Original Research Article

Determination of Physical Fitness of the Nursery Workers with Socio-personal Variables

J. Deepika[1*], P. Radha Rani[1], V. Vijaya Lakshmi[2], R. Neela Rani[3] and A. Dhandapani[4]

[1]*Department of Resource Management and Consumer Sciences, College of Home Science, PJTSAU, Hyderabad, India*
[2]*FRM –AICRP (Home Science), PJTSAU, Hyderabad, India*
[3]*Department of Home Science and Extension Education, College of Home Science, PJTSAU, Hyderabad, India*
[4]*Department of Statistics/Computer Applications, National Academy of Agricultural Research Management, Rajendranagar, Hyderabad, India*
*Corresponding author

A B S T R A C T

A study was conducted in twin cities of Telangana, Hyderabad and secunderabad mainly to determine physical fitness of the nursery workers with socio-personal variables. Exploratory research design was selected for the study. A total of 120 plant nursery workers were selected. Height and weight of the nursery workers were recorded by using tools viz., Anthropometric rod and weighing machine. Descriptive analysis and chi-square were used for analyzing the data. Results of the study revealed that majority of the nursery workers height was found to be (mean=154cm) and weight (mean=55.86kgs) and were ranged between from 148-161cm and between 45-67 kgs respectively. Nursery workers belonged to mesomorph body type category and their body mass index were in normal category, so it can be said that the physical fitness of these nursery workers was good. Majority (41.67%) of the nursery workers belonged to the normal blood pressure. There was highly significant association between body mass index and age, marital status, educational qualification, number of years of work experience and work pattern of the nursery worker at 0.01 level.

Introduction

Physical fitness and socio-personal attributes are issues of considerable interest to public health, medicine and education. Public health and biomedical views focus on physical fitness in the context of health promotion and disease prevention and physical inactivity as a major risk factor, among others, for degenerative disease.

Physical fitness is defined as a state of health and welfare and, more exclusively, the ability to perform task in different occupations and daily activities and it is achieved through the appropriate nutrition (Tremblay, 2010), moderate-vigorous physical exercise (De groot, 2010) and sufficient rest (Malina, 2010). In another words, it is a set of features seen in different people which related to the ability to perform a set of physical activities.

Body mass index is an indicator of total body fat and is therefore an indicator of health risk. BMI is used by healthcare professionals to screen for overweight and obese individuals. BMI, which is calculated as weight (kg) divided by height squared (m^2), was chosen as a simple measurement of body weight in relation to height. While increases in both body fat and lean tissue cause increments in BMI, relationships between body weight and health are conventionally expressed in terms of BMI rather than body fat (Zimmet, 2006).

Although the measurement and analysis of body weights and heights have been recognized as general indices of health for many years, it is only comparatively recently that the World Health Organization (WHO) has set out criteria for assessing underweight and overweight in both children and adults (WHO, 1995). There are various causes of obesity such as environmental pollution, stress, and lack of exercise, overeating combined with lack of exercise is considered to be the main cause according to most scientists (Na *et al.,* 2001). The purpose of this study was to find out the relationship between body mass index and socio-personal variables.

Jill *et al.,* (2017) examined a cross sectional survey of denver residents in gardening and age related weight gain. A total of 469 workers were selected for the study. The base model had BMI in kg/m^2 as the outcome, and age, an indicator variable for non-gardening status and the age-by-non-gardening status interaction as predictors. BMI was 27.18 kg/m_2 for non-gardeners, 25.62 kg/m_2 for home gardeners, and 24.17 kg/m^2 for community gardeners. In the base model, a statistically significant association was observed between age and BMI for non-gardeners but not for the combined community and home gardening group (F = 9.27, ndf = 1, ddf = 441,

p = 0.0025). Gardeners differed on social and demographic factors when compared to non-gardeners.

A study was investigated by Etheredge and Zajicek (2016) on the influence of gardening activities on self reported health problems, allergies and body mass index (BMI), of gardeners and non-gardeners. A total of 1015 people participated in the study. The findings of the study revealed that non-gardeners were less physically active when compared with gardeners. However, frequency of gardening did not have a statistically significant impact on gardeners' BMI. There was also no difference in BMI between gardeners and non-gardeners. Gardeners also reported that there were more frequently suffering with ear infection/ear ache, high cholesterol, kidney stone, gallstones and arthritis symptoms. There was no statistically significant difference in incidence of allergies between gardeners and non-gardeners.

