

## VIRTUAL REALITY: A PROPOSAL TO PELVIC FLOOR MUSCLE TRAINING

### Introduction

The use of both didactic and ludic means could be a useful tool towards population's awareness about the importance of preventing and treating pelvic floor dysfunction. Currently, virtual reality has been used within scientific<sup>1</sup> fields and is defined as an interactive experience based on a tridimensional computer system. It is a simple, low cost movement simulator which allows sensorial feedback as well as the participant's interaction through enjoyable and adequate therapeutic sessions that fit in her condition. Thus our proposal was to design an intervention protocol for pelvic floor muscle training by virtual reality and to investigate its effects on the pelvic floor muscles function.

### Design

A clinical, controlled and prospective study was conducted. Forty six women participated in this study, of whom 19 nulliparous women without urinary symptoms, who were evaluated by both surface electromyography and digital palpation<sup>2</sup> and 27 postmenopausal women, with mixed urinary symptoms, who were evaluated by vaginal dynamometry<sup>3</sup> and digital palpation (Modified Oxford Scale). Two questionnaires from the *International Consultation on Incontinence Questionnaires* were used in order to assess urinary symptoms: *International Consultation on Incontinence Questionnaire Urinary Incontinence short Form (ICIQ UI-SF)* and *International Consultation on Incontinence Questionnaire Overactive Bladder (ICIQ-OAB)*.

The protocol was designed so that the participant would play a videogame, seated on a pressure base platform, and commanding it through her pelvic movements. Thus, the participants were guided to maintain a mild contraction of the *Transversus Abdominis* muscle, while performing pelvic antiversion, retroversion, lateral tilting and circumduction movements.

Using an already available virtual reality game, five activities were performed during 30 minutes, twice a week, totalizing 10 sessions.

### Results

As results, a significant increase in pelvic floor muscle strength was observed by digital palpation ( $p=0.0001$ ) in the nulliparous women group; though, this finding wasn't observed through surface electromyography ( $p=0.7$ ). In fact, this study included only 19 nulliparous women, presenting just preliminary findings.

On the other hand, a significant increase in postmenopausal women's muscle strength and endurance (digital palpation -  $p=0.0001$  and vaginal dynamometry -  $p=0.05$ ), as well as a concomitant decrease in their urinary symptoms (ICIQ UI-SF -  $p<0.0001$  and ICIQ-OAB -  $p=0.003$ ) were observed.

### Conclusion

Pelvic floor muscle training by virtual reality promotes an increase in pelvic floor muscle contractility and a decrease in postmenopausal urinary symptoms. Therefore it can be used in clinical practice.

### References

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### Disclosures

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