



A DESCRIPTIVE STUDY OF STANDING AND SITTING CROSSED LEG POSITION ON BLOOD PRESSURE READING AMONG HYPERTENSIVE PATIENTS OF TERTIARY CARE HOSPITAL AT KARAD.

Nursing

Miss. Priyanka Ashok Mohite

B.BSc. Nursing, KINS, Karad

Mrs. Nitanjali Patil*

Assistant Professor, KINS, Karad *Corresponding Author

DR. Prof. MRS. Vaishali R. Mohite

Dean/Principal KINS, Karad.

Mr. Ajit Anandrao Pawar

Clinical Instructor, KINS, Karad

ABSTRACT

Objective: 1. To assess the effect of standing position on blood pressure reading among hypertensive patient. 2. To assess the effect of sitting cross leg position on blood pressure reading among hypertensive patient. 3. To compare effect of standing and sitting crossed leg position on blood pressure reading among hypertensive patient. 4. To find out the association between standing and sitting crossed leg position among the demographic variables.

Materials and Methods: Descriptive research design was used to conduct the study among hypertensive patients and totally 130 patients was selected by purposive sampling technique. The study was conducted at Krishna hospital, Karad. The data were collected by structured Questionnaire. Level of blood pressure was measured by the mercury-filled column Sphygmomanometer. The collected data were studied and analyzed in terms of objectives of the study using descriptive and inferential statistics.

Results: 1. Mean of standing systolic BP was 136.31 and mean of sitting crossed leg position was 147.54 so unpaired 't' applied p value was <0.0001 which very significant.

2. Mean of standing diastolic BP was 89.92 and mean of sitting crossed leg position was 99.08 so unpaired 't' applied p value was <0.0001 which very significant.

3. There is significant association between sitting crossed leg and socio-demographic data.

Conclusion: The result of the present study show the hypertensive patients in that Systolic and diastolic BP significantly increased approximately 10 and 8 mmHg respectively with the crossed leg position.

KEYWORDS

INTRODUCTION:

Blood pressure is the lateral pressure exerted on the wall of the vessels by the column of blood present in it. The maximum pressure, which occurs during systole, is called systolic pressure and the minimal pressure produced during diastole is called diastolic pressure.¹ The concept of stages of hypertension has been applied to define levels of blood pressure. Many clinicians have continued to use more descriptive terms such as mild, moderate, or severe hypertension. Therefore, to avoid confusion between physicians and patients regarding the risk associated with hypertension.² Hypertension is the most common disease specific reason for which Americans visit a physician. It is currently among the leading causes of morbidity and mortality in the world and is expected to have an even greater impact on the health of the public as more of the world becomes developed.³

Blood pressure monitoring is one of the most commonly used technique in the diagnosis and treatment of various health care problems. Blood pressure measurement is a crucial tool in determining the existence of hypertension. Consequently, all efforts should be made to eliminate errors in measuring blood pressure.⁴ Numerous factors influence an individual's blood pressure measurement including medications, arm and body position, noise, extreme temperature, constrictive clothing, faulty equipment white-coat effect, attitude of the person taking the measurement, anxiety, improper cuff length or width, talking, mental and physical activity and diurnal variability. It is critical that nurses provide accurate and precise health screening to the patient.⁵

MATERIALS AND METHODS:

Descriptive research design was used to conduct the study among hypertensive patients and totally 130 patients was selected by purposive sampling technique. The samples included in this study were who fulfilled the inclusion criteria with available at the time of data collection and who were willing to participate. Ethical permission was obtained before the data collection. After obtaining permission

from the setting, the patients were asked their willingness to participate in the study and informed consent was obtained. After collecting the demographic data, level of blood pressure was measured using by the mercury-filled column Sphygmomanometer. The collected data were studied and analyzed in terms of objectives of the study using descriptive and inferential statistics.

Description of the tools:

The structured questionnaire comprised two sections covering the following areas

Section A: socio demographic data: It consists of age, gender, religion, occupation, education, marital status, type of family, type of diet, monthly income, addiction of hypertensive patients.

Section B: Using by the mercury-filled column Sphygmomanometer to assess the level of blood pressure among hypertensive patients.

