



Familiarity and Risk Factors Associated with Life Style Modification along with Low Blood Pressure— A Study of Medical University Larkana

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Authors' contributions

This work was carried out in collaboration among all authors. Author MQ conceived idea, designed research methodology, data analysis and manuscript writing. Author BS data interpretation and statistical analysis and manuscript final reading and approval. Author AAS manuscript final reading and approval. Author TA literature review and data collection. Author AA literature search, data collection and english grammatical setting. Author FJS data collection and statistical analysis. Author MUF literature review and data collection. Author RAA data collection. Author SAL literature review and data collection. All authors read and approved the final manuscript.

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ABSTRACT

The blood pressure is the driven force by which blood moves in a direction against the walls of arteries as it derived by the heart. Normal blood pressure has specific range while an individual with blood pressure towards lower range is very common ailment that is called in medical science as hypotension. In association with these majorities of the people including health science students consider hypotension as an illness which once diagnosed needs to be managed. The objective of this research study is an analysis on the familiarity of the risk factors and life style changes associated with low blood pressure among the health science students of Shaheed Mohtarma Benazir Bhutto Medical University (S.M.B.B.M.U), Larkana, Sindh, Pakistan. This descriptive cross-sectional study was proceed by enlisting health science students Bachelor of Medicine, Bachelor of Surgery (M.B.B.S) and Bachelor of Dental Surgery (B.D.S) of S.M.B.B.M.U Larkana, Sindh, Pakistan during September 2019 to February 2020. A total of 412 students belongs to the first Prof. to last Prof. M.B.B.S & B.D.S were categorized after the revealed of the superior command and distinctive interrogator for the complications of low blood pressure were noted. The data was analyzed on SPSS Version 24.00 statistical software after defining information in the software. 227/412 (95 M.B.B.S and 132 B.D.S students) considered low blood pressure as a sickness. The students of this institute also agreed that low blood pressure with healthy human's presents with many complications that required proper management. The data reveals from this research study that majority of the health science students ruminated the low blood pressure as unusual physiological response of the body hence it required serious attention.

Keywords: Blood pressure; hypotension; sickness; management.

1. INTRODUCTION

In medical science the blood pressure can be described as the pressure that forces the blood to drive around the circulatory system by which the blood to be transported forward from the sides of the arteries when it comes from the heart. It is called as systolic blood pressure when the coronary arteries force the blood to flow and the diastolic blood pressure when the heart filled up between beats. The normal pressure of blood should not exceed 120 mmHg for systolic blood pressure and 80 mmHg for diastolic blood pressure, however the blood force does not always sustain at a normal range, it remains lower or higher than the optimal value. It undergoes modifications related to the psychological or physiological state of a patient. It can also appear when participant experience powerful emotional stimuli and collapse with some mental desperation. [1] The condition at which the systolic blood pressure exceeds to 120 mmHg and diastolic blood pressure exceeds to 80 mmHg is called as high blood pressure medically titled as hypertension. If elevated blood pressure persist for an extended period it can leads to several defects in body includes the chronic kidney diseases and heart failure. [2]

Above said values of blood pressure are variable in men and women and if upper blood pressure or medically termed as systolic blood pressure is

lower to 110 mmHg and lower blood pressure that means diastolic blood pressure below 60 mmHg in women are considered hypotensive, however, some studies in a few volumes consider that low blood pressure is beneficial because it supplements the mode of a man or a woman and makes it psychologically more powerful. Besides this some plenty of symptoms are related to low blood pressure such as sweating, loss of sleep, confusion, dizziness, hallucinations, fainting, and palpitations.[3] However certain situations may associate with holding an extra or ordinary regimen of antihypertensive pills or taking positive meals such as garlic, ginger, tea, freshly harvested oats, black chocolate, etc. Couple of medical conditions leading to a decrease in blood pressure, including myocardial infarction, adrenocortical insufficiency, high glucose level, loss of appetite, persistent cough and parkinson's disease. Behind this, there is couple of instances wherein low blood pressure constantly looked beyond indescribable symptoms and for this reason, lack of clinical management. [4] It becomes vital to study hypotensive patients with or without pathological disease, and more importantly, it must be managed or not. Many doctors treat hypotensive patients with unusual intravenous remedies followed by some nutrients. This exercise become very commonplace in society and will cause the arrival of human immune deficiency

