

## AWARENESS OF HEALTHCARE PROFESSIONALS REGARDING SARCOPENIA IN THE OLDER ADULT POPULATION

**Mustafa Zaveri**

Hayat Institute of Rehabilitation  
Medicine, Karachi

**Omema Rathore**

Ibex Institute, Karachi

**Elsa Zainab Ansari**

Ibex Institute, Karachi

**Ajay Dherwani**

Liaquat National School of

Physiotherapy

**Abeer Khan**

PNS Shifa Hospital, Karachi

**Syed Saad Afzal**

Ashfaq Clinic, Karachi.

**Zulekha Saleem**

Ziauddin College of Rehabilitation  
Sciences, Karachi

**Areeba Mehmood**

PNS Shifa Hospital, Karachi

**Madiha Peer Muhammad**

Jinnah Sindh Medical University,  
Karachi

**Syeda Rida Baqir**

Bahria University Health Sciences,  
Karachi. (Corresponding Author)

[dr\\_rida91@yahoo.com](mailto:dr_rida91@yahoo.com)

### Article Info



This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license <https://creativecommons.org/licenses/by/4.0>

### Abstract

#### Background

Sarcopenia is an age-related muscle wasting which the occurrence of the loss of mass and strength of muscles in older adults. The rate of hospitalization may be increased by about 34% among more than and equal to 65 years of sarcopenia patients. This condition leads to physical disability, decreases the quality of life, and enhances the death rate in older people.

#### Objective

To determine the awareness of healthcare professionals regarding sarcopenia in the older adult population.

#### Methodology

This is a cross-sectional survey-based study that was conducted from May 2024 to October 2024, the study population was healthcare professionals from seven districts of Karachi and the sample size was 384, the sampling technique was non-probability purposive sampling. The validated questionnaire was used to evaluate the awareness of healthcare professionals regarding sarcopenia among older adults. The data was analyzed through SPSS version 23.0.

#### Result

There were 384 healthcare professionals selected from seven districts of Karachi. The level of awareness of the term sarcopenia and its explanation was highest at 11.97% and 14.58% in physical therapists among the research participants, The prevention and treatment of sarcopenia was thought to be more in physical therapists at 20.57%. And the importance of sarcopenia was thought to be more in physical therapists i.e.: 23.17%.

#### Conclusion

Our study concluded the level of awareness regarding sarcopenia was proved to be higher in physical therapists and lowest in nurses among all research participants.

**Keywords:** Perception, muscle wasting, healthcare workers, rehabilitation, physical activity, and geriatric population, etc.

## Introduction

A condition in which muscular mass and strength are reduced is called sarcopenia.<sup>1</sup> It is a progressive age-related condition that decreases the physical activity of the person or makes the person immobile or dependent on others.<sup>2</sup> This condition leads to physical disability, decreases the quality of life, and enhances the death rate in older people.<sup>3</sup> This sarcopenia increases the rate of hospitalization by 34 percent in the age of 65 years and more than 65.<sup>4</sup> It affects the health of the community and around 50 percent of the geriatric population is affected by this condition and goes for physical therapy to reeducate the muscle and their body. The changes in muscular mass and decreases the physical activity may lead to a process of aging.<sup>5</sup> This showed that factors may vary in the progression of sarcopenia in older adults due to their diet plan they take improper diet or eat unhealthy foods which increase the chance of developing sarcopenia in older persons.<sup>6</sup> If old people can manage their diet, or eat healthy foods it can improve their lifestyle of the person and also prevent sarcopenia and also promote their life for a longer duration.<sup>7</sup> Older adults must find out about the sarcopenic condition in the initial stage because it minimizes the complications that they face in the future like risks of falls, fall injuries, hospital admissions, etc.<sup>8</sup>

In hospitals, many healthcare professionals work as consultants, physical therapists, dieticians, and nurses.<sup>9</sup> Most professionals know about sarcopenia but on the other hand, there is a lack of knowledge to diagnose this condition at an early stage if they can diagnose it as soon as earlier then they will treat the patient or guide the patient accordingly.<sup>10</sup> Around one-tenth of healthcare professionals diagnose the term sarcopenia in their practice otherwise most of the cases are found undiagnosed because they have insufficient time, and no active participation between healthcare professionals.<sup>11</sup> Multiple healthcare professionals working with the geriatric population alone the physicians, nutritionists, physical therapists, and nurses. If they work in collaboration with each other they

can facilitate the geriatric population in the early stage or before going to the early stage of sarcopenia.<sup>12</sup> Working with the geriatric population is a collaborative task for healthcare professionals because older people face many problems in their lives, health issues, and economic crises soon they can overcome their problems by collaborating and implementing a variety of things for these patients in their clinical practice.<sup>13</sup>

