Original Research Article

The Relationship between Reported Self-Care Practices and Blood Pressure Levels of Hypertensive Clients at a Provincial Hospital in Zimbabwe

Katsinde CS[1], Katsinde T J[2]

[1]Lecturer, Dept of Health Sciences, Bindura University of Science Education, P. Bag. 1020, Bindura, Zimbabwe.
[2]Lecture, Dept of Social Sciences, Bindura University of Science Education, P. Bag. 1020, Bindura, Zimbabwe.

Corresponding Author: Katsinde CS

ABSTRACT

High blood pressure, the leading risk factor for coronary heart disease, stroke and kidney disease accounts for 9.4 million deaths annually worldwide. In 2009, Zimbabwe had an estimated 39% prevalence for high BP. Control of high blood pressure is dependent on clients' adherence to self-care practices.

Objective: To identify reported self-care practices and determine the relationship between reported self-care practices and blood pressure levels of hypertensive clients at Bindura Provincial Hospital.

Materials and Methods: A descriptive correlational study design was used. A sample of 80 hypertensive men and women attending review at BPH was systematically selected. Data was collected using a questionnaire after obtaining a verbal and written consent. Statistical Package for Social Sciences (SPSS version 15) was used to analyze data. Pearson's correlational and simple regression analyses were used to determine the effect and strength of the relationship of reported self-care practices and BP levels.

Results: Total possible score for hypertension reported self-care practices was 38 (100%); scores ranged from 9 to 30 with a mean score 19.6 and a standard deviation of 6.0. Seventy-eight (97.6%) of clients had mean diastolic blood pressure of 88 mmHg and below. Pearson's correlational analysis showed a negatively significant relationship ($r = -.27$ $p < 0.01$) between reported self-care practices and diastolic blood pressure. Linear regression analysis showed significant negative effect ($b = -3.140917$ $p < .02$) of reported self-care practices.

Conclusion: Control of high blood pressure through adherence to recommended self-care practices is important and improves the quality of life. Nursing practice therefore should adopt protocols that promote self-care practices. Identification of individual learning needs is essential, in order to address clients unique needs.

Key words: High blood pressure, self-care practices, relationship.

INTRODUCTION

Zimbabwe is experiencing a growing burden of cardiovascular diseases, and hypertension is the most important risk factor among the top 15 risk factors. [1] Consultations for hypertension attendants represent by far the biggest caseload for chronic diseases. [2] The Non-communicable disease survey report (2005) showed hypertension increased with age, prevalence rate was 7.9% in the 25-34 years age group rising to 30.9% in 65 years and over age group. [3] A blood pressure survey conducted in an urban environment by Mufunda et al (2006) revealed hypertension (140/90 mmHg) prevalence rate of 35% in women

and 24% in men. [4] According to WHO cardiovascular diseases deaths ranked 4 out of the top 10 causes of hospital mortality whilst stroke was the second cause of death after HIV among the top 20 causes of death accounting for 3.66% of deaths. [5] Given the serious renal, cardiac and central nervous system complications, high blood pressure level is a major public health problem in the region [6] and stroke may impose even greater economic burden on families and society.

Studies however, suggest that people with high blood pressure that practice self-care that is carry out specified regimens are less likely to develop complications. On the other hand many fail to practice self-care and are believed to be among those who frequently experience complications which are preventable. [7] It has not been clearly established, especially in local studies whether clients with high blood pressure fail to practice self-care because they lack the knowledge or not.

This study utilized Orem's (1991) Self-care model for nursing. [8] The theory has three related concepts, which include self-care, self-care deficit and nursing systems. Self-care means care that is performed by one, enabling for consistent, controlled, effective and purposeful action. Self-care deficit occurs when self-care agency cannot meet self-care demands. Nursing systems is the organization of care in helping individuals to meet their self - care needs. Relevant to nursing practice are basic conditioning factors that have an influence on the person's ability to perform self-care.

With high blood pressure (BP) levels the focus of nursing is upon a person's need for self- care. Based on a careful assessment of a person's health care needs and resources for these self-care demands the nurse can evaluate deficiencies that exist and intervene appropriately.

Research Objectives
1. To identify the reported self- care practices of clients with high blood pressure.

2. To determine the relationship between reported self- care practices and blood pressure levels of clients with high BP.

MATERIALS AND METHODS

A non-experimental descriptive correlational study design was used to conduct a study at Bindura Provincial Hospital among men and women able to speak English and or Shona, a vernacular language in