

# Is overactive bladder symptomatology related to physical activity and body composition?

Jaime López-Seoane<sup>A,B\*</sup>, Eva Gesteiro<sup>A,B</sup>, Lisset Pantoja-Arévalo<sup>A,B</sup>, Matteo Ferraro<sup>A</sup>, Carlos Quesada-González<sup>A,C</sup>, Alicia Portals-Riomao<sup>A,B</sup>, María J. Castro<sup>D</sup>, Margarita Pérez-Ruiz<sup>A,B</sup> and Marcela González-Gross<sup>A,B,E</sup>

\*E-mail: [jaime.lopez-seoane@upm.es](mailto:jaime.lopez-seoane@upm.es)

Key words: BMI, fat mass, healthy lifestyle, lower urinary tract, polyuria, urgency to urinate, nocturia



## BACKGROUND / AIM

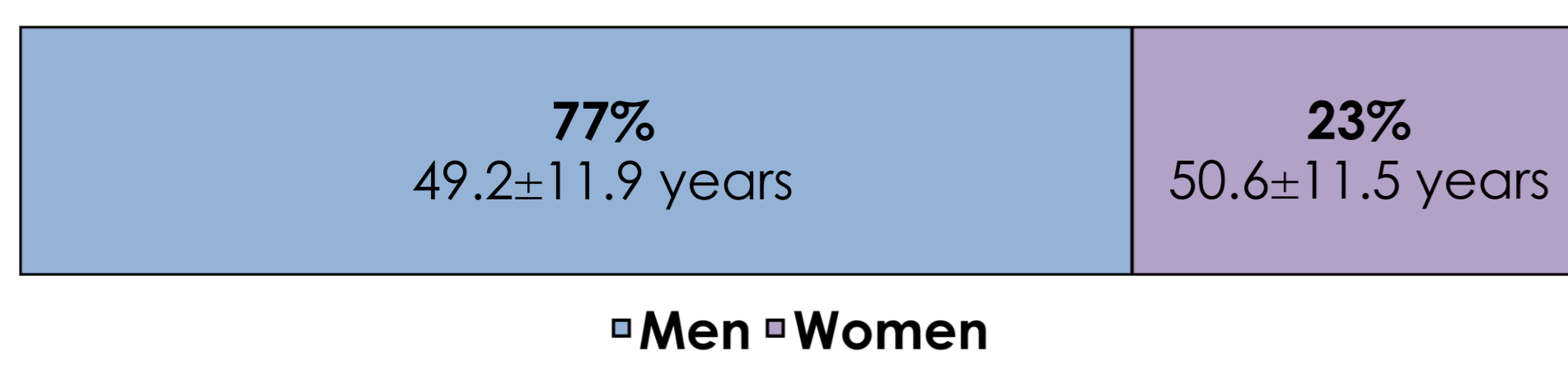
Overactive bladder (OAB) is a lower urinary tract syndrome which affects between 10-20% of Spanish population and which is characterized by the presence of symptoms such as elevated polyuria, nocturia, urgency to urinate and urgent urinary incontinence (1). These symptoms have a profound impact on quality of life due to their relevance to social, sexual, interpersonal and professional functions (2) and affects to healthy lifestyle habits such as (diet, physical activity (PA) or sleep among other). In fact, overweight and obesity are one of the main OAB risk factors (3) and considering that PA levels are related to body mass index (BMI), it is important to know the relationship between these factors and OAB development. Therefore, measuring body composition (BC) and PA levels could be of interest to understand OAB symptomatology and its relationship with these healthy lifestyle habits.

The aim of this study was to characterize the overactive bladder population according to its self-reported symptomatology and to analyze the relationship between their symptoms, body composition and physical activity levels.

## METHODS

Observational study with convenience sampling. 179 participants from 18 years to 70 years were included.

