

## Background

Swimming pools are currently operated by public and private entities for the development of sports, recreational and therapeutic activities [1]. For this reason, it is essential to guarantee the chemical and microbiological quality of the pool water, since they may be the origin of several pathologies [2].

## Objective

The present research aimed to analyse data from the microbiological evaluation of indoor and outdoor swimming pool waters of Hotel Units of Mainland Portugal and Madeira in the year 2016, in order to verify the water quality.

## Methods

A cross-sectional descriptive study was performed using database records from a northern laboratory. The microbiological parameters studied to characterize the indoor and outdoor swimming pool waters included CFU/mL of viable microorganisms at 37°C/24h, CFU/100mL of total coliforms, CFU/100mL of *Escherichia coli*, CFU/100mL of *Enterococcus spp.*, CFU/100mL of *Pseudomonas aeruginosa*, CFU/100mL of total *Staphylococcus* and CFU/100mL of coagulase producers *Staphylococcus*. The samples were characterized as conforming and non-conforming according to the reference intervals indicated in Regulatory Circular nº 14/DA of 21/08/2009 of Direção Geral de Saúde [1].

## Results

Of the total of indoor pools (n = 610) analysed, 25.09% (n = 153) were classified as non-conforming, being the microorganisms viable at 37 °C the most frequent cause of nonconformities (n = 105), followed by total coliforms and total *Staphylococcus* (n = 42 each). For the outdoor pools (n = 1982), 29.92% (n = 593) were also classified as non-conforming, once more being microorganisms viable at 37 °C the most frequent cause of nonconformities (n = 420), followed by total coliforms (n = 154).

## Conclusions

Indoor swimming pools have a lower frequency of nonconformities compared to outdoor swimming pools. The ambient temperature and the presence of soils around the pool influence the microbiological quality of the water [2]. These results also suggest that water treatment is not effective, indicating water pollution, being hygienic care other factor that influence the microbiological quality of the water [3]. The determination of these parameters is useful when microbiological monitoring is carried out constantly.

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## Keywords

Microbiological evaluation, Microbiological quality, Swimming pool waters, Fecal contamination indicators.

## O17

### Normative values of functionality and quality of life of the portuguese healthy older people

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## Background

The older population is increasing worldwide [1]. Since the average life expectancy is currently 71.4 years at birth and the healthy life

expectancy is only 63.1 years, there is a need to enhance the focus on public health to promote health and healthy ageing [2, 3]. Measures of functionality and health-related quality of life (HRQoL) have been identified as predictors of healthy aging [4-6]. However, to interpret results from those measures, and compare them within a population or across populations, normative data are necessary [7-9].

## Objective

To establish age and gender-related normative values for the Five Times Sit to Stand Test (5 STS), 10 Meter Walk Test (10MWT), and World Health Organization Quality of Life-Bref (WHOQoL-Bref) for Portuguese healthy older people.

## Methods

An exploratory cross-sectional study was conducted. Participants were recruited from the community. Functionality was assessed with the 5STS [4, 10] and 10MWT [5, 11] and Health-related Quality of Life (HRQoL) with the WHOQoL-Bref (scores: 0-20 and 0-100) [6]. Descriptive statistics was used to determine normative scores by age decades (60-69; 70-79; 80-89 years) and gender. Differences between age and gender were explored with multiple comparison tests using the Bonferroni correction.

## Results

118 older people (76.2 ± 8.9yrs; n = 79, 66.9% female) participated in this study. Mean scores of 5STS (9.4 ± 3.5s; 13.0 ± 4.9s; 16.7 ± 6.7s), 10MWT (5.4 ± 2.1s; 6.5 ± 3.1s; 12.4 ± 5.9s) increased with age. Mean scores of the different domains of the WHOQoL-Bref 0-20 scale: physical health (15.9 ± 2.6; 15.1 ± 2.2; 13.6 ± 2.3), psychological (15.6 ± 2.6; 15.0 ± 2.3; 13.9 ± 1.9), social relationships (15.8 ± 2.8; 14.6 ± 2.4; 13.5 ± 2.4), environment (16.4 ± 2.3; 16.0 ± 2.3; 15.1 ± 1.6) decreased with age. Similar findings were observed in the WHOQoL-Bref 0-100 scale: physical health (74.6 ± 16.4; 69.3 ± 13.5; 60.4 ± 14.2), psychological (72.6 ± 16.4; 68.4 ± 14.5; 61.8 ± 12.1), social relationships (73.6 ± 17.6; 66.4 ± 15.2; 59.6 ± 15.2) and environment (77.6 ± 2.3; 74.9 ± 14.6; 69.4 ± 10.2). Females showed worst results in all measures. Mean scores of most measures were significantly different among age decades and gender (p < 0.05).

