For the control group, sexually active male individuals who were between the ages of 20-60 did not have any pelvic floor dysfunction and sexual dysfunction, and volunteered to participate in the study. Those with systemic diseases (diabetes mellitus, hypertension, renal disease etc.) and/or psychiatric disorders, abdominal/urologic/lumbopelvic surgery in the last year, pacemaker users and participants in the exercise program related to abdominal and lumbopelvic regions in the last year were excluded from the study. The severity of ED was questioned with the International Index of Erectile Function-5 (IIEF-5). Spinal posture and mobility in the standing position in the sagittal plane were evaluated with the Spine Mouse posture and mobility measurement device (IDIAG M360®, Fehraltorf, Switzerland), and thoracic, lumbar and sacral angle and mobility values were determined (Figure 1). Spinal stability was assessed with the McGill trunk muscle endurance tests and Sahrman test. G\*Power (Ver. 3.0.10, Franz Faul, Universität Kiel, Germany) package program was used for sample size calculation. First of all, a pilot study was conducted with 7 participants with ED and 7 participants without ED. The effect size was calculated according to the sagittal sacral mobility scores of the pilot study. It was calculated that a total of 66 participants, with at least 33 in each group, had to be recruited to obtain 80% power with 0.720 effect size, 0.05 type I error, 0.20 type I error. In the comparison of numerical data in the groups, the Independent Samples t-test was used. In the comparison of categorical data, the Chi-square test was used. The IBM SPSS Statistics 21.0 program was used for the analysis. ‘p<0.05’ was determined as the statistical significance level.



**Figure 1:** Evaluation of spinal posture and mobility with the Spinal Mouse device: a. Upright position, b. Maximum flexion position, c. Maximum extension position.

Results and interpretation

Physical characteristics (ED group: age=45.18±9.49 years, body mass index=27.59±3.98 kg/m2; control group: age=41.58±7.71 years, body mass index=27.63±3.20 kg/m2) of the groups were similar (p>0.05). In the ED group, 24.20% (n=8) had severe ED, 21.20% (n=7) had moderate ED and 42.40% (n=14) had moderate to mild ED. Sagittal thoracic, lumbar and sacral angles of the groups were similar (p>0.05). Sagittal sacral mobility was found to be less in the ED group compared to the control group (p=0.046). There was no difference between the sagittal thoracic and lumbar mobility of the groups (p>0.05) (Table 1). Trunk muscle flexor (p=<0.001), extensor (p=0.004), left side lateral flexor muscle endurance test scores (p=0.010) and Sahrman test score (p=0.021) were lower in the ED group compared to the control group. There was no difference in right lateral trunk muscle endurance test scores between the groups (p>0.05) (Table 1).

**Table 1:** Comparison of spinal posture, mobility and stability scores of the groups

Spinal Postures		ED Group (n=33)	Control Group (n=33)	p
Sagittal angle (X±SD)	Thoracic	42.76±7.63	40.39±9.24	0.262 <sup>a</sup>
	Lumbar	-27.58±8.90	-26.64±7.76	0.650 <sup>a</sup>
	Sacral	10.36±8.09	9.45±5.92	0.604 <sup>a</sup>
Spinal Mobility				
Sagittal mobility (X±SD)	Thoracic	23.73±15.48	27.24±8.21	0.254 <sup>a</sup>
	Lumbar	54.06±11.21	57.42±11.74	0.238 <sup>a</sup>
	Sacral	44.24±20.67	52.58±11.12	0.046 <sup>a*</sup>
Spinal Stability				
McGill trunk muscle endurance tests (X±SD)	Trunk flexion muscle endurance score (seconds)	11.89±7.52	20.74±8.61	<0.001 <sup>a*</sup>
	Trunk extension muscle endurance score (seconds)	16.30±11.06	24.97±12.61	0.004 <sup>a*</sup>
	Trunk right lateral flexion muscle endurance score (seconds)	15.72±8.76	19.99±10.16	0.072 <sup>a</sup>
	Trunk left lateral flexion muscle endurance score (seconds)	14.82±8.19	20.35±8.62	0.010 <sup>a*</sup>
Sahrman test	Level 1, n (%)	31 (93.9)	24 (72.7)	0.021 <sup>b*</sup>
	Level 2, n (%)	2 (6.1)	9 (27.3)	

\*p<0.05, ED: Erectile dysfunction; X: Mean; SD: Standard deviation; <sup>a</sup>Independent sample t-test; <sup>b</sup>Chi-square test.

In this study, it was observed that sacral mobility and spinal stability were reduced in individuals with ED compared to those without ED. It was determined that the spinal posture of the groups did not change.

Conclusions

According to these results, it may be important to evaluate sacral mobility and spinal stability in the evaluation and treatment of individuals with ED symptoms and to include these parameters in treatment programs.

Keywords

Male Sexual Dysfunction, Erectile dysfunction, Posture, Mobility, Stability.

References

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