virus such as (A.I.D.S) Acquired immunodeficiency syndrome, (H.B.V) hepatitis B and (H.C.V) hepatitis C due to risk of frequent reuse of needles. In addition, there is little pathology related to a multiplied blood pressure including cerebral, cardinal and kidney infections that disrupt the lives of multiple genders. [5-10]

Most studies done on high blood pressure, however, statistics on hypotension could be much less that is the main reason for the low standard of knowledge of the medical technologist, medical students and doctors for the management to low blood pressure situations. Therefore, the purpose of our research is to show that it is important to draw attention to hypotension which is not an ordinary circumstance and on which certain undesirable symptoms manifest themselves, thus so want of appropriate therapeutic remedy or management to avoid any adverse conditions.

2. MATERIALS AND METHODS

This descriptive cross-sectional analysis had been conducted by enlisting health science students (M.B.B.S & B.D.S) from Shaheed Mohtarma Benazir Bhutto Medical University, Larkana, Sindh, Pakistan, after being approved by the Ethics Review Committee. The length of time for taking all relevant information and measuring blood pressure of all enlisted students was near about six months. A total of 412 students belong to the first Prof. to last Prof. M.B.B.S & B.D.S had been categorized by using a convenient sampling method. All these students were differentiated into 4 categories; Non-Clinical students M.B.B.S (1st and 2nd Professionals) Clinical students M.B.B.S (4th and final Professionals), Non-Clinical students B.D.S (1st and 2nd Professionals) B.D.S Clinical students (3rd and final Professionals) to analyze the familiarity regarding low blood pressure along with risk factors which may associated with life style modification after clinical exposure to hypotension illness. A distinctive interrogator used as an investigative tool which is designed with the aid of a researcher to summarize the applicable facts queried. The proforma comprises of demographics, lifestyle questions about hypotension, signs and symptoms, and corrective or management actions. After the revealed of the superior command, the consent is withdrawn to the persons during the elaboration of the field of the research observed. All enlisted students were asked to complete their research form as for as the analysis of

blood pressure carried out by the principal researcher and record was maintained in corresponding form. Scanning of blood pressure was done by using a calibrated mercury sphygmomanometer. The records were analyzed using various statistical methods available in SPSS software Version 24.00.

3. RESULTS

An overview of the 412 M.B.B.S and B.D.S students with an equal participation (n = 206 each) of Non-Clinical and Clinical students. From these 199 (48.3%) participants were young males and 213 (51.7%) participants were young females. From total of 412 medical students, 227 (55.1%) students of M.B.B.S and B.D.S consider low blood pressure as a disorder, while the other 185 (44.9%) students no longer consider hypotension as a disease or disorder. When measuring the blood pressure of the 4 groups of 412 participants, 79 (19.2%) participants had less than normal upper blood pressure, but the other 333 (80.8%) participant had optimal blood pressure. Out of the 227 participant who rate hypotension as a disease, 61 (14.8%) participants consider this weakness the prominent sign of hypotension and cognitive worsening as the next prominent sign and symptom. Complications of hypotension like tiredness, dizziness, body aches, chills, sweating, cognitive worsening, fever and feeling of lightness felt by the participant in their daily life, and 266 (64.6%) participants acquired the feeling of such complications in last two weeks. The other 146 (35.4%) participants had not experienced any of the complication. A total of 150 (36.4%) participant said that if hypotension is asymptomatic for long time, it should not be treated or managed by any therapy, while the other 262 (63.6%) participant consider that low blood pressure is with or without sign and symptoms should be handled or managed with the precise treatment. The usual treatment for hypotension suggested by participant was sodium chloride in the form of table salt.