Surabhi *et al.,* (2012) aimed to study on anthropometric measurements and body composition parameter of farm women. The anthropometric data of 150 farm women was collected in three villages of Dantiwada taluka namely, Nilpur, Lodpa and Madivas in North Gujarat. The Body composition of farm women was recorded by using Body Fat Analyzer. Results of the study revealed the mean stature of farm women in north Gujarat was found 1506.4 mm whereas, 5th, 50th and 95th percentile were 1434.5, 1525.0 and 1635.5 mm respectively. Mean weight of farm women was found 33.08 kg, however 5th, 50th and 95thpercentile of weight were 24 kg, 30.5 kg and 46.55 kg respectively. The results also showed that mean Body Mass index was in the range of optimal health. On the other hand, value of 5th percentile was found to be in the range of severe CED Grade III. There was a significant difference between maximum and minimum range of

various body parameters of selected farm women.

Materials and Methods

Exploratory research design was selected for the study. A total of 120 plant nursery workers from twin cities of Telangana i.e., Hyderabad and Secunderabad were selected for the study. Interview schedule was used for data collection. Height and weight of the nursery workers were recorded by using tools viz., Anthropometric rod and weighing machine. Descriptive analysis and chi-square were used for analyzing the data.

Results and Discussion

The results of the study were presented below

General information of the nursery workers

In plant nursery business, majority of the nursery workers belonged to middle age between 27-45 years and majority of male workers were involved in plant nurseries. Most of the nursery workers had their education up to the primary level. Highest number of nursery workers who involved in plant nurseries were married and belonged to semi urban area. Majority of the nursery workers belonged to nuclear family and the family size was ranged between i.e., 4-5 members. On an average nursery worker's had 5- 8 years of work experience.

Physical attributes of the nursery workers

Physical attributes of nursery workers were selected for the study viz., height, weight, body type and body mass index. The data is tabulated, presented and discussed below

From table 1, body height of the nursery workers reported that majority (68.33%) of nursery workers was ranging between 148-161cm and 17.50 per cent of nursery workers was ranging between 162-178cm and remaining 14.17 per cent of nursery workers height was ranging between 133-147cm. the mean height of the nursery workers was 154 cm with a standard deviation of 7.7 (Table 1).

With reference to the body weight of the nursery workers, it was observed that majority (75.00%) of nursery workers belonged to the medium range of 45-67 kg body weight. On the other hand 14.17 per cent of nursery workers belonged to the range of body weight i.e., 68-100 kg and remaining of them (10.83%) belonged to the range of 36-44 kg body weight (Table 1).

Body type of the nursery workers has been indicated in Figure 1, which revealed that the majority of the nursery workers belonged to the mesomorph (43.33%) body type category as per the Quetelt's index followed by endomorph (30.00%) and few (26.67%) were ectomorph.

Body Mass Index of the nursery workers has been indicated in table which revealed that 52.50 per cent of the nursery workers were in normal category range (18.5-24.99) followed by 21.67 per cent in over weight category (25.0-29.99) and 15.83 per cent of them were in underweight.

Only 4.17 per cent of the nursery workers were in obesity (class 2) ranging between 35.00-39.99 and 5.83 percent of them belonged to obesity (class 1) ranging between 30.00-34.99 kg/m^2. The mean of the nursery workers were in 25.58 with a standard deviation of 5.4 (Table 2).

