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Effectiveness of Sudarshan Kriya Yoga Therapy for Reduction of Blood Pressure among Hypertensive Clients in Selected Rural Health Center at Selected City

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Abstract: ***The purpose of the present study was to assess the effectiveness of sudarshan kriya yoga therapy for reduction of blood pressure among hypertensive clients in selected rural health center at selected city. True Experimental Pretest-Posttest Control Group Research Design was used. 60 samples (30- control group & 30- experimental group) of Simple Random sampling technique was used. The pretest mean systolic blood pressure score was 161.56 and mean diastolic blood pressure score was 103.45 and The posttest mean systolic blood pressure score was 136.7 and mean diastolic blood pressure score was 86.33 In experimental group. The pretest mean systolic blood pressure score was 166.41 and mean diastolic blood pressure score was 109.22 and The posttest mean systolic blood pressure score was 165.32 and mean diastolic blood pressure score was 108.51 In control group. Pre test mean systolic t test statistics value of the test was 8.945 the p value is 0.001 Pre test mean diastolic t test statistics value of the test was 6.024 the p value is 0.001 shows significant different in the blood pressure score. Post test mean systolic t test statistics value of the test was 30.543 the p value is 0.001 Post test mean diastolic t test statistics value of the test was 30.414 the p value is .0.001 shows significant different in the blood pressure score. The result shows that the sudarshan kriya yoga therapy is effective for reduction of blood pressure among hypertensive client.***

Key words: hypertensive client, blood pressure, sudarshan kriya yoga therapy

1. Introduction

Hypertension is a typical condition in which the long haul power of the blood against your supply route dividers is sufficiently high that it might in the long run reason medical issues, for example, coronary illness. Pulse is resolved both by the measure of blood your heart siphons and the measure of protection from blood stream in your veins. The more blood your heart siphons and the smaller your supply routes, the higher your circulatory strain. You can have (hypertension) for quite a long time with no manifestations. Indeed, even without side effects, harm to veins and your heart proceeds and can be identified. Uncontrolled hypertension expands your danger of genuine medical issues, including heart assault and stroke[1.]

Mumbai, India 25 Nov 2018: One out of five youthful grown-ups in India has hypertension, as per look into exhibited at the 70th Annual Conference of the Cardio logical Society of India (CSI). That likens to around 80 million individuals, which is more than the whole UK populace.CSI 2018 is being held 22 to 25 November in Mumbai. Joint logical sessions were held by the European Society of Cardiology (ESC) and CSI as a major aspect of the ESC Global Activities programme. (Hypertension) is the main worldwide reason for sudden passing. It is a noteworthy hazard factor for heart assault, stroke, heart disappointment, atrial fibrillation, incessant kidney malady, and intellectual decay.[2]

Sudarshan Kriya Yoga

Sudarshan kriya yoga (SKY) is a sort of repeating controlled breathing practice with roots in customary yoga that gives alleviation to misery, and it is educated by the not-for-profit Art of Living Foundation. It has four unmistakable parts.

Point by point depictions of the four fundamental SKY breathing methods are as per the following.

1) Ujjayi or "Triumphant Breath": This includes encountering the cognizant vibe of the breath contacting the throat. This moderate breath system (2– 4 breaths for every moment) expands aviation route opposition amid motivation and termination and controls wind current so each period of the breath cycle can be drawn out to a definite check. The emotional experience is physical and mental smoothness with sharpness.
2) During Bhastrika or "Howls Breath," air is quickly breathed in and compellingly breathed out at a rate of 30 breaths for each moment. It causes excitation pursued by smoothness.
3) "Om" is recited multiple times with delayed lapse.
4) Sudarshan Kriya which is a Sanskrit expression signifying "legitimate vision by refining activity" is a propelled type of cadenced, repetitive breathing with moderate, medium, and quick cycles[3].

So the, researcher thought that it would be very much beneficial to reduce the HTN by sudarshan kriya yoga therapy. Here researcher goes one step ahead and wanted to explore the effect of sudarshan kriya yoga therapy on BP of hypertensive clients.

2. Literature Survey

Doria S. et al.(2015) The study involved a sample of consenting women and men (n = 69) who received SKY therapy for a six-month time period. All the analyses have shown that SKY therapy significantly reduces the scores of Anxiety and Depression. . It was found that SKY effects lead to a significant convergence between the self-assessment (Zung Self-Rating Scale) and hetero-assessment (Hamilton Rating Scale). Participation in SKY adjunct therapy ten days intense workshop and follow-ups, coupled with daily individual and independent practice of a simplified protocol of breathing techniques (30 min), can lead to significant reduction in levels of Anxiety and Depression[4].

