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Original Research

Activity level predicts 6-minute walk distance in healthy older females: an observational study

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Abstract

Background: The 6-minute walk test (6MWT) is frequently employed in clinical settings and academic studies. Few research has examined activity level as a 6MWD predictor, and current predictive models do not take activity level into account. The 6-min walk test (6MWT) is a simple tool for the evaluation of functional exercise capacity, which reflects the capacity of the individual to perform activities of daily living. Aims &Objectives: In a convenience sample of older females, the study's goal was to determine whether activity was a reliable predictor of 6MWD. To determine if adding activity level to current models for the 6MWT in healthy older women enhanced their prediction accuracy as well as to confirm the validity of such models. Material and Methods: In several regions of Punjab (Kamoke, Multan, and Okara), data from home visits were gathered for this observational study. The study's sample size of 30 healthy females was chosen using a convenience sampling technique from a group of healthy older non-smoking women who were both active and sedentary and had no lung or musculoskeletal conditions. The study's primary outcomes were measured, including age, height, weight, and 6MWD. Each subject filled out a consent form and signed it to indicate their understanding. This study demonstrated how important it is to consider physical activity levels when predicting 6MWD in older women. The statistical program for the social sciences (SPSS), version 2016, was used to analyze the data.

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Introduction: An easy field walking test called the 6-min walk test (6MWT) is frequently used in clinical settings to gauge a person's ability to perform functional exercise. The 6MWT's ease of use is one of its many benefits. The 6-minute walk distance (6MWD) is frequently used as a measure of cardiorespiratory fitness and has been shown to be effective in a variety patient populations with chronic conditions [1]

The 6MWT, in contrast to pulmonary function testing, detects the extrapulmonary signs of chronic respiratory disease that frequently coexist with pulmonary ones, such as malignancy, frailty, sarcopenia, and cardiovascular disease. This test doesn't need sophisticated equipment or technical know-how, unlike cardiopulmonary exercise stress testing [2].An efficient way to gauge practical exercise capability is the 6-min walk test (6MWT). It assesses someone's capacity to perform daily tasks.[3]

Since it reflects the capability to engage in day- to-day activities or, alternatively, a functional constraint, the ability to walk a distance is an efficient and affordable performance-based measure and a crucial part of quality of life [4]. In 1986, it was transported outside following an examination of patients with illnesses such as chronic obstructive pulmonary disease. More than a few research populations have it as a chronic condition in the past. In addition to older persons, interested patients who couldn't lie between two positions during a regular complete cycle ergometer test were able to receive the 6MWT perform keep in facilities [4].

Material and methods: Study type: This study was cross-sectional observational. **Setting:** The information was gathered in several parts of Punjab, including Kamoke, Multan, and Okara. **Sample Size:** 30 healthy older women. **Sampling Technique:** A convenience sampling technique was used in this study. **Inclusion Criteria:** Participants' ages ranged from 40 to 70; they could neither be older nor younger than 40. The participants were performing typical ADLs. **Exclusion Criteria**: Participants with psychiatric conditions such as Alzheimer's, schizophrenia, etc. were disqualified from the study. People with spinal disc problems were excluded. The study was not appropriate for subjects who had been in a car accident. **Data collection Procedure:** An observational study was carried out utilizing data from different sites (Kamoke, Okara, and Multan) to assess the level of exercise in older, healthy females. Convenience sampling was employed in this investigation. The required information could be gathered thanks to the ability to deliver questionnaires to 30 healthy ladies. A major method of data collection was the Global Physical Activity Questionnaire (GPAQ), as it was once termed. This questionnaire, consisting of 10 closed-ended questions, was given to the 21 women who enrolled after being approved for the study. Participants had to be aged between 40 and 70, but they couldn't be either younger than 40 or older than 70, and they had to be performing brand-new ADLs. Participants that suffer from psychiatric disorders like Alzheimer's, schizophrenia. **Data Collection Tools**: The main instrument for data collection was an upgraded GPAQ (Global Physical Activity Questionnaire). Prior to and following the assessment, blood pressure was measured using a BP machine.

Results: Demographic Data:30 Active healthy females were enrolled in the study. All participants filled the questionnaire and there was no drop out in this study. Subjects participated in the study fulfilled all the parameters.

1. DISCUSSION

Activity level was at one point the study's key finding. In the past, it was a trustworthy 6MWD independent predictor. The active group did ADLs faster and at a higher level than the sedentary group. The investigation's main determining element in the past was age (Table 4.1). This generation has discovered through studies that activity levels decline with ageing. A convincing biological theory explains why the level of recreation would be a strong predictor of6MWD. Well-known age-related reduction in bone quality, a decline in functional status, and a decline in heart function. The results of the earlier study, which revealed that healthy Singaporeans aged 45 to 85 accounted for 78% of the 6MWD variance, were previously associated with this result [5].

An earlier study's findings showed the 6MWT- distance significantly changed depending on health state in elderly adults living in the community further supported this conclusion. The suggested framework for classifying elderly health helps identify those who are less physically fit and may be helpful in directing senior exercise instructors [6].

This finding was further supported by a recent study that showed full-size differences in the 6MWT-distance among elderly residents of communities according to health status. By identifying those who would benefit from additional physical exercise, the suggested system for classifying older adults' health could assist senior physical trainers [7].

Conclusion: This study 6 minute walk test in healthy females age 40-70 years concluded that activity level decreases with age due to physiological and neurological change with age. The subjects that are in group 1 (40-50) cover more distance in six minutes then the subjects of group 2(51- 60), and group 2 subjects cover more distance in six minute walk then group 3(61- 70). Older age females feeling more exertion during work.

Summary: This observational study gathered information from various sites (Kamoke, Okara, and Multan) in order to observe the stage of activity in older, healthier women. In this study, convenience sampling was used. They were given questionnaires from 30 healthy females in order to collect the data. The primary instrument utilized to gather data was the Modified GPAQ (Global Physical Activity Questionnaire). After receiving their consent and enrolling in the study, 30 women received this tool, which consists of 10 closed-ended questions. Ages between 40 and 70, as well as participants' preferred ADLs, were requirements for admission. Participants must be 40 years of age or older. The study has excluded participants who have been diagnosed with psychiatric disorders including Alzheimer's, schizophrenia, etc.

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Table 1. Showing frequency of demographics and other variables

	variables		Frequency
Age of respondent	40-50		33.3%
	51-60		66.7%
	61-70		33.3%
Daily hours of work	4 hours		33.3%
	6 hours		33.3%
	8 hours		20.0%
	10 hours		13.3%
exertion during wt. lifting and carrying	No	10	33.3%
	yes	20	66.7%
Dizziness during work	yes	14	46.7%
	no	16	53.3%
minutes\hours of walk continuously in a day	10	9	30.0%

Table 2. Chi-square results i.e p value<0.05 that's mean there is a significant association between the variables.

	20	11	36.7%
	40	3	10.0%
	variables	Frequency	
	1 hour	6	23.3%
blood pressure before 6 mint walk test	90\50-100\60	2	6.7%
	110\70-120\80	21	70.0%
	130\90-140\100	7	23.3%
blood pressure after 6 mint walk test	100/70-120/80	2	6.7%
	130/90-140/100	23	76.7%
	150/110 - 160/120	5	16.7%

Table 3. Pearson Chi-Square Test

Variable	df	Asymp.sig.(2 tailed)
Exertion during wt. lifting and carrying	2	.00005
Minutes/hours walk continuously in a day	6	.0000
Distance covered in six minute walk test	6	.00001