

A cross-sectional study to assess effect of different body positions on levels of blood pressure among hypertensive patients of selected hospital at Sirsa district of Haryana

¹Dr.Linil M, ²Dr.Gaurav Aggarwal

Shah Satnam Ji Speciality Hospitals Sirsa

Abstract-

Background: The adult hypertension prevalence has shown a drastic increase in the past three decades in urban as well as rural areas. Accurate blood pressure measurements, including differences when lying down versus standing up and sitting can be very helpful when healthcare providers are trying to monitor the condition. **Objectives:** To assess effect of different body positions on level of blood pressure among hypertensive patients **Methods:** Total 250 hypertensive patients were selected by convenient sampling method. Researcher's convenience and familiarity with settings were added reason. A questionnaire to collect the socio-demographic data and a structure tool was used for data collection. **Results:** Mean systolic blood pressure in supine position 135.6 and standard deviation was 7.86. In supine cross leg position mean of systolic blood pressure was 136.7 and standard deviation was 8.4 and mean of systolic blood pressure in fowler's position was 140 and standard deviation was 9.1. Mean arterial pressure in supine position was 52 and standard deviation was 7.4. In supine with cross leg position mean of arterial pressure was 54 and standard deviation was 9.9 and mean of arterial pressure in fowlers position was 56.1 and standard deviation was 11.2. Mean diastolic blood pressure in supine position was 83.2 and standard deviation was 6.1. In supine with cross leg position mean of diastolic blood pressure was 84 and standard deviation was 10.3 and mean of diastolic blood pressure in fowlers position was 88 and standard deviation is 11.7. **Conclusion:** There was marked difference in blood pressure level according to the body positions.

Keywords: Hypertension, body positions, level of blood pressure.

INTRODUCTION

According to recent estimates, about one in three U.S. adults has high blood pressure, but because there are no symptoms, nearly one-third of these people don't know they have it. In fact, many people have high blood pressure for years without knowing it. Uncontrolled high blood pressure can lead to stroke, heart attack, heart failure or kidney failure. This is why high blood pressure is often called the "silent killer." Epidemiological and clinical research represents high priorities in hypertension research in developing countries, and international cooperation is essential to improve the understanding of hypertension. According to WHO, there are 600 million people are affected by hypertension worldwide, among which more than 15 million cases are undiagnosed. The prevalence pattern of hypertension in developing countries like India is different from that in developed countries. Information on the prevalence of hypertension and its associated factors is to be considered vital to focus and improve prevention and control of cardiovascular and other diseases. Blood pressure monitoring is one of the most commonly used techniques in the diagnosis and treatment of various health care problems. Blood pressure measurement is a crucial tool in determining the existence of hypertension. Many studies have analysed, particularly the correlation between body position and blood pressure and the correlation between arm position and blood pressure. Therefore, it is crucial to eliminate all possible sources of error when taking a blood pressure reading. In addition, it is important to understand the impact that each position has on blood pressure levels of hypertensive patients. Inconsistency in blood pressure technique by health care providers can affect the validity and reliability of blood pressure measurement.

OBJECTIVE OF THE STUDY

To assess effect of different body positions on level of blood pressure among hypertensive patients

METHODOLOGY

A cross-sectional research design was used to **assess** effect of different body positions on levels of blood pressure among hypertensive patients. The study was conducted in the medical outpatient department at Shah Satnam Ji Speciality Hospitals Sirsa. After a pilot study was done on 25 patients, 250 patients were monitored using convenience sampling technique.

Tools for data collection

The tool had two parts;

Part I: It included the questionnaires to assess the socio-demographic variables like Age, Gender, Education, Occupation, Specific habits, duration of hypertension, Type of exercise, Present medication.

Part II: It included the structured tool for assessment of blood pressure.