Kharya C. et al. (2014) the study was conducted to observe the effect of controlled breathing exercises including Sudarshan Kriya (SK) and Prana-Yoga (PY) on the psycho-physiological status. The study group included 60 healthy volunteers (M:30, F:30) in the age group of 18 to 30 years (21.3 ± 3.2 yrs), randomly divided in to three groups of 20 subjects each--(1) The SK group (2) the PY group and the (3) Control group. The stress management skills have shown significant increase in SK group but not in PY and Control group..In conclusion, Sudarshan Kriya positively modifies stress coping behavior and initiates appropriate balance in cardiac autonomic tone[5].

Pascoe M.C.et.al (2017) A study was conducted on systematic review and meta-analysis of randomized controlled trials published in English compared practices that included yoga asanas, with and without mindfulness-based stress reduction, to an active control, on stress-related physiological measures Investigates the effects of practices that include yoga asanas, with and without mindfulness-based stress reduction, compared to an active control, on physiological markers of stress. The review focused on studies that measured physiological parameters such as blood pressure, heart rate, cortisol and peripheral cytokine expression. A random-effects model was used in all analyses. Forty two studies were included in the meta-analysis. Interventions that included yoga asanas were associated with reduced evening cortisol, waking cortisol, ambulatory systolic blood pressure, resting heart rate, high frequency heart rate variability, fasting blood glucose, cholesterol and low density lipoprotein, compared to active control. Practices that include yoga asanas appear to be associated with improved regulation of the sympathetic nervous system and hypothalamic-pituitary-adrenal system in various populations[6].

Dhungana R.R.et al, (2018) A study was conducted in primary health care facilities in Nepal to assess the effectiveness of a pragmatic yoga intervention to complement standard practice in further reducing blood pressure. This will be multi-centric, two arms, randomized, non blinded, pragmatic trial. It will be conducted in seven District Ayurveda Health Centers (DAHCs) in Nepal between July 2017 and June 2018. This study will establish the extent to which a yoga intervention package can help reduce blood pressure in hypertensive patients[7].

Krishna BH.et.al (2014) A study was conducted to examine the effects of a 12 week yoga therapy on blood pressure, heart rate, heart rate variability, and rate pressure product (RPP). Out of 130 heart failure patients recruited for the study, 65 patients were randomly selected to receive 12 week yoga therapy along with standard medical therapy (yoga group). There was a significant decrease in heart rate, blood pressure and RPP in yoga group compared to control group. Twelve-week yoga therapy significantly improved the parasympathetic activity and decreased the sympathetic activity in heart failure patients (NYHA I&II).[8]

Sengupta P. (2012) Thousands of years ago yoga originated in India, and in present day and age, an alarming awareness was observed in health and natural remedies among people by yoga and pranayama which has been proven an effective method for improving health in addition to prevention and management of diseases. With increasing scientific research in yoga, its therapeutic aspects are also being explored. Yoga is reported to reduce stress and anxiety, improves autonomic functions by triggering neuro-hormonal mechanisms by the suppression of sympathetic activity, and even, now-a-days, several reports suggested yoga is beneficial for physical health of cancer patients. Such global recognition of yoga also testifies to India's growing cultural influence.[9]

3. Problem Definition

An experimental study to assess the effectiveness of sudarshan kriya yoga therapy for reduction of blood pressure among hypertensive clients in selected rural health center at selected city

4. Objectives of the Study

- To assess the Pretest blood pressure score among the hypertensive client in the experimental and control group.
- To evaluate the effectiveness of sudarshan kriya yoga therapy in reduction of blood pressure among the hypertensive client in the experimental group.
- To compare the post-test blood pressure score among the hypertensive client in the experimental and control group.
- To find out association between blood pressure among hypertensive client with their selected demographic variables in the experimental and control group.

5. Method / Approach

In this study True Experimental Pretest-Post test Control Group Research Design was adopted, based on the problem statement and objectives of the study, Quantitative research approach was used. The purpose of quantitative research approach is to assess the effectiveness of sudarshan kriya yoga therapy for reduction of blood pressure among hypertensive clients. Here the investigator identifies and evaluate the effectiveness of sudarshan kriya yoga therapy for reduction of blood pressure among hypertensive clients with the help of standard BP scale related to hypertension . The population and sample were hypertensive client who were fulfilling the inclusion and exclusion criteria & sample consisted of 30 hypertensive client in experimental group &

30 hypertensive client in control group. The probability sampling technique was used. Tools used for data collection include two sections namely demographic variables & standard BP measurement scale for hypertensive client.

