



YOGA- A PERFECT STRENGTH DEVELOPMENTAL REMEDY FOR SENIORS

Jaysing M. Hotkar

Asst. Professor BPCAs College of Physical Education, Bhartiya Krida Mandir, Wadala,
Mumbai-31.

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Abstract

For every movement, we require muscle strength. In technical terms, muscle strength describes the force generated when a muscle or group of muscles contracts. In practical terms, muscle strength refers to the capacity to lift, push or pull against weight. Maintaining muscle strength over the long term is an essential component of our good health. The increasing age decreases strength, these made effect on mobility and its decline social engagement of the seniors. United Nations Population Fund and Help Age India suggests that India had 90 million elderly persons in 2011, with the number expected to grow to 173 million by 2026, of the 90 million seniors, 30 million are living alone, and 90 per cent work for livelihood The researcher was conducted a research, to find out health developmental exercise module for seniors. The present experiment was conducted by using Double-Pretest Posttest Single-Group Design. Urban Male Senior Citizens, aged 60 to 70 years was the target population of the study. Thirty (n=30) Male Senior Citizens of aged 60 to 70 years from Juinagar Citizen Club, Navi Mumbai were selected for the experiment. Yogic Practices were selected as Independent Variables whereas Muscular Strength was selected as Dependent Variable. Upper and Lower body muscular strength of the seniors was recorded in Pretest-1 Pretest-2 and Posttest. After Pretest-1, all selected subjects were restricted to participate in any yogic practices for 'Ten Weeks' i.e. blank period of the study, after the blank period of 'Ten Weeks', Pretest-2 of the same variables were conducted. After Pretest-2 all selected subjects were exposed to 'Yogic Treatment' for the period of 'Ten Weeks', daily in the morning for 60 minutes, except Sundays. After 'Yogic Treatment' Posttest of the same variable was conducted and data was recorded for the further investigation. It can be seen that there is significant difference in Lower Body Strength as well Upper Body Strength between Pretest-1 and Posttest at 0.01 level. This study was concluded that, Ten weeks selected Yoga training program helps to improve the Stregnth of Lower Body and Upper Body in Senior Urban Citizens.

Keywords: - Muscular Strength, Senior Citizens, Yoga

INTRODUCTION

For every movement we require muscle strength. In technical terms, muscle strength describes the force generated when a muscle or group of muscles contracts. In practical terms, muscle strength refers to the capacity to lift, push or pull against weight. Maintaining muscle strength over the long term is an essential component of our good health.

Many literature reveal that, older adults have a highest rate of chronic diseases, such as cardiovascular disease, cancer, diabetes, osteoporosis and arthritis. The increasing age decreases sensation of test, smell vision, hearing, mental ability, organic functions, cardio respiratory endurance, strength, flexibility, muscular endurance, balance and reaction time, these made effect on mobility and its decline social engagement of the seniors. This is a serious and important problem because, a report released by the United Nations Population Fund and Help Age India suggests that India had 90 million elderly persons in 2011, with the number expected to grow to 173 million by 2026, of the 90 million seniors, 30 million are living alone, and 90 per cent work for livelihood (Government of India, 2017).

The growth of the elderly population in the coming decades will bring with it unprecedented burdens of morbidity and mortality across the country. As we have outlined, key challenges to access health for the Indian elderly include social barriers shaped by gender and other axes of social inequality. Hence the researcher was conducted a research, to find out health developmental exercise module for seniors. The conducted research study was followed the following methods.

METHOD

- **Design of the study**

The present experiment was conducted by using *Double-Pretest Posttest Single-Group Design* (Kirk Roger, 2013).

- **Sample**

Urban Male Senior Citizens, aged 60 to 70 years was the target population of the study. *Thirty (n=30) Male Senior Citizens* of aged 60 to 70 years from Juinagar Citizen Club, Navi Mumbai were selected for the experiment.

- **Independent Variable**

The following Yogic Practices presented in Table 1 were selected as Independent Variables for the experiment.