## Conclusions

This study provided normative values of 5STS, 10MWT and WHOQoL-Bref for the Portuguese healthy older people. These data may improve the utility of these measures for health professionals to screen people and develop tailored interventions to improve functionality and HRQoL in this population. Normative values of WHOQoL-Bref will also allow identifying vulnerable groups and describing the profile of HRQoL in Portuguese healthy older people living in the community.

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### Keywords

Normative values, Functionality, Quality of Life, Portuguese healthy older people.

### O18

#### Relationship between balance and functionality, gait speed, physical activity and quality of life in community-dwelling older people

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### Background

Balance is a modifiable risk factor for falls which represent a major public health problem for healthy ageing [1]. Predictors of healthy ageing in older people (i.e., functionality, gait speed, physical activity (PA) and health-related quality of life (HRQoL)) have been correlated with balance measures [2-5]. However, most balance measures do not assess the different components of balance hindering the design of interventions. To overcome this difficulty the Balance Evaluation System Test (BESTest) [6] and its short versions [7, 8] (new comprehensive measures of balance) were developed. Nevertheless, the relationship between the BESTest [6] and its short versions [7, 8] with functionality, gait speed, physical activity and health-related quality of life older people living in the community is still unknown.

### Objective

To explore the relationship between the BESTest, Mini-BESTest and Brief-BESTest with functionality, gait speed, PA and HRQoL in community-dwelling older people.

### Methods

An exploratory cross-sectional study was conducted. Community-dwelling older people (> 60 yrs) were recruited. Balance was assessed with the BESTest, Mini-BESTest and Brief-BESTest, functionality with the 5STS [9], gait speed with the 10MWT [10], PA with the Brief-PA questionnaire [11] and HRQoL with the WHOQoL-Bref [12]. Descriptive statistics was used to characterize the sample. Correlations were explored with the Spearman correlation coefficient. By convention, the interpreting size of a correlation coefficient was negligible (0.00-0.30), low (0.30-0.50), moderate (0.50-0.70), high (0.70-0.90) and very high (0.90-1.00) correlation [13].

### Results

One hundred and eighteen older people living in the community (76.2 ± 8.9 years; n = 79, 66.9% female) participated in this study. On average participants were overweight, with high body mass index (male: 26.9 ± 4.2 kg/m<sup>2</sup>; female: 26.8 ± 4.3 kg/m<sup>2</sup>) and fat-free mass (male: 29.5 ± 6.3 %; female: 37.6 ± 6.2%). BESTest, Brief-BESTest and Mini-BESTest were I) low and negatively correlated with intense (-0.34; -0.37; -0.32, respectively) and moderate (-0.37; -0.37; -0.35, respectively) PA; II) moderate and negatively correlated with the 5STS (-0.51; -0.61; -0.59, respectively); III) moderate to high and negatively correlated with the 10MWT (-0.69; -0.77; -0.78) and IV) negligible to moderate and positively correlated with the WHOQoL-Bref domains (I-Physical health 0.46; 0.57; 0.53; II-Psychological 0.47; 0.52; 0.53; III-Social relationships 0.32; 0.36; 0.28; IV-Environment 0.46; 0.51; 0.46).

### Conclusions

This study shows that there is a relationship between the BESTest and its short versions with functionality, gait speed and HRQoL in community-dwelling older people. Higher correlations were found in the short versions, especially with functionality measures. This is useful for clinical practice since these versions are simpler, require less material and are quicker to apply.

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### Keywords

Correlations, Balance, Healthy ageing predictors, Older people.

### O19

#### Trends of hospitalization for chronic obstructive pulmonary disease in Brazil from 1998 to 2016

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### Background

Chronic Obstructive Pulmonary Disease (COPD) is a major public health problem. In Brazil, it is the fifth largest cause of hospitalization