6. Result

For the data analysis and interpretation, various methods has been used by researcher that are descriptive and inferential statistics were widely used. In that mean, percentage, and Standard Deviation were calculated, mean systolic and diastolic BP were analyzed based on the mean systolic and diastolic readings of the hypertensive client. A standard BP scale is used for data collection. The analysis was done with the help of descriptive and inferential statistics.

The analysis of data is organized and presented under the following heading

Section I: assessment of mean blood pressure in experimental and control group before and after yoga therapy

Section II: comparison of demographic variables in Experimental group and control group before and after yoga therapy

Table 1

		Experimental Group		Control Group		T Test	P Value
		Pretest	Post Test Mean (S.D.)	Pre Test	Post Test Mean (S.D.)		
	Systolic BP	-	136.79 (4.56)	-	165.32 (2.32)	30.543	0.001*
	Diastolic BP		86.33 (2.03)		108.51 (3.44)	21.388	0.001*
	Systolic BP	161.56 (2.09)	-	166.41(2.11)	-	8.945	0.001*
	Diastolic BP	103.45 (4.18)	-	109.22 (3.17)	-	6.024	0.001*
Systolic BP	Vegetarian	-	(141.33 ±1.21)	-	(152.36±2.19)	11.848	0.001*
	Non-vegetarian	-	(133.32±4.56)	-	(163.12±1.99)	10.823	0.001*
	Mixed	-	(139.21±1.39)	-	(158.31±3.21)	32.49	0.001*
Diastolic BP	Vegetarian	-	(84.32±1.11)	-	(107.64±4.11)	16.871	0.001*
	Non-vegetarian	-	(86.12±1.65)	-	(107.65±2.39)	16.344	0.001*
	Mixed	-	(87.16±2.46)	-	(108.64±2.64)	22.914	0.001*
Systolic BP	30-40	-	(133.26±2.11)	-	(161.23±3.11)	22.802	0.001*
	41-50	-	(141.19±1.99)	-	(160.39±2.91)	17.882	0.001*
	51-60	-	(140.12±2.33)	-	(166.71±1.01)	20.45	0.001*
	Above 60	-	(143.22±4.33)	-	(166.35±0.96)	6.995	0.001*
Diastolic BP	30-40	-	(86.66±3.11)	-	(106.19±2.19)	11.451	0.001*
	41-50	-	(87.31±4.31)	-	(107.46±1.46)	11.532	0.001*
	51-60	-	(86.34±3.21)	-	(109.64±2.13)	14.594	0.001*
	Above 60	-	(85.36±2.16)	-	(111.12±1.15)	15.601	0.001*
Systolic BP	Nuclear	-	(135.21±2.66)	-	(164.31±1.63)	19.533	0.001*
	Joint	-	(137.23±3.19)	-	(168.25±1.46)	28.62	0.001*
Diastolic BP	Nuclear	-	(85.45±2.31)	-	(106.54±2.64)	13.181	0.001*
	Joint	-	(87.46±2.16)	-	(109.21±2.11)	27.374	0.001*
Systolic BP	Underweight	-	(131.26±2.01)	-	(156.16±3.11)	20.548	0.001*
	Normal	-	(136.11±2.19)	-	(159.36±2.39)	16.52	0.001*
	Overweight	-	(145.23±3.11)	-	(169.33±3.63)	23.338	0.001*
	Obese	-	(154.10±2.13)	-	(175.66±2.36)	8.056	0.001*
Diastolic BP	Underweight	-	(81.32±2.13)	-	(102.31±1.94)	11.113	0.001*
	Normal	-	(82.34±2.16)	-	(103.31±1.64)	16.143	0.001*
	Overweight	-	(86.32±0.49)	-	(108.54±2.13)	21.604	0.001*
	Obese	-	(89.56±2.19)	-	(110.64±2.16)	11.803	0.001*

Table 2

	Items	Experimental (%)	Control (%)
Age	30-40	6(20.00%)	4(13.33%)
	41-50	8(26.67%)	9(30.00%)
	51-60	11(36.67%)	13(43.33%)
	Above 60	5(16.67%)	4(13.33%)
Diet	Veg	7(23.33%)	5(16.67%)
	Non Veg	6(20.00%)	10(33.33%)
	Mixed	17(56.67%)	15(50.00%)
Type of family	Nuclear	9(30.00%)	7(23.33%)
	Joint	21(70.00%)	23(76.675)
Educational status	Illiterate	8(26.67%)	7(23.33%)
	Primary	12(40.00%)	15(50.00%)
	Secondary	5(16.67%)	6(20.00%)
	Higher secondary	4(13.33%)	2(6.67%)
	Graduate/post graduate	1(3.33%)	0(0.0%)
Occupation	Farmer	17(56.67%)	19(63.33%)
	Labor	11(36.67%)	10(33.33%)
	service	2(6.67%)	1(3.33%)
BMI	Underweight	4(13.33%)	3(10.00%)
	Normal	7(23.33%)	4(13.33%)
	Overweight	15(50.00%)	17(56.67%)
	Obese	4(13.33%)	6(20.00%)

7. Discussion

Findings of the study were based on objective of the study.