Table.1 Physical attributes of the nursery workers n=120

Variables	Frequencies (N)	Percentages (%)	Mean±S.D
Height (cm)			
133- 147	17	14.17	154.40±7.7
Between 148-161	82	68.33	
162-178	21	17.50	
Weight (kg)			
36- 44 kgs	13	10.83	55.86±11.9
Between 45-67 kgs	90	75.00	
68-100kgs	17	14.17	

Table.2 Body mass index of the nursery workers n=120

| Body mass Index	Range	Frequency (N)	Percentages (%)
Under weight	18.5 or less	19	15.83
Normal weight	18.5 to 24.99	63	52.50
Over weight	25.0 to 29.99	26	21.67
Obesity (class 1)	30 to 34.99	7	5.83
Obesity (class 2)	35 to 39.99	5	4.17
40 or greater	Morbid obesity	--	--
Total		**120**	
Mean±S.D		23.58±5.4	

Table.3 Association between body mass index and selected variables of the study

Variables	Age in years	Gender	Marital status	Educational qualification	Number of years of work experience	Work pattern
χ^2 value	3983.3	105.2	338.7	690.8	1241.3	459.3
df	3220	92	276	552	1012	368
Probability value	0.0001[**]	0.163[ns]	0.006[**]	0.0001[**]	0.0001[**]	0.001[**]
Note: **- Significant at probability level of < 0.01ns – non significant						

Table.4 Blood pressure of nursery workers N=120

Blood Pressure	Systolic (Upper)mmHg	Diastolic (Lower) mmHg	Frequency (N)	Percentages (%)
Normal	Under 120	Under 80	50	41.67
Pre-hypertension	120-139	80-89	42	35.00
Hypertension (Stage 1)	140-159	90-99	23	19.17
Hypertension (Stage 2)	Above 160	Above 100	5	4.17
Hypertensive crisis	Above 180	Above 110	-	Nil
Total			120	100

Fig.1 Distribution of respondents by body type
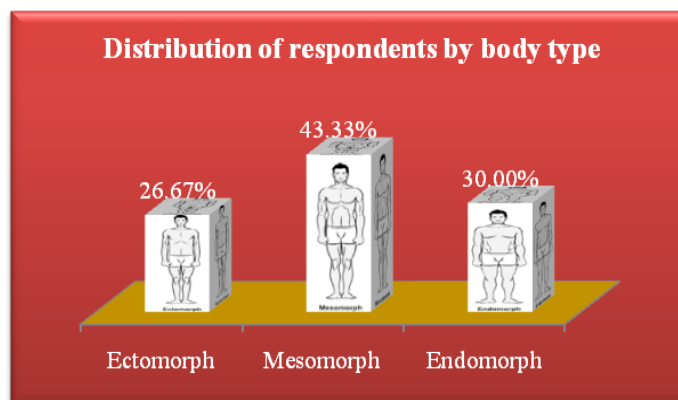
Association between body mass index and selected variables of the study

Association between body mass index of nursery workers and selected independent variables of the study was tested statistically. The hypothesis formulated states that there exists a significant association between the body mass index of nursery workers and selected variables viz., age, gender, marital status, educational qualification, work experience and work pattern.

When the association between the body mass index and selected variables of the study was found out by chi square test, it was highly significant association was found between body mass index and age, marital status, educational qualification, number of years of work experience and work pattern of the nursery worker at 0.01 level whereas no significant association was found between body mass index and gender of the nursery workers (Table 3).

Hence, the null hypothesis was rejected in case of association between body mass index and age, marital status, educational qualification, number of years of work experience and work pattern of nursery worker. The null hypothesis was accepted in case of association between body mass index and gender.

Blood pressure of the nursery workers

Blood Pressure of the nursery workers were selected as a variable for the study and it was categorized into normal (under 120/80mmHg), pre-hypertension (120-139 /80-89mmHg), hypertension-stage 1 (140-159/90-99 mmHg) and hypertension-stage 2 (above 160/100mmHg).

From the above given table 4, it was recorded that majority (41.67%) of the nursery workers belonged to the normal blood pressure. Whereas 35.00 per cent of the nursery workers belonged to pre-hypertension and some workers were belonged to hypertension-stage 1 (19.17%). Only 4.17 per cent of the nursery workers were belonged to hypertensive-stage 2 and none of them in hypertensive crisis.

Hence, it can be concluded from the data that on the whole majority of the nursery workers were in the height (mean=154cm) and height (mean=55.86kgs) of nursery workers were ranged between from 148-161cm and between 45-67 kgs respectively. Nursery workers belonged to mesomorph body type category and their body mass index were in normal category, so it can be said that the physical fitness of these nursery workers was good. Majority (41.67%) of the nursery workers belonged to the normal blood pressure There

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