Table 1 Independent Variables i.e. Asnas, Kriyas, Pranayama and Dhyana

‘Asnas’	‘Kriya’
Seating Posture	• Kapalbhati
• Vajrasana	‘Pranayama’
• Ardhpaddmasana	• Anulom–Vilom
• Gomukhasana	• Ujjayee Pranayama
• Parvatasana	Dhyana
• Paschimottanasana	• Omkar
• Shavasana	
• Pawanmuktasana	
• Bhujangasana	
• Ardhalasana	
• Ardhalbhasana	
• Naukasana	
• Shalabhasana	
• Tadasana	
• Utkatasana	
• Vrikshasana	

- **Dependent Variables**

Health Related Physical Fitness Component ***Muscular Strength*** was selected as Dependent Variable.

- **Procedure of the Study**

The investigator was conducted *Pretest-1* of Upper Body Strength as measured by Arm Curl Test’ and Lower Body Strength as measured by 30-Second Chair Stand Test (Morrow, Allen, Jackson, Disch, & Mood., 2005) to measure and recorded the data of upper and lower body muscular strength of the seniors. After Pretest-1, all selected subjects were *restricted* to participate in any yogic practices for ‘Ten Weeks’ i.e. blank period of the study, after the blank period of ‘Ten Weeks’, *Pretest-2* of the same variables were conducted. After Pretest-2 all selected subjects were exposed to ‘*Yogic Treatment*’ for the period of ‘Ten Weeks’, daily in the morning for 60 minutes, except Sundays. After ‘*Yogic Treatment*’ Posttest of the same variable was conducted and data was recorded for the further investigation.

RESULT

One Way Repeated Measure ANOVA followed by *Least Significant Difference Method (LSD)* was used to analyze the data (Verma, 2013) and the results are presented below.

Table 2 Descriptive Statistics of Lower Body Strength of seniors

	<i>Mean</i>	<i>S D</i>	<i>N</i>
Lower Body Strength Pretest-1	12.60	1.79	30
Lower Body Strength Pretest-2	13.17	1.46	30
Lower Body Strength Posttest	16.53	2.93	30

SD= Standard Deviation

Table 2 shows descriptive statistics of Lower Body Strength of Seniors, mean score of Pretest-1 is 12.60 (SD 1.79), Pretest-2 is 13.17 ((SD 1.46) and mean score of Posttest is 16.53 (SD 2.93).

Table 3 Summary of Repeated Measure ANOVA of Lower Body Strength of Senior

Source of Variance	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Remark</i>
Tests	2	271.27	135.63	51.96	<i>p<0.01</i>
Error	58	151.40	2.61		
Total	60				

From Table 3 it is evident that, *F ratio* for treatment is 51.96 which is significant at 0.01 level with $df = 2/58$, it reflects that the Repeated Measure Mean Scores of Lower Body Strength of Senior Urban Citizen, taken three tests in different time, differs significantly. In order to know which Test of Lower Body Strength mean score is significantly higher than the other tests. The data were further analyzed by using least significant difference method and results are given in Table 4.

Table 4 Multiple Comparisons of Repeatedly Measured Tests of Lower Body Strength

		<i>Mean Difference</i>	<i>Std. Error</i>	<i>Remark</i>
Pretest-1	Pretest-2	0.57	0.24	<i>p>0.05</i>
Pretest-2	Posttest	3.36**	0.49	<i>p<0.01</i>
Pretest-1	Posttest	3.93**	0.47	<i>p<0.01</i>

**** Significant at 0.01 level**

From Table 4. it can be seen that there is significant difference in Lower Body Strength between Pretest-1 and Posttest at 0.01 level. In case of Pretest-2 and Posttest there is significant difference in Lower Body Strength at 0.01 level. Where in case of Pretest-1 and Pretest-2 there is no significant difference at 0.05 level. it may be therefore said that the Post-test found to be significantly high Lower Body Strength as compare to Pretest-1 and Pretest-2.