Sarcopenia is a very serious condition that affects the function and mobility of older adults.<sup>14</sup> In the Netherlands, the rehabilitation of geriatric people occurs in hospitals or special healthcare setups to reeducate the people and guide them according to their condition.<sup>15</sup> The awareness of sarcopenia in healthcare professionals is highly recommended for treating the patient and managing their signs and symptoms which enhances the physical activity of the people and promotion of the lifestyle.<sup>16</sup> The study aims to know the awareness of healthcare professionals regarding the condition of sarcopenia.

## METHODOLOGY

There was a cross-sectional study conducted among the healthcare professionals of Karachi. The duration of the study was May 2024 to Oct 2024. The participants of the study were selected through a non-probability purposive sampling technique. The sample size of 384 was calculated through Raosoft.com software. The inclusion criteria were both male and female, healthcare professionals like Consultants, Physical Therapists, Nurses, and nutritionists who currently work in the hospital setups of Karachi, between the age group of 20 to 55 years, and they must have at least one year of working experience to more than five years. The participants will be excluded based on their non-willingness and who were working in academic setups instead of clinical ones. The validated questionnaire was used which was already used in the previous study in 2024. In which demographic information of research participants as well as questions related to awareness of healthcare professionals regarding

sarcopenia among older adults.<sup>17</sup> The data analysis was done through SPSS version 23.0 software.

## RESULT

There were 384 healthcare professionals selected from districts (East, West, South, North, Central,

Malir, Korangi, Kemari) of Karachi. Data were evaluated by a validated questionnaire used in a previous study in 2024. The demographic information of research participants is mentioned in Table no:1

**Table no:1 Demographic Characteristics of Healthcare Professionals**

<b>VARIABLES</b>	<b>FREQUENCY (%)</b>
<b>Age</b>	
20-25	48(12.5%)
26-30	76(19.79%)
31-35	89(23.17%)
36-40	68(17.70%)
41-45	52(13.54%)
46-50	39(10.15%)
51-55	12(3.12%)
<b>Gender</b>	
Male	138(35.93%)
Female	246(64.06%)
<b>HealthCare Professionals</b>	
Consultants	102(26.56%)
Physical Therapists	113(29.42%)
Nurses	97(25.26%)
Nutritionist	72(18.75%)
<b>Working Experience</b>	
1-2 years	
3-4years	118(30.72%)
>5years	123(32.03%)
	143(37.23%)
<b>Working Setups</b>	
Inpatient	101(26.30%)
Outpatient	84(21.87%)
Rehabilitation centers	120(31.25%)
Old Home	79(20.57%)

When we asked questions related to the awareness of research participants regarding the term sarcopenia 39(10.15%) consultants responded it is a condition, 46(11.97%) physical Therapists responded it is a condition, 39(10.15%) nurses responded that don't know while 28(7.29%) nutritionist responded it is a syndrome.

When we told them to explain the term sarcopenia 45(11.71%) consultants, 56(14.58%) physical therapists, 40(10.41%) nurses while 32(8.33%) nutritionists responded with the same answer as both muscle mass and strength decreases.

When we asked if there is no possibility of the prevention of sarcopenia 52(13.54%) consultants responded disagree, 79(20.57%) physical therapists responded disagree, 38(9.89%) nurses responded agree while 36(9.37%) nutritionist responded disagree.

When we asked if there is no possibility of treating sarcopenia 71(18.48%) consultants responded disagree, 79(20.57%) physical therapists responded disagree, 45(11.71%) nurses responded agree while 49(12.76%) nutritionists responded disagree.

