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BODY COMPOSITION CHANGES OVER THREE YEARS IN OLDER ADULTS: A DESCRIPTIVE LONGITUDINAL ANALYSIS.

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INTRODUCTION

Many studies analyse body composition changes in older adults. However few studies analyse body composition in elderly people with functional measures. Studies using Double X-Ray (DXA) or Bioimpedance analysis proved to be reliable but expensive or only possible in a laboratory environment.

PURPOSE

Purpose of our study was analyse changes in body composition over three years using anthropometric measures in a sample of elderly people in order to perceive related functional changes.

METHODS

Forty-three participants (12 males; 31 females) aged 60 years and over and independente in activities of daily life were assessed using anthropometric measures in a first moment and past three years.
Weight, height, waist and hip circunference were measured and body mass índex (BMI) and waist-to-hip ratio (WHR) were also calculated. Skeletal muscle mass (SMM) was also calculated using Al-Gindan et col. (2014)[1] equations and normalized for height to found skeletal muscle índex (SMI) in order to analyse cut points associated with physical disability according Janssen and col (2004)[2].

RESULTS

Table 1 – Characterization of our sample over 3 years period.

VARIABLES	M1	M2	*p*
Age (years)	73,8±8,7	76,7±8,6	
Weight (kg)	70,5±12,5	69,3±12,1	0,009
BMI	28,3±3,6	27,9±3,5	0,041
Waist circunference (WC)(cm)	90,8±11,4	92,6±11,2	0,004
Waist-Hip Ratio (WHR)	0,9±0,1	0,9±0,1	0,003
SkMM (kg)	21,6±5,0	20,3±4,6	0,000
SMMI	8,6±1,1	8,2±1,1	0,000

Legend: SkMM - Skeletal Muscle Mass according Al-Gindam et col.(2004); SMMI - Skeletal Muscle Index = SkMM adjusted for height; M1 - First moment of assessment

A significant difference was found over three years in SkMM (p=0,000), SMI (p=0,000), BMI (p=0,041) and WHR (p=0,003).
The majority of the participants has decreased SMM, SMI and BMI and increased WC, which favours a worst prognostic for comorbidities associated with these variables[3]. A tendency for a sarcopenic obesity seems to be presente although more studies are needed[4].

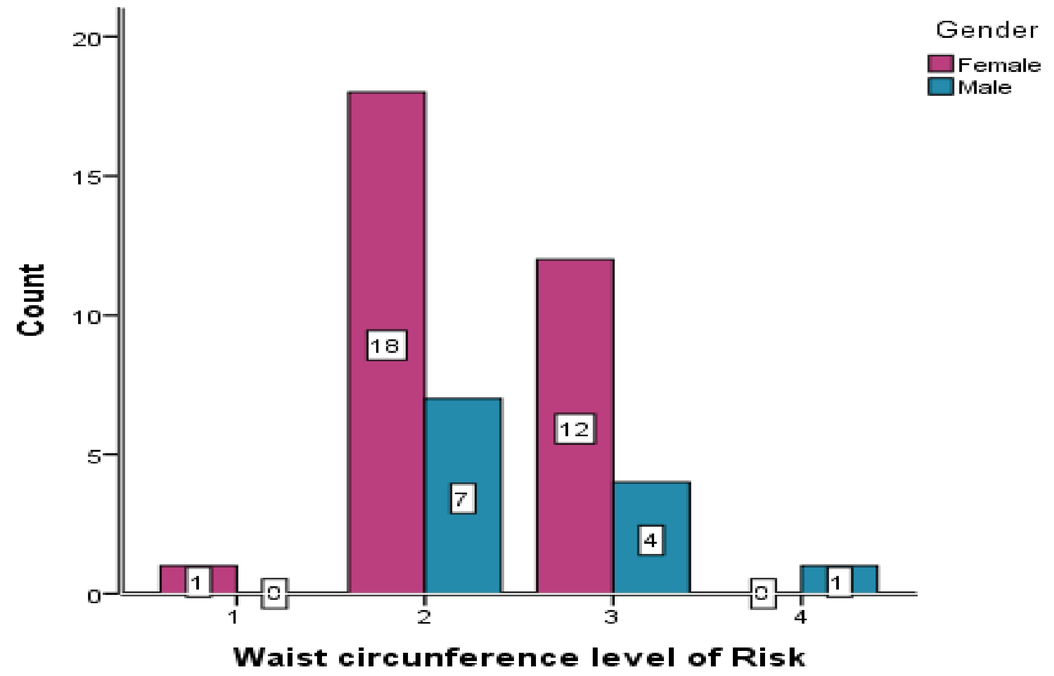

Fig.1 – Levels of risk by waist circunference for ou sample at first moment of assessment

When we observed number of co-morbidities of our sample around 58,1% refered two or more clinical conditions (ex: diabetes, hypercholesterolemia; hypertension or heart or lung disease). Also 74,4% refered musculoskeletal disorders).

Table 2 – risk category analysis for cardiovascular diseases presented by our sample (ACSM, 2018)

	Waist Circunference					
	Females (n=31; %)			Males (n=12; %)		
RISK CATEGORY		**M1**	**M2**		**M1**	**M2**
1 - Very Low	*<70 cm*	3,2	0,0	*<80 cm*	0,0	0,0
2 - Low	*70-79 cm*	58,1	54,8	*80-89 cm*	58,3	9,1
3 - High	*90-110 cm*	38,7	46,2	*100-120 cm*	33,3	72,7
4 - Very High	*> 110 cm*	0,0	0,0	*> 120 cm*	8,3	18,2

Also, we found that using cut points for disability risk [2], around 83,3% of the males and 38,7% of the females of our sample were at moderate or high risk of disability. Three years later this percentage has increased but only significantly for females, to 54,8%.

CONCLUSION

Although men are at risk of disability, women quickly lose their functional capacity, making necessary a rapid intervention to reduce the risk of disability in this population. Thus the importance of structured and personalized community programms directed to decline in functionality.

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