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Prevalence and factors associated with pre-sarcopenia and sarcopenia among middle-aged female healthcare workers in Taiwan

Ting Wan Tan

Department of nursing, Hsinchu Mackay Memorial Hospital

Introduction:

Sarcopenia is a complex condition whereby there is progressive and generalized degenerative loss of the musculoskeletal system and muscle functionality, which would have a devastating effect on quality of life, morbidity, and increased mortality among middle-aged female healthcare workers. Female healthcare workers often experience high occupational stress and emotional exhaustion related to the working conditions. Female healthcare workers, who are overworked and overstressed, tend to have the risk of lifestyle disorders such as improper diet, poor eating habits, inadequate physical activity, and sleep disorder, which have been reported among rotational shift workers. This study aims to examine the prevalence and factors of middle-aged female healthcare workers at high risk of pre-sarcopenia and sarcopenia.

Methods:

This is a prospective cross-sectional study carried out to examine the factors associated with measures of skeletal muscle mass, muscle strength, physical performance, and sarcopenia-related quality of life in a group of a random sample of women aged 40 to 65 years of age middle-aged female healthcare workers in Taiwan.

Results:

Table 1

Variables correlated (Pearson’ s correlations) with muscle strength, muscle mass and physical performance of middle-aged female healthcare workers (N = 110)

Variable	Mean (SD)	Muscle Strength		Muscle Mass		Physical Performance	
		r	p	r	p	r	p
Age	48.89 (6.44)	-.225	.018	-.053	.583	-.326	.001
Body mass index	25.31 (4.13)	.356	<.001	.825	<.001	-.063	.512
Body fat	36.16 (5.88)	.079	.414	.298	.002	-.147	.124
Arm lean mass	1.88 (1.86)	.528	<.001	.945	<.001	.054	.575
Leg lean mass	6.39 (1.03)	.623	<.001	.853	<.001	.186	.051
Bone mineral content	2.37 (0.32)	.531	<.001	.755	<.001	.159	.098
Visceral fat area	108.89 (39.93)	.220	.021	.512	<.001	-.098	.310
Intracellular water	18.23 (2.61)	.569	<.001	.922	<.001	.128	.183
Extracellular water	11.27 (1.63)	.539	<.001	.885	<.001	.138	.152
Body cell mass	26.12 (3.72)	.568	<.001	.921	<.001	.127	.185
Waist circumference	82.53 (9.98)	.345	<.001	.748	<.001	-.049	.615

Table 2

Factors associated with muscle strength, muscle mass and physical performance of middle-aged female healthcare workers in multiple regression analysis (N = 110)

Variables	B	SE	β	t	p
Muscle Strength					
Constant	8.541	2.401		3.588	.001
Leg lean mass	2.858	0.362	0.593	7.886	<.001
Postmenopausal	-1.763	0.818	-0.165	-2.192	.031
R ² = 0.415 ; Adjusted R ² =0.404 ; F = 37.956					
Muscle Mass					
Constant	3.058	0.110		27.697	<.001
Arm lean mass	0.774	0.062	0.398	12.436	<.001
Leg lean mass	0.214	0.021	0.259	10.121	<.001
Body mass index	0.144	0.005	0.702	31.462	<.001
Bone mineral content	0.887	0.055	0.337	16.018	<.001
Chronic illness - cancer	-0.229	0.058	-0.036	-3.949	<.001
Waist circumference	-0.054	0.002	-0.633	-26.316	<.001
Intracellular water	0.195	0.011	0.600	17.703	<.001
R ² = 0.993 ; Adjusted R ² = 0.992 ; F = 1933.801					
Physical Performance					
Constant	11.848	0.194		60.939	<.001
60-65 years	-1.473	0.356	-0.418	-4.144	<.001
R ² = 0.193 ; Adjusted R ² = 0.162 ; F = 6.269					
Abbreviation: B (Unstandardized Coefficients) ; SE (Standard Error) ; β (Standardized Coefficients)					

Conclusions:

This study finding highlighted the significance of middle-aged healthcare workers being screened as positive for possible sarcopenia should be assessed. A sarcopenia prevention program must emphasize raising awareness and motivating middle-aged female healthcare workers to practice healthy lifestyles actively.

Implication for Practice:

Importance for promoting healthy behavior of middle-aged healthcare worker to take awareness and to motivate healthy lifestyle for prevention against the risk of sarcopenia, and improve well-being and healthy workplace.

Relation to conference main theme:

- Health promoting hospitals and health services
- Reducing workplace distress and improving wellbeing
- Promoting healthy behavior of patients, staff and populations served
- Salutogenic, safe and healthy workplace