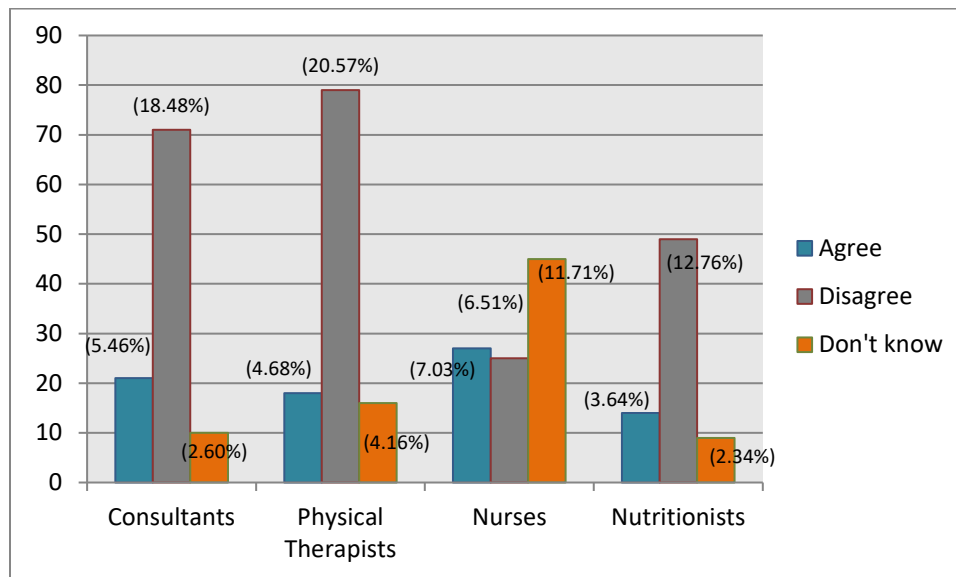
When the question related to the importance of sarcopenia in the older population 81 (21.09%) consultants responded it is important, 89 (23.17%) physical therapists responded it is important, 38 (9.89%) nurses responded they don't know while 46 (11.97%) nutritionist responded it is important as shown in Table no: 2

**Table no: 2 Awareness of Sarcopenia among Healthcare Professionals**

Questions related to the awareness of sarcopenia	Consultants (n=102)	Physical Therapists (n=113)	Nurses (n=97)	Nutritionists (n=72)	Total (n=384)
<u>Sarcopenia is known as a:</u>					
-Disease	20 (5.20%)	23 (5.98%)	14 (3.64%)	15 (3.90%)	72 (18.75%)
-Syndrome	28 (7.29%)	32 (8.33%)	17 (4.42%)	28 (7.29%)	105 (27.34%)
-Condition	39 (10.15%)	46 (11.97%)	27 (7.03%)	19 (4.94%)	131 (34.11%)
-Don't know	15 (3.90%)	12 (3.12%)	39 (10.15%)	10 (2.60%)	76 (19.79%)
<u>It explains as a:</u>					
-Muscle mass decreases	32 (8.33%)	26 (6.77%)	21 (5.46%)	12 (3.12%)	91 (23.69%)
-Muscle strength decreases	25 (6.51%)	31 (8.07%)	36 (9.37%)	28 (7.29%)	120 (31.25)
-Both muscle mass & strength decreases	45 (11.71%)	56 (14.58%)	40 (10.41%)	32 (8.33%)	173 (45.05%)
<u>Sarcopenia cannot be prevented:</u>					
-Agree	29 (7.55%)	22 (5.72%)	38 (9.89%)	25 (6.51%)	114 (29.68%)
-Disagree	52 (13.54%)	79 (20.57%)	35 (9.11%)	36 (9.37%)	202 (52.6%)
-Don't know	21 (5.46%)	12 (3.12%)	24 (6.25%)	11 (2.86%)	68 (17.7%)
<u>It cannot be treatable:</u>					
-Agree	21 (5.46%)	18 (4.68%)	27 (7.03%)	14 (3.64%)	80 (20.83%)
-Disagree	71 (18.48%)	79 (20.57%)	25 (6.51%)	49 (12.76%)	224 (58.33%)
-Don't know	10 (2.60%)	16 (4.16%)	45 (11.71%)	9 (2.34%)	80 (20.83%)
<u>Importance of sarcopenia in older adults</u>					
-Important	81 (21.09%)	89 (23.17%)	24 (6.25%)	46 (11.97%)	240 (62.5%)
-Quite important	12 (3.12%)	13 (3.38%)	12 (3.12%)	11 (2.86%)	48 (12.5%)
-Not important	7 (1.82%)	7 (1.82%)	23 (5.98%)	6 (1.56%)	43 (11.19%)
-Don't know	2 (0.52%)	4 (1.04%)	38 (9.89%)	9 (2.34%)	53 (13.80%)

When the question asked them about the possibility of treating sarcopenia 71(18.48%) consultants responded disagree, 79(20.57%)

physical therapists responded disagree, 45(11.71%) nurses responded agree while 49(12.76%) nutritionists responded disagree as shown in Figure no:1



**Figure no:1 Possibility of treating sarcopenia pts according to HCP**

## DISCUSSION

Sarcopenia is defined as the loss of mass and strength of muscles among the geriatric population. It is also known as age-related muscle wasting.<sup>18</sup> The major issues in this condition are the lack of physical activity, and exercise, poor diet, falling, muscle atrophy, weakness, and difficulty in performing activities of daily living, etc. Physical activity, exercises, and a healthy balanced diet were proven to be the preventive measures for this condition.<sup>19</sup>