METHOD OF DATA COLLECTION

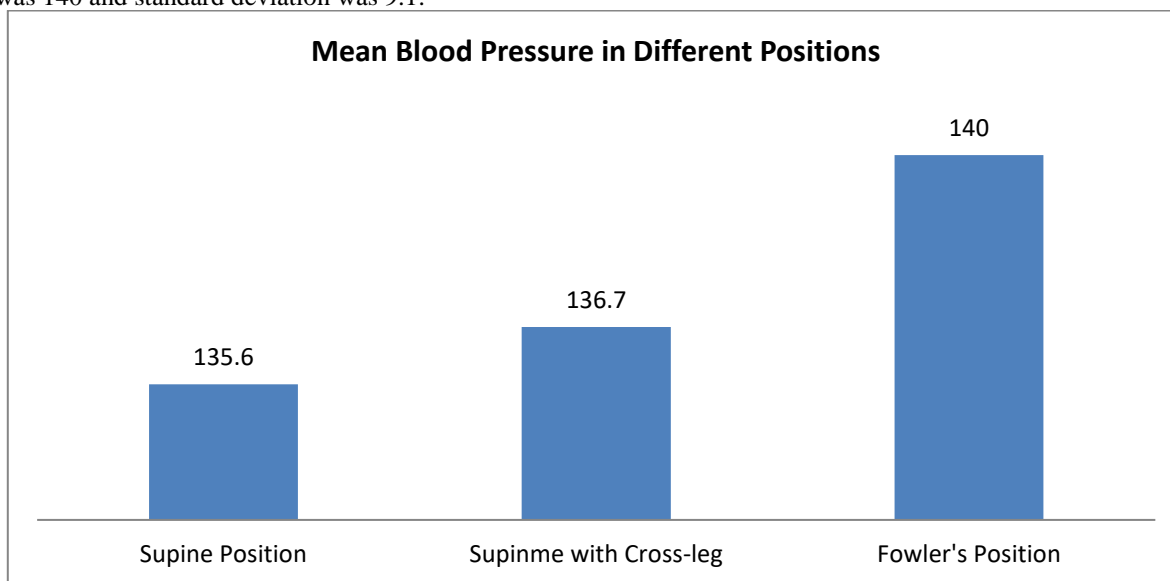
The data gathering process began from 15th March 2022 to 14th April 2022. A formal permission was obtained from concerned authority of hospital. Subjects were taken using non-probability convenient sampling technique. The investigator introduced himself and informed the samples about the nature of study as to ensure better cooperation during data collection. Objectives of study were discussed and confidentiality of data were assured. Participants were assessed for prepared tool containing section I (socio-demographic questionnaires) and section II (structured tool for blood pressure monitoring).

DATA ANALYSIS & INTERPRETATION

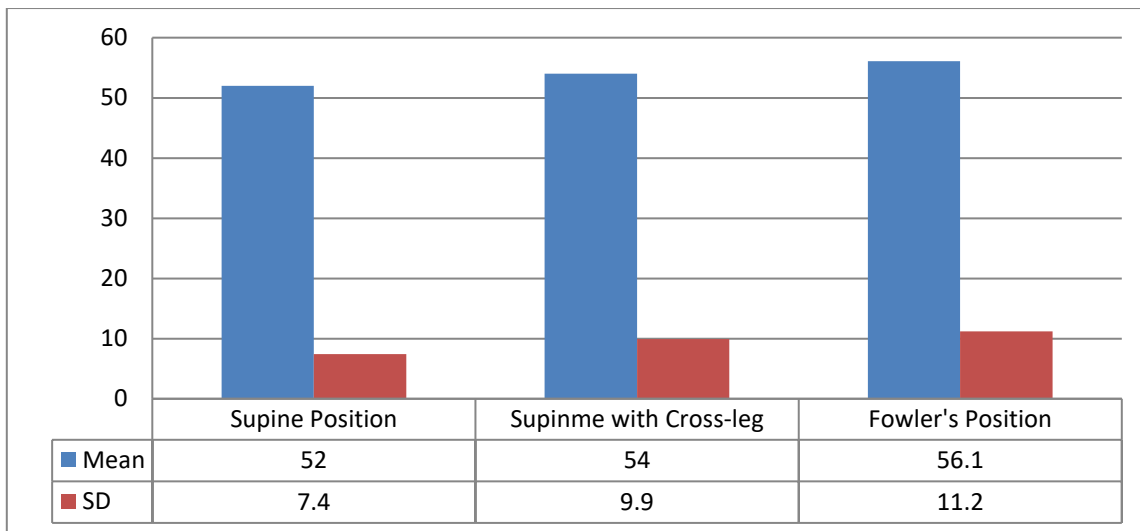
Section – I: Description of Socio-demographic Data:

The data indicates that majority of 110 (44%) of the sample were from age group 51 – 60 years, 80 (32%) of the sample were from age group 41-50 years, 40 (16%) of them were in age group of 31-40 years and 20 (8%) were in age group of 61-70 years. The data indicates that 170 (68%) of them were Male, 80 (32%) of them were Females. 15 (6%) of them were illiterate, 45 (18%) of them had primary education, 70 (28%) of them had secondary education, 60 (24%) of them had higher secondary and 60 (24%) of them had graduation and above. 20 (8%) of them were unemployed, 95 (38%) of them had business, 14 (5.6%) of them were government employees, 60 (24%) of them were private employee and 61 (24.4%) of them had other occupation. 80 (32%) of them had habit of smoking, 70 (28%) of them had habits of tobacco chewing, 65 (26%) of them had habits of alcohol consumption and 35 (14%) did not have any other specify habits. 48 (19.2%) of them perform yoga exercise, 32 (12.8%) of them perform meditation, 85 (34%) of them perform Walking, 20 (8%) of them perform aerobic exercise and 65 (26%) of them perform any other exercise like gym, running. The data indicates that 208 (83.2%) of them taking medication for hypertension and 42 (16.8%) of them were not taking any treatment. 75 (30%) of them had hypertension since 1 to 2 years, 130 (52%) of them had hypertension since 3 to 5 years, 40 (16%) of them had hypertension since 6 to 10 years and 5 (2%) of them had hypertension from 10 years and above.