4. DISCUSSION

Before this research study low blood pressure was not the interesting topic to medical technologists, medical students and physicians, as not much research had been conducted on this area. Since there has been no specific discussion in the literature, this is a critical issue for medical science students, medical technicians and physicians. The low blood

pressure disorders considered as an ordinary condition since long time by a general public, medical technologists, medical students and doctors and not count this complication as an

illness requiring treatment. This research has drawn the attention of many medical students towards hypotension illness, its complications and associated interventions. In current research

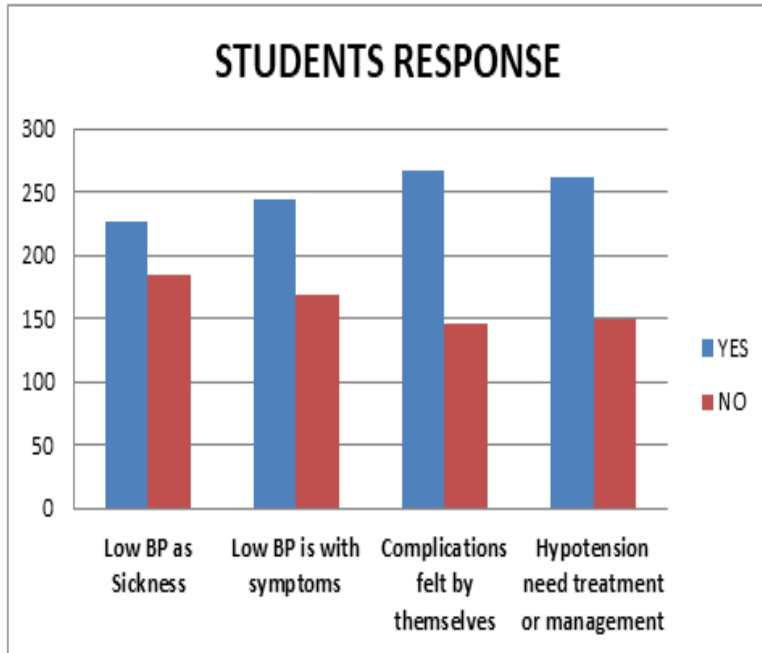


Fig. 1. Response of students towards hypotension illness

TREATMENT OF HYPOTENSION

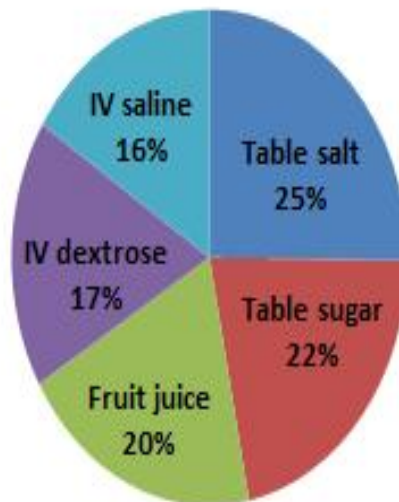


Fig. 2. Response of students towards hypotension treatment

Table 1. Distribution of familiarity and risk factors with hypotension

Variables		MBBS Students		Statistical Analysis			BDS Students		Statistical Analysis			Total Students N %	
		Non clinical (103) N	Clinical (103) N	Total	%	P- Value	Non clinical (103) N	Clinical (103) N	Total	%	P- Value		
Gender	Male	26	30	56	27.2	0.021	64	79	143	69.4	0.023	199	48.3
	Female	77	73	150	72.8		39	24	63	30.6		213	51.7
Low BP as Sickness	Yes	63	32	95	46.1	0.000	62	70	132	64.1	0.025	227	55.1
	No	40	71	111	53.9		41	33	74	35.9		185	44.9
Low BP with symptoms	Yes	48	63	111	53.9	0.036	55	78	133	64.6	0.001	244	59.2
	No	55	40	95	46.1		48	25	73	35.4		168	40.8
BP below normal range	Male	9	3	12	5.8	0.005	6	1	7	3.4	0.005	19	4.6
	Female	19	15	34	16.5		15	11	26	12.6		60	14.6
Complications with low BP	Weakness	8	22	30	14.6	0.006	9	22	31	15.0	0.000	61	14.8
	Vertigo	8	16	24	11.7		8	15	23	11.2		47	11.4
	Body Pain	9	15	24	11.7		10	17	27	13.1		51	12.4
	Shivering	15	13	28	13.6		14	10	24	11.7		52	12.6
	Sweating	11	11	22	10.7		12	12	24	11.7		46	11.2
	Cognitive worsening	19	10	29	14.1		20	9	29	14.1		58	14.1
	Fever	16	9	25	12.1		17	10	27	13.1		52	12.6
	Light headedness	17	7	24	11.7		13	8	21	10.2		45	10.9
Complications felt themselves Hypotension	Yes	60	81	141	68.4	0.002	45	80	125	60.7	0.000	266	64.6
	No	43	22	65	31.6		58	23	81	39.3		146	35.4
Hypotension need treatment	Yes	54	87	141	68.4	0.000	49	72	121	58.7	0.001	262	63.6
	No	49	16	65	31.6		54	31	85	41.3		150	36.4
Treatment for hypotensi on	Table salt	25	31	56	27.2	0.005	16	32	48	23.3	0.038	104	25.2
	Table sugar	23	27	50	24.3		18	21	39	18.9		89	21.6
	Fruit juice	15	23	38	18.4		23	20	43	20.9		81	19.7
	IV dextrose	18	14	32	15.5		22	18	40	19.4		72	17.5
	IV saline	23	7	30	14.6		24	12	36	17.5		66	16.0

study it was observed that 49.1% of medical students in MBBS and BDS not bear in mind low blood pressure a sickness but as a normal physiological condition. This exceptional gap between the sentiment of non-clinical and clinical medical students provides irrefutable evidence of the clinical education of students. The results of our research are similar to the studies of various other scholars who concluded that hypotension without signs or symptoms not considered as an illness or