From the present study, data was collected through multiple setups among them the highest amount of healthcare workers were working in rehabilitation centers because their job is to re-educate older adults after age-related muscle weakness and waste than from hospitals and because the huge amount of healthcare professionals are working in the IPD environment. A study stated that those healthcare workers who are working in primary healthcare centers have limited knowledge of sarcopenia this may be because the reasons patients who visit the primary setups may present with muscle problems but not always lie in the sarcopenia condition.<sup>20</sup>

According to the study, healthcare workers who specialized in the geriatric field were more expert in the diagnoses and understanding of the sarcopenia term<sup>21</sup> as compared to the present study, the awareness of healthcare professionals regarding the term sarcopenia was proved to be more in consultants, and physical therapists because they know how to prevent and manage the sarcopenia patients due to their higher exposures.

A study conducted at Colombia. In conclusion, the perception and knowledge of sarcopenia are more common in physical therapists because they are dealing with musculoskeletal problems in their clinical environment more as compared to other healthcare professionals.<sup>22</sup> The result of our study also supports the outcome of this study that the physical therapist participants of our study have greater knowledge regarding sarcopenia definition and prevention.

In the present study, the knowledge of consultants and physical therapists has more in the possibilities of treating sarcopenia as compared to the other healthcare professionals in comparison this study reported, the management strategies of different healthcare professionals related to sarcopenia in older adults: the role of nutritionists was to focus on the protein intake of patients because protein and calcium can be used

to prevent this condition, the role of physical therapists was to build up the strength of patients weak muscles through strength training and resistive exercises and role of pharmacological agents was not proved to be introduced in the latest health market and still work in process regarding the treatment of sarcopenia specifically.<sup>23</sup>

## CONCLUSION

It is concluded by the present study that the awareness of sarcopenia was higher in physical therapists and lesser in nurses. In addition, The awareness of healthcare professionals is improving day by day with the increasing awareness through various health-promoting platforms but still a significant gap in knowledge among healthcare professionals, because it is a condition that must be treated by the teamwork of various professionals like doctors, nurses, physical therapists, nutritionists with the implementation of current research, proved management protocols that may help the healthcare professionals for the better understanding of the condition sarcopenia, its prevention, assessment, and treatment that will improve the outcome of the older population.

## REFERENCES

- Williams GR, Dunne RF, Giri S, Shachar SS, Caan BJ. Sarcopenia in the older adult with cancer. *Journal of Clinical Oncology*. 2021 Jul 7;39(19):2068.
- Gao Q, Mei F, Shang Y, Hu K, Chen F, Zhao L, Ma B. Global prevalence of sarcopenic obesity in older adults: a systematic review and meta-analysis. *Clinical Nutrition*. 2021 Jul 1;40(7):4633-41.
- Kaluźniak-Szymanowska A, Krzywińska-Siemaszko R, Deskur-Śmielecka E, Lewandowicz M, Kaczmarek B, Wiczorowska-Tobis K. Malnutrition, sarcopenia, and malnutrition-sarcopenia syndrome in older adults with COPD. *Nutrients*. 2021 Dec 23;14(1):44.
- Ko YC, Chie WC, Wu TY, Ho CY, Yu WR. A cross-sectional study about the relationship between physical activity and sarcopenia in Taiwanese older adults. *Scientific Reports*. 2021 Jun 1;11(1):11488.
- Luo YX, Zhou XH, Heng T, Yang LL, Zhu YH, Hu P, Yao XQ. Bidirectional transitions of sarcopenia states in older adults: The longitudinal evidence from CHARLS. *Journal of Cachexia, Sarcopenia and Muscle*. 2024.
- Tu DY, Kao FM, Tsai ST, Tung TH. Sarcopenia among the elderly population: A systematic review and meta-analysis of randomized controlled trials. *InHealthcare* 2021 May 31 (Vol. 9, No. 6, p. 650). MDPI.
- Chen F, Xu S, Wang Y, Chen F, Cao L, Liu T, Huang T, Wei Q, Ma G, Zhao Y, Wang D. Risk factors for sarcopenia in the elderly with type 2 diabetes mellitus and the effect of metformin. *Journal of Diabetes Research*. 2020;2020(1):3950404.
- Cao W, Zhu A, Chu S, Zhou Q, Zhou Y, Qu X, Tang Q, Zhang Y. Correlation between nutrition, oral health, and different sarcopenia groups among elderly outpatients of community hospitals: a cross-sectional study of 1505 participants in China. *BMC geriatrics*. 2022 Apr 16;22(1):332.
- Milewska M, Przekop Z, Szostak-Węgierek D, Chrzanowska M, Raciborski F, Traczyk I, Sińska BI, Samoliński B. Prevalence of Risk of Sarcopenia in Polish Elderly Population—A Population Study. *Nutrients*. 2022 Aug 24;14(17):3466.
- Ko JB, Kim KB, Shin YS, Han H, Han SK, Jung DY, Hong JS. Predicting sarcopenia of female elderly from physical activity performance measurement using machine learning classifiers. *Clinical Interventions in Aging*. 2021 Sep 27;1723-33.