Table 5 Descriptive Statistics of Upper Body Strength of Seniors

	<i>Mean</i>	<i>S D</i>	<i>N</i>
Upper Body Strength Pretest-1	17.63	4.94	30
Upper Body Strength Pretest-2	18.30	5.09	30
Upper Body Strength Posttest	22.33	4.98	30

Table 5 shows descriptive statistics of Upper Body Strength of Seniors, mean score of Pretest-1 is 17.63 (SD 4.94), Pretest-2 is 18.30 ((SD 5.09) and mean score of Posttest is 22.33 (SD 4.98).

Table 6 Summary of Repeated Measure ANOVA of Upper Body Strength of Urban Senior Citizens

Source of Variance	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Remark</i>
Tests	2	388.02	194.01	34.31	<i>p<0.01</i>
Error	58	327.98	5.65		
Total	60				

From Table 6 is evident that, *F ratio* for treatment is **34.31** which is significant at *0.01* level with *df* = 2/58, it reflects that the Repeated Measure Mean Scores of Upper Body Strength of Senior Urban Citizen, taken three tests in different time, differs significantly. In order to know which Test of Upper Body Strength mean score is significantly higher than the other tests. The data were further analyzed by using Least significant difference method and results are given in Table 7.

Table 7 Multiple Comparisons of Repeatedly Measured Tests of Upper Body Strength

		<i>Mean Difference</i>	<i>Std. Error</i>	<i>Remark</i>
Pretest-1	Pretest-2	0.67	0.41	<i>p>0.05</i>
Pretest-2	Posttest	4.03**	0.74	<i>p<0.01</i>
Pretest-1	Posttest	4.70**	0.64	<i>p<0.01</i>

**** Significant at 0.01 level**

From Table 7. it can be seen that there is significant difference in Lower Body Strength between Pretest-1 and Posttest at *0.01 level*. In case of Pretest-2 and Posttest there is significant difference in Lower Body Strength at *0.01 level*. Where in case of Pretest-1 and Pretest-2 there is no significant difference at *0.05 level*. it may be therefore said that *the Post-test found to be significantly high Upper Body Strength* as compare to Pretest-1 and Pretest-2.

DISCUSSION

Muscular strength is the maximal contraction power of the muscle, in the older age the muscular Strength becomes weak and thereby the elderly people cannot able to perform as powerfully as the younger.

The purpose of the present study was to study the efficacy of Ten Week Yoga Practices for the promotion of Muscular Strength of Lower and Upper Body of Senior Urban Citizens aged 60 to 70 years.

It appears from the results that the posttest performance of Lower Body Strength as measured by 30 sec. *Chair Stand Test* and Upper Body Strength as measured by *Arm Curl Test* of male Senior Citizens aged 60-70 years were significantly increased. It is evident from the result that the reviewed relevant studies conducted by other researchers viz., Raub & James, 2002; Hill et al. 2007; Gharote, 1976; Patel et al. 2012; are supporting, up to some extend, to the above stated result of the present study. It is also pertinent to note that the said relevant studies have been conducted by different researcher with different purpose and under different conditions too. On the other hand, the researcher has not came across any study conducted on 'Role of Yoga in Lower and Upper Body Strength of Senior Urban Citizens'.

The probable reason for the significant improvement in case of Lower and Upper Body Strength of Senior Citizens of Urban area is nothing but the systemeatic intervention of Ten Weeks Yogic Practices. Ten weeks' Yogic practices might have improved the Stregnth of Lower Body and Upper Body of the Senior Citizens. It is evident from the Yoga literature that Yogic practicess are effective in improving Lower and Upper Body strength. Hence, due to the integreted and harmonious approach of the Yoga, the above result is evident in case of Senior Urban citizens. Therefore, systematic yogic practices could be justifiably incorporate in daily routine for Senior Urban Citizens aged 60 to 70 years.

CONCLUSION

Ten weeks selected Yoga training program helps to improve the Stregnth of Lower Body and Upper Body in Senior Urban Citizens.

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