disorder always. [11] In addition, Wesley et al observed that any individual assessed with low blood pressure had a longer life expectancy than an individual with hypertension. The author Qidwai W. along with his coworkers completed another close study conducted in a medical institution of Karachi, Sindh with the conclusion that hypotension is an illness characterized by complications of dizziness, tiredness and headache that can be medically managed with salt, liquids such as tea, espresso and fresh juices. [12] Infect correlating to another study carried at medical teaching institution of Karachi, Sindh most of the masses of Pakistan considered that low blood pressure sickness as an illness. This great distinction of research on the counting of low blood pressure is an illness that does not particularly depend on many breeds and varies according to needs and trusts. This current research is similar to the observation of Pemberton J., who also stated that fatigue was the most important symptom associated with "Systemic hypotension"[13]. The same types of manifestations were noted via Peter C. Rowe and his co researchers, who reported that persistent fatigue turned into the main symptom determined in hypotensive patients. [14] According to certain other studies it is expressed that hypotension related to fatigue can be because of low blood supply to the extremities of the body resulting in decreased delivery of oxygen to tissues and may leads to cardio de oxygenation . Now, because of the decrease in blood flow to the extremities, the accumulation of blood by means of which additional acidotic metabolites can also accumulate, causing a feeling of weakness and fatigue. The additional precision of this study is that couples of healthful individuals have blood pressure below the ordinary range, which does no longer trade their life-style or undesirable outcomes on their usual lives which have similarity with the observation of Wesley and John Pemberton et al. These scholars also determined that hypotension syndrome does not need any intervention. In Paradox, it was agreed by about 262 students that hypotension should

be managed with medicines properly either with or without symptoms. [15] Intravenous sodium chloride (0.9 %) along with oral salts should be consumed regularly for the management of asymptomatic hypotension that is strongly resembled with observational studies conducted on the pupils of Karachi, Sindh by Qidwai W. and others, who also observed that the consumption of table salt was mainly used for the management of low blood pressure syndrome. Pemberton J. postulated that in various countries such as Italy, France and Germany the treatment of low blood pressure was regularized with couple of antihypotensive drugs, including ergotamine, amphetamines, and ephedrine by producing a pressor reaction and improve the role of the sympathetic nervous system. In addition, Barnett and Wagner distinguish phenylephrine and norepinephrine as vasoconstrictive, thereby increasing blood pressure, as amphetamines and ephedrine increase blood pressure by limiting the destruction of norepinephrine at the level of the sympathetic nerve endings. [16]