- Shen Y, Shi Q, Nong K, Li S, Yue J, Huang J, Dong B, Beauchamp M, Hao Q. Exercise for sarcopenia in older people: a systematic review and network meta-analysis. *Journal of cachexia, sarcopenia and muscle*. 2023 Jun;14(3):1199-211.
- Oliveira JS, Pinheiro MB, Fairhall N, Walsh S, Franks TC, Kwok W, Bauman A, Sherrington C. Evidence on physical activity and the prevention of frailty and sarcopenia among older people: a systematic review to inform the World Health Organization physical activity guidelines. *Journal of Physical Activity and Health*. 2020 Aug 11;17(12):1247-58.
- Bachettini NP, Bielemann RM, Barbosa-Silva TG, Menezes AM, Tomasi E, Gonzalez MC. Sarcopenia as a mortality predictor in community-dwelling older adults: a comparison of the diagnostic criteria of the European Working Group on Sarcopenia in Older People. *European journal of clinical nutrition*. 2020 Apr;74(4):573-80.
- Petermann-Rocha F, Balntzi V, Gray SR, Lara J, Ho FK, Pell JP, Celis-Morales C. Global prevalence of sarcopenia and severe sarcopenia: a systematic review and meta-analysis. *Journal of cachexia, sarcopenia and muscle*. 2022 Feb;13(1):86-99.
- Dorhout BG, Overdeest E, Tieland M, Nicolaou M, Weijs PJ, Snijder MB, Peters RJ, Van Valkengoed IG, Haveman-Nies A, De Groot LC. Sarcopenia and its relation to protein intake across older ethnic populations in the Netherlands: the HELIUS study. *Ethnicity & Health*. 2022 Apr 3;27(3):705-20.
- Cho MR, Lee S, Song SK. A review of sarcopenia pathophysiology, diagnosis, treatment and future direction. *Journal of Korean medical science*. 2022 May 9;37(18).
- Verstraeten LM, van Wijngaarden JP, Meskers CG, Maier AB. High Sarcopenia Awareness Contrasts a Lack of Clinical Implementation Among Geriatric Rehabilitation Health Care Professionals in the Netherlands: EMPOWER-GR. *Journal of Geriatric Physical Therapy*. 2024 Apr 1;47(2):67-76.
- Xu J, Wan CS, Ktoris K, Reijnierse EM, Maier AB. Sarcopenia is associated with mortality in adults: a systematic review and meta-analysis. *Gerontology*. 2022 Jul 27;68(4):361-76.
- Nishikawa H, Fukunishi S, Asai A, Yokohama K, Nishiguchi S, Higuchi K. Pathophysiology and mechanisms of primary sarcopenia. *International journal of molecular medicine*. 2021 Aug 1;48(2):1-8.
- Yao XM, Liu BB, Deng WY, Wang X. The awareness and knowledge regarding Sarcopenia among healthcare professionals: a scoping review. *The Journal of Frailty & Aging*. 2022 Jul;11(3):274-80.
- Silva RF, Figueiredo MD, Darder JJ, Santos AM, Tyrrell MA. Sarcopenia screening in elderly in primary health care: nurse knowledge and practices. *Revista brasileira de enfermagem*. 2020 Dec 7;73(suppl 3):e20200421.
- Gabriela RU, Lopez-Lopez Jose P, Isabela GM, Yuri SM, Mabel R, Gonzalez Ana M. Knowledge on muscle strength among health professionals in Colombia: cross-sectional study. *Revista Cuidarte*. 2024 Sep;15(3):e3953.
- Chen YS, Yin TH, Huang HY, Huang TH, Lai MC, Chang CM, Huang CW. Prevalence of and risk factors for pre-sarcopenia among healthcare professionals. *Clinical Nutrition Open Science*. 2023 Dec 1;52:179-92.