Statistical analysis:

The data were analyzed using descriptive statistics and Chi square test used to find out association between level of blood pressure and socio-demographic variables.

RESULTS:

Table.1: Frequency and percentage distribution of socio-demographic Variables of subjects

Sr. No.	Socio-Demographic Variables	Frequency	Percentage	
1.	Age	20-40	32	24.62
		40-60	61	46.92
		60&Above	37	28.46
2.	Gender	Male	80	61.54
		Female	50	38.46
3.	Religion	Hindu	113	86.92

		Christian	0	
		Muslim	6	4.62
		Other	11	8.46
4.	Occupation	Farmer	49	37.69
		House-Wife	39	30
		Business	24	18.46
		Job	1	0.77
		None	17	13.08
		5.	Education	Educated
	Non-Educated	114		87.69
6.	Marital Status	Married	125	96.15
		Unmarried	3	2.31
		Divorced	2	1.54
7.	Type of Family	Joint	65	50
		Nuclear	55	42.31
		Extended	10	7.69
8.	Type of Diet	Vegetarian	25	19.23
		Non-Vegetarian	0	0
		Mixed	105	80.77
9.	Monthly Income	<10,000	21	16.15
		10,001-20,000	21	16.15
		20,001-30,000	49	37.69
		30,001-40,000	31	23.85
		40,000<	8	6.15
10.	Addiction	Tobacco Chewing	46	35.38
		Smoking	5	3.85
		Alcohol	8	2.31
		Mishari	25	19.23
		Any Other	0	
		None	46	35.38

Description of sample characteristics:

The data presented in table no.1 reveals that among all samples majority of (46.92%) were from 40-60. As regards to gender majority of (61.54%) were male. As regards to Religion majority (86.92%) were Hindu. The data concerning the Occupation, majority (37.69%) were Farmer. As regards to education (87.69%) were Non-educated. (96.15%) were married. (50%) from Joint Family. (80.77%) consumes mixed Diet. Majority 37.69% samples were having income of Rs. 20,001-30,000. Majority (35.38%) were having addiction of Tobacco and not having any kind of addiction.

Table.2: To assess the effect of standing and sitting crossed leg position on blood pressure reading.

Grades of Blood Pressure	Standing Position				Sitting Crossed Leg Position			
	SBP		DBP		SBP		DBP	
	N	%	N	%	N	%	N	%
Grade-1	125	96.15	98	75.38	105	80.769	40	30.769
Grade-2	4	3.076	28	21.538	21	16.15	57	43.846
Grade-3	1	0.769	4	3.076	4	3.076	33	25.38

- 96.15% patients belongs to grade-1 of SBP with hypertension in standing position and 0.769% patients belongs to grade-3 of SBP with hypertension in standing position.
- 75.38% patients belongs to grade-1 of DBP with hypertension in standing position and 3.076% patients belongs to grade-3 of DBP with hypertension in standing position.
- 80.769 % patients belongs to grade-1 of SBP with hypertension in sitting crossed leg position and 3.076% patients belongs to grade-3 of SBP with hypertension in sitting crossed leg position.
- 43.846 patients belongs to grade-2 of DBP with hypertension in sitting crossed leg position and 25.38% patients belongs to grade-3 of DBP with hypertension in sitting crossed leg position.

Table.3: To compare effect of standing and sitting crossed leg position on blood pressure reading

Sr. no		STANDING		SITTING		MEAN DIFFERENCE	UNPAIRED T -TEST
		MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION		
1.	SYSTOLIC	136.31	11.42	147.54	11.68	-11.23	T=7.837 <0.0001 Very Significant
2.	DIASTOLIC	89.92	8.85	99.08	8.30	-9.14	T=8.603 <0.0001 Very Significant
3.	MEAN DIFFERENCE	46.38		48.46			
4.	PAIRED T – TEST	T=60.065		T=61.267			
	P value	<0.0001 Very Significant		<0.0001 Very Significant			

Mean of standing systolic BP was 136.31 and mean of sitting crossed leg position was 147.54 so unpaired 't' applied p value was <0.0001 which very significant. Mean of standing diastolic BP was 89.92 and mean of sitting crossed leg position was 99.08 so unpaired 't' applied p value was <0.0001 which very significant.