### Sample size distribution according to sex

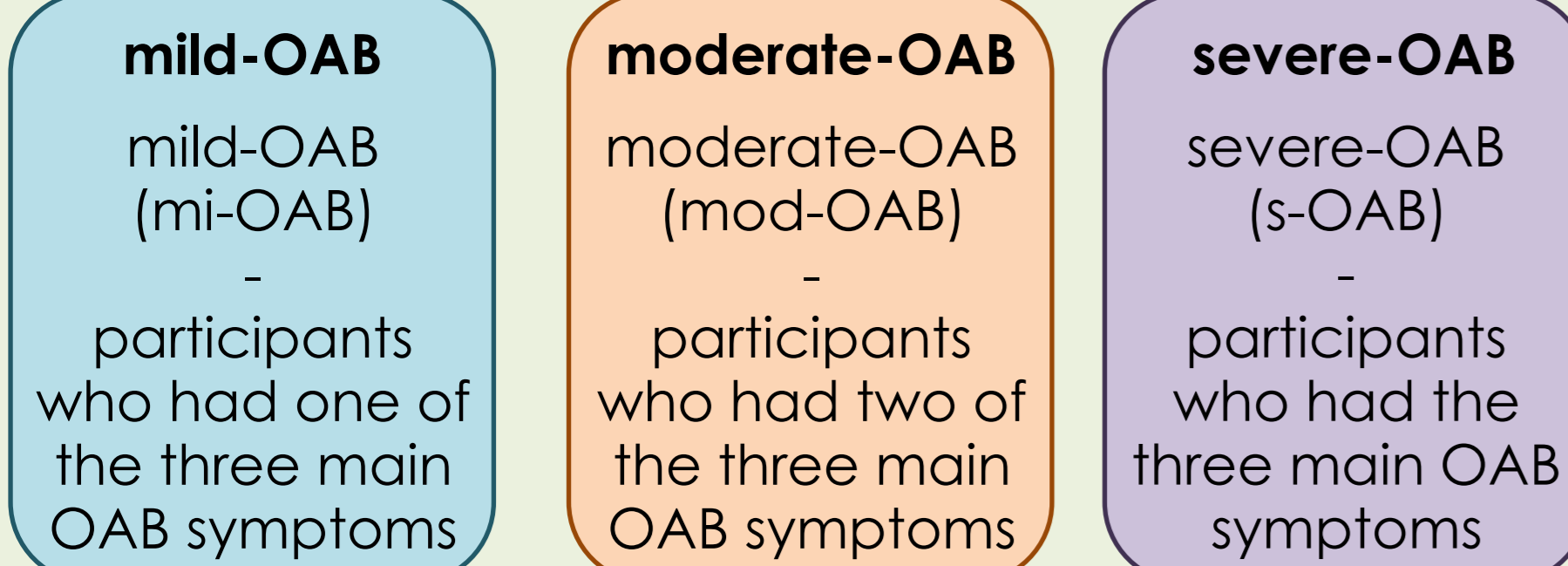


The three most frequent OAB symptoms were considered. Participants were classified into three severity OAB groups according to the number of symptoms reported.

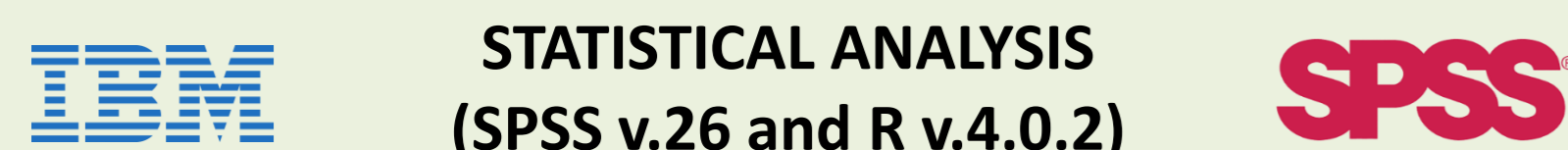
### THREE MAIN OAB SYMPTOMS



### STUDY GROUPS



OAB symptomatology was measured with the International Prostate Symptom Score questionnaire (IPSS), BC using bioimpedance (MC-780 MA, Tanita, Tokyo) and PA using the validated Spanish version of the International Physical Activity Questionnaire-long form (IPAQ-LF).



STATISTICAL ANALYSIS (SPSS v.26 and R v.4.0.2)

Statistical differences between the established groups were determined using the Kruskal-Wallis test. The significance level was set at 0.05.

## RESULTS

Of 179 participants (49.7±11.7 years), 54% had mi-OAB while only 10.9% presented s-OAB. BMI was significantly higher in s-OAB compared with mod-OAB ( $p=0.009$ ) and fat mass percentage was significantly higher in s-OAB compared with mod-OAB and mi-OAB ( $p=0.02$  and  $p=0.006$ , respectively). Fat free mass was significantly higher in mi-OAB compared with mod-OAB ( $p=0.05$ ). No significant differences were observed between groups for sitting time per day, moderate and vigorous PA and walking intensity. Nevertheless, in terms of vigorous PA intensity, s-OAB group showed nearly significant lower values than mi-OAB group ( $p=0.064$ ), while no differences were found between mod-OAB group.