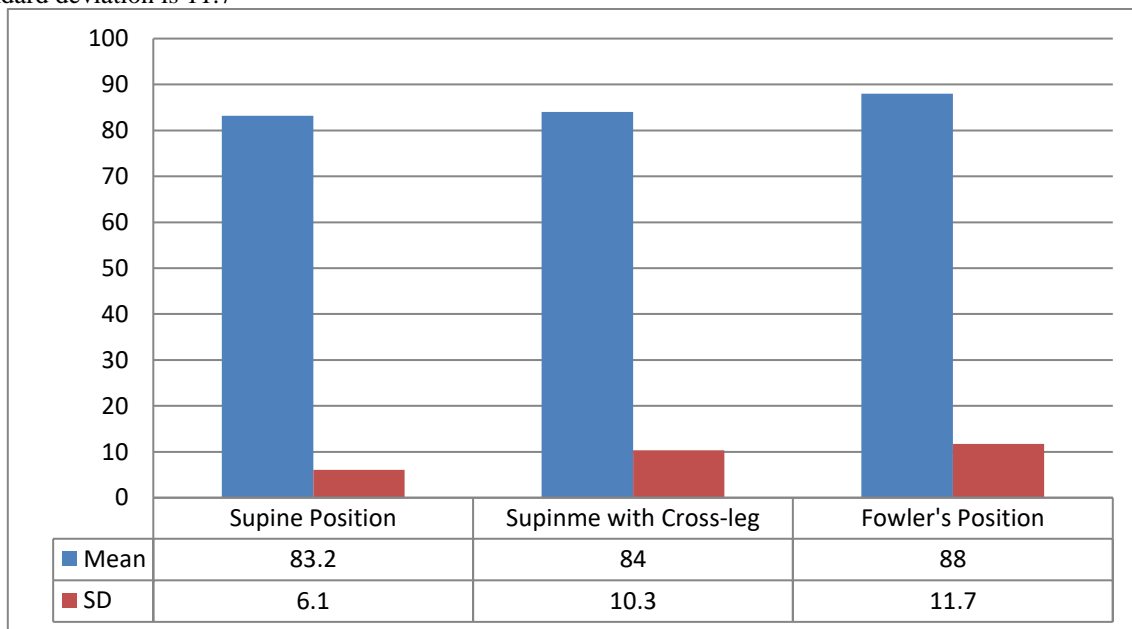
Section II: Mean systolic blood pressure in supine position 135.6 and standard deviation was 7.86. In supine cross leg position mean of systolic blood pressure was 136.7 and standard deviation was 8.4 and mean of systolic blood pressure in fowler's position was 140 and standard deviation was 9.1.



Mean arterial pressure in supine position was 52 and standard deviation was 7.4. In supine with cross leg position mean of arterial pressure was 54 and standard deviation was 9.9 and mean of arterial pressure in fowler's position was 56.1 and standard deviation was 11.2.



Mean diastolic blood pressure in supine position was 83.2 and standard deviation was 6.1. In supine with cross leg position mean of diastolic blood pressure was 84 and standard deviation was 10.3 and mean of diastolic blood pressure in fowlers position was 88 and standard deviation is 11.7



DISCUSSION

The research findings revealed that there was a marked difference in blood pressure level according to the body positions. Inadequate awareness in these areas could potentially lead to the wrong result. It is crucial to eliminate all possible sources of error when taking a blood pressure reading. Apart from that it is important to understand the impact that each position has on blood pressure levels of hypertensive patients. Inconsistency in blood pressure technique by health care providers can affect the validity and reliability of blood pressure measurement.

The result shows that mean systolic blood pressure in supine position 135.6 and standard deviation was 7.86. In supine cross leg position mean of systolic blood pressure was 136.7 and standard deviation was 8.4 and mean of systolic blood pressure in fowler's position was 140 and standard deviation was 9.1. Mean arterial pressure in supine position was 52 and standard deviation was 7.4. In supine with cross leg position mean of arterial pressure was 54 and standard deviation was 9.9 and mean of arterial pressure in fowlers position was 56.1 and standard deviation was 11.2. Mean diastolic blood pressure in supine position was 83.2 and standard deviation was 6.1. In supine with cross leg position mean of diastolic blood pressure was 84 and standard deviation was 10.3 and mean of diastolic blood pressure in fowlers position was 88 and standard deviation is 11.7

CONCLUSION

Numerous studies have clearly shown that there is a significant prevalence of hypertension in the Indian population, particularly in those who lead sedentary lives. A prior study has demonstrated that there is a significant variation in blood pressure levels based on body posture. Therefore, it is essential to educate and raise awareness among healthcare professionals on proper blood pressure monitoring. It will support accurate diagnosis and identification. According to this study, blood pressure levels varied significantly depending on one's body position.

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Nil.

CONFLICTS OF INTEREST

There are no conflicts of interest.

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