Findings regard to the post test mean systolic BP (136.79) was less than the pretest mean systolic BP (161.56) t value is (27.145) p value is 0.001* (significant) hence H1 was accepted. The findings suggest that there was significant reduction in BP after giving yoga therapy.

Findings regard to the post test mean diastolic BP (86.33) was less than the pretest mean diastolic BP (103.45) t value is (20.197) p value is 0.001* (significant) hence H1 was accepted. The findings suggest that there was significant reduction in BP after giving yoga therapy.

Findings regard to the post test mean systolic BP (165.32) was less than the pretest mean systolic BP (165.41) t value is (1.904) p value is 0.062# (no significant) hence H1 was rejected. The findings suggest that there was no significant reduction in BP after giving yoga therapy.

Findings regard to the post test mean diastolic BP (108.51) was less than the pretest mean diastolic BP (109.22) t value is (1.191) p value is 0.239# (no significant) hence H1 was rejected. The findings suggest that there was no significant reduction in BP after giving yoga therapy.

Findings regard to the pre test mean systolic BP (136.79) in experimental group and pre test mean systolic BP (165.32) pre test mean diastolic BP (86.33) in experimental group and pre test mean diastolic BP (108.51) hence t value is (30.543) pre test mean systolic BP t value is (30.414) pre test mean diastolic BP p value is 0.001* (significant) hence H2 was accepted. The findings suggest that there was significant reduction in BP after giving yoga therapy in experimental group

8. Conclusion

The findings of present study shows that the comparison of pre-test and post- test mean blood pressure reading in experimental and control group result shows that there was a significant reduction in blood pressure reading after giving sudarshan kriya yoga therapy at p value is 0.001* level of (significant) in experimental group. This result shows that the sudarshan kriya yoga therapy. The study findings concluded that the hypertension client were had high BP the sudarshan kriya yoga therapy had great potential impact for reduction of BP among hypertension client.

9. Future Scope

Nursing Practice

One of the alternative therapies is Yoga Therapy which is gaining popularity and is finding more substantial place in health care. Holistic nursing regards and treats the mind, body and spirit of the client. Nurses use holistic nursing interventions such as Yoga Therapy and interventions affect the whole person and are cost effective, economical, non invasive non pharmacological compliments to medical care. Yoga Therapy is one of the sources can be adopted in patient care, which through this study has been proved to reduce the BP among Hypertensive client. There by increasing evidence based practice and this practice enhance the autonomous role of nursing intervention.

Nursing Education

Several implications can be drawn from the present study for nursing education. Nursing education should prepare the nurses with the potential for imparting health information effectively to the hypertensive client and help them out in choosing suitable methods for reducing BP. A curriculum should be updated in relation to the changing society since it will help out the nursing students to upgrade their knowledge and skill according to that. Nursing curriculum should incorporate alternative complementary therapies for BP. So that students render and apply in the field of nursing service and will be able to take care of the patients. The nurse educators have the additional responsibility to update themselves with the changing trends.

Nursing Administration

Nurse administrators should initiate or develop framework to improve reproductive health and set standards for care. Nurse administrators should be able to make judgments as to which intervention helps in reducing BP. Nurse administrator should conduct in-service education programme on yoga therapy to improve the knowledge and skills of the nurses thus to provide holistic care. Pharmacologic measures for BP generally have been found to be more effective than non-pharmacologic measures in lowering intensity levels; lifelong. Hence Yoga Therapy for BP is more beneficial. Henceforth small studies can be conducted periodically to evaluate the effectiveness of the intervention.

Nursing Research

The emphasis on research is to improve the quality of nursing care. Nursing research represents a critically important tool for the nursing profession to acquire knowledge. The study emphasizes to identify the problem and adopt Yoga Therapy for BP. The nurse researcher should be aware about the existing health care system and the status of nursing profession. Thus it helps to improve their clinical knowledge, skill and attitude of the nurse. In this study, BP is highlighted by the use of Sudarshan Kriya Yoga Therapy, thus it makes a pleasant as well as effective, non-pharmacological and cost effective intervention of BP.

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