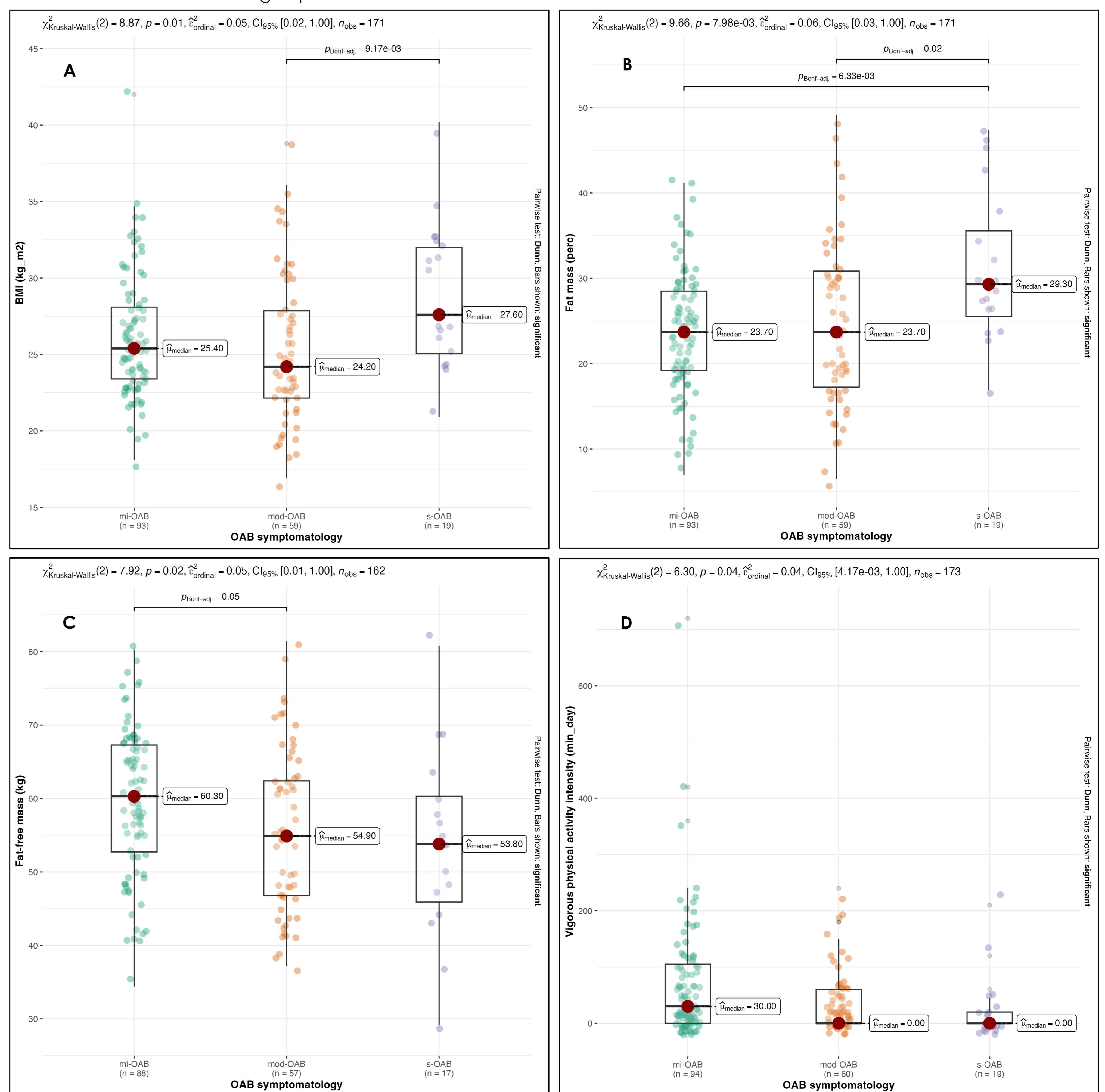


Figure 1. BMI (kg/m<sup>2</sup>) (A), fat mass (%) (B), fat-free mass (kg) (C), and vigorous physical activity (min/day) (D) according to mild (mi-OAB), moderate (mod-OAB) and severe (s-OAB) OAB symptomatology groups.

## CONCLUSION

s-OAB symptomatology group seems to be related to worse BMI, fat mass percentage and fat-free mass. Physical activity levels did not differ between groups, however, mi-OAB group seems to realize more vigorous physical activity than mod-OAB and s-OAB groups.

## REFERENCES

- Martínez E., Ruiz J., Gómez L., et al. (2009). Prevalence of urinary incontinence and overactive bladder in Spanish population: results from EPICC study. *Act. Urol. Esp.*, 33(2): 159-166.
- Sacco E., Tienforti D., D'Addressi A., et al. (2010). Social, economic, and health utility considerations in the treatment of overactive bladder. *Res. Rep. Urol.*, 2: 11-24.
- Bunn F., Kirby M., Pinkney E., et al. (2015). Is there a link between overactive bladder and the metabolic syndrome in women? A systematic review of observational studies. *Int. J. Clin. Pract.*, 69(2): 199-217.

## ACKNOWLEDGEMENTS

The authors would like to thank all subjects for their participation in the study. In addition, we would like to thank all the members of the ImFINE Research Group who took part on this clinical trial.

This work was funded by agreement between SagaNatura (Iceland) and the Universidad Politécnica de Madrid (Project number: P2011600132).

No individuals from the funding company has been involved in data collection, data analysis or writing the document. The authors declare no conflicts of interest.

## AFFILIATIONS

<sup>A</sup> ImFINE Research Group, Department of Health and Human Performance, Faculty of Physical Activity and Sport Sciences-INEF, Universidad Politécnica de Madrid, 28040 Madrid, Spain; <sup>B</sup> Physical Exercise and Health Research Network, EXERNET, Madrid, Spain; <sup>C</sup> Department of Mathematics Applied to Information and Communication Technologies, Universidad Politécnica de Madrid, 28031 Madrid, Spain; <sup>D</sup> Faculty of Nursing, Universidad de Valladolid, 47003 Valladolid, Spain; <sup>E</sup> Centre for Biomedical Research Network Physiopathology of Obesity and Nutrition (CIBEROBN), Instituto de Salud Carlos III, 28029 Madrid, Spain.