Table.4: association between standing position and demographic variables.

Sr. No.	Variables	Standing (SBP)			Chi-Square Test	P-Value	Standing (DBP)			Chi-Square Test	P-Value	
		G1	G2	G3			G1	G2	G3			
1.	Age	20-40	32	0	0	4.253	0.3729	26	6	0	6.569	0.1605
		40-60	58	3	0			41	18	2		
		60&Above	35	1	1			31	4	2		
2.	Gender	Male	76	4	0	4.129	0.1269	62	16	2	0.3338	0.8463
		Female	49	0	1			37	11	2		
3.	Religion	Hindu	108	4	1	0.7823	0.9408	84	26	3	3.725	0.4445
		Christian	0	0	0			0	0	0		
		Muslim	6	0	0			6	0	0		
		Other	11	0	0			7	3	1		
4.	Occupation	Farmer	46	3	0	6.293	0.6144	35	13	1	6.947	0.5423
		House-Wife	38	0	1			30	8	1		
		Business	24	0	0			19	5	0		
		Job	16	1	0			13	2	2		
		None	1	0	0			1	0	0		
5.	Education	Educated	16	0	0	0.7298	0.6943	13	3	0	0.7105	0.7010
		Non-Educated	109	4	1			85	25	4		
6.	Marital Status	Married	120	4	1	0.2080	0.9950	94	28	4	1.944	0.7460
		Unmarried	3	0	0			3	0	0		
		Divorced	2	0	0			1	1	0		
7.	Type of Family	Joint	63	1	1	2.852	0.5828	54	11	1	4.682	0.3216
		Nuclear	52	3	0			36	17	1		
		Extended	10	0	0			8	2	0		

8.	Type of Diet	Vegetarian	25	0	0	0.9826	0.3216	20	4	1	0.6140	0.7357
		Non-Vegetarian	0	0	0			0	0	0		
		Mixed	101	4	0			78	24	3		
9.	Monthly Income	<10,000	21	0	0	8.695	0.3687	13	8	0	14.179	0.0772
		10,001-20,000	19	1	1			17	2	2		
		20,001-30,000	48	1	0			39	10	0		
		30,001-40,000	30	1	0			23	7	1		
		40,000<	7	1	0			7	0	1		
10.	Addiction	Tobacco Chewing	45	1	0	10.395	0.2384	35	10	1	5.846	0.6645
		Smoking	4	1	0			3	1	1		
		Alcohol	8	0	0			6	2	0		
		Mishari	24	0	1			19	4	1		
		Any Other	0	0	0			0	0	0		
		None	44	2	0			34	11	1		

Table.5: Association between sittings crossed leg position and demographic variables.

Sr. No.	Variables		Standing (SBP)			Chi-Square Test	P-Value	Standing (DBP)			Chi-Square Test	P-Value
			G1	G2	G3			G1	G2	G3		
1.	Age	20-40	31	1	0	7.640	0.1057	6	18	8	4.004	0.4055
		40-60	45	13	3			21	23	17		
		60&Above	29	7	1			13	16	8		
2.	Gender	Male	62	15	3	2.254	0.3241	25	43	18	1.764	0.4140
		Female	44	5	1			15	20	15		
3.	Religion	Hindu	94	15	4	9.588	0.0480	34	52	27	2.782	0.5950
		Christian	0	0	0			0	0	0		
		Muslim	6	0	0			2	3	1		
		Other	6	5	0			2	4	5		
4.	Occupation	Farmer	36	10	3	6.357	0.6073	14	2	12	15.418	0.0515
		House-Wife	35	3	1			14	14	11		
		Business	20	4	0			7	12	5		
		Job	1	0	0			0	1	0		
		None	15	2	0			4	8	5		
5.	Education	Educated	11	5	0	3.913	0.1414	5	9	2	0.6741	0.7139
		Non-Educated	95	15	4			38	66	28		
6.	Marital Status	Married	103	18	4	2.684	0.6121	41	54	30	2.661	0.6161
		Unmarried	3	0	0			0	2	1		
		Divorced	1	1	0			0	1	1		
7.	Type of Family	Joint	52	11	2	0.7845	0.9405	24	28	13	6.200	0.1847
		Nuclear	45	8	2			15	22	18		
		Extended	9	1	0			1	7	2		
8.	Type of Diet	Vegetarian	18	6	1	2.350	0.3088	7	13	5	0.9000	0.6376
		Non-Vegetarian	0	0	0			0	0	0		
		Mixed	89	13	3			33	44	28		
9.	Monthly Income	<10,000	5	0	16	5.688	0.6821	7	7	7	4.600	0.7994
		10,001-20,000	3	1	17			7	8	6		
		20,001-30,000	7	2	40			13	27	9		
		30,001-40,000	4	0	27			10	12	9		
		40,000<	1	1	6			3	3	2		
10.	Addiction	Tobacco Chewing	35	10	1	8.288	0.4059	16	18	12	11.277	0.1865
		Smoking	4	1	0			0	2	3		
		Alcohol	5	3	0			0	7	1		
		Mishari	23	1	1			9	10	6		
		Any Other	0	0	0			0	0	0		
		None	39	5	2			15	20	11		