5. CONCLUSION

It was concluded that 55.1% of M.B.B.S and B.D.S students, belongs to the medical university, consider low blood pressure as a disease, disorder or an illness and 63.6% students agreed that it does required routine care and treatment. 64.6% students of both departments strongly analyze that they felt the complications of low blood pressure in their routine life whereas 59.2% candidates called low blood pressure as a symptomatic complication.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

SMBBMU Larkana Ethics Committee approved the study.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Gheorghide M, Vaduganathan M, Ambrosy A. et al. Current management and future directions for the treatment of patients hospitalized for heart failure with low blood pressure. *Heart Fail Rev.* 2013;18:107–122.
2. Wang Z, Chen Z, Zhang L, Wang X. et al. China Hypertension Survey Investigators. *Circulation.* 2018;137(22):2344-2356.
3. Baig MM, GholamHosseini H. A remote monitoring system with early diagnosis of hypertension and Hypotension, 2013 IEEE Point-of-Care Healthcare Technologies (PHT), Bangalore. 2013;34-37. DOI: 10.1109/PHT.2013.6461278.
4. Jitendra Kumar Epidemiology of hypertension Elsevier BV. 2013;2(2):56-61.
5. Tareen MF, Shafique K, Mirza SS, Arain ZI, Ahmad I, Vart P. Location of residence or social class, which is the stronger determinant associated with cardiovascular risk factors among Pakistani population? A cross sectional study. *Rural & Remote Health.* 2011;11(3):1700.
6. Ashley EA, Niebauer J. Chapter 6: Hypertension. *Cardiology explained.* London: Remedica; 2004.
7. Rabkin SW, Shiekh IA, Wood DA. The impact of left ventricular mass on diastolic blood pressure targets for patients with coronary artery disease. *Am J Hypertens.* 2016;29: 1085-93.
8. Peixoto AJ, Orias M, Desir GV. Does kidney disease cause hypertension? *Curr Hypertens Rep.* 2013;15:89-94.
9. Joung KI, Cho SI. Association of low blood pressure with suicidal ideation: a cross-sectional study of 10,708 adults with normal or low blood pressure in Korea. *BMC Public Health.* 2018;18(1):200. DOI: 10.1186/s12889-018-5106-5. PMID: 29490622; PMCID: PMC5831223.
10. Blaut JA. The relationship between diet self-monitoring and healthful dietary pattern changes in adolescents with elevated blood pressure [dissertation]. Cincinnati: Univ. of Cincinnati; 2013.
11. Wessely S, Nickson J, Cox B. Symptoms of low blood pressure: A population study *BMJ* 1990;301(6748):362-365.
12. Qidwai W, Tara Chand B. Hypotension syndrome: A myth or reality? Results of a patient's survey at a teaching hospital in Karachi. *Pak J Med Sci.* 2006;22(4):373-8.
13. Pemberton J. Does constitutional hypotension exist. *BMJ.* 1989;298(6674):660-2.
14. Lucas KE, Rowe PC, Coresh J, Klag MJ, Meoni LA, Ford DE. Prospective association between hypotension and idiopathic chronic fatigue. *J Hypertension.* 2004;22(4):691-95.
15. American Heart association. Low Blood Pressure. [online] 2005 [cited 2005 Oct 25] Available: <http://www.americanheart.org/presenter.jhtml?identifier=4643>.
16. Dean AG, Sullivan KM, Soe MM. OpenEpi: Open Source Epidemiologic Statistics for Public Health, Version 3.01 Update 2013/04/06. Available: <http://www.openepi.com>

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