Table.4 reveals that age, gender, religion, occupation, education, marital status, type of family, type of diet, income of the family per month, addiction of hypertensive patient were not significantly associated with level of blood pressure

Table number 5 the religion of patient in sitting crossed leg position was found significantly associated with level of blood pressure among hypertensive patients.

DISCUSSION:

The findings of the similar study also reported that patient undergoing hypertensive was having high level of blood pressure. A study conducted by at Chicago with the title of "To determine the effects of crossed leg on blood pressure measurement" The study was conducted on 100 hypertensive male subjects ages 31-81 years in 1999. Level of blood pressure was measured by the Sphygmomanometer. The results indicated that both diastolic and systolic blood pressure increased significantly (p<.0001) with the crossed leg position.. A study conducted by Pinar, Rukiye et al with the title of "The effect of crossing legs on blood pressure in hypertensive patients" Study was conducted on 283

unmedicated or medicated patients. in 2010. . Level of blood pressure was measured by the mercury-filled column Sphygmomanometer and The results indicated that Systolic and diastolic BP significantly increased approximately 10 and 8 mmHg respectively with the crossed leg position.

CONCLUSION:

The result of the present study show that hypertensive patients complained of high level of blood pressure. Assessment and management of blood pressure level should be an important component of care giving to these patients. The high level of blood pressure in hypertensive patients has an effect on the deterioration of their quality of life. Therefore, education, training and counselling should be developed to improve the patients' level of blood pressure among hypertensive patients.

REFERENCES:

1. Text book of physiology by r.chandramouli.
2. Critical pathways in cardiology, by Christopher p. cannon, petrick t. o'gara.chap 21- hypertension

3. Murray CJ, Lope AD. Evidence-based health policy—lessons from the Global Burden of Disease Study. *Science* 1996; 274(5288):740–743.
4. Mr. Nickson Das; International Conference on “EXCELLENCE IN PEDIATRIC NURSING” DPCON-2018; 2018 Jan 12th; DINSHA PATEL COLLEGE OF NURSING managed by MAHAGUJRAT MEDICAL SOCIETY; [cited 2018 January 10]; Available from: www.dpcn.org.in.
5. [DOC]rajiv gandhi university of health sciences, karnataka, bangalore - rguhs; 2008 June 30 [cited 2018 March 10]. Available from: www.rguhs.ac.in/cdc/onlinecdc/uploads/05_N013_6927.doc
6. Lucille Foster-fitzpatrick, Anna Ortiz, Helena Sibilano, Richard Marcantonio, Lynne T. Braun. The effects of crossed leg on blood pressure measurement. *Nursing research*, 1999; 48(2): 105-107; [cited 2018 March 14]
7. Pinar R, Ataalkin S, Watson R. The effect of crossing legs on blood pressure in hypertensive patients. *Journal of clinical nursing*. 2010 May; 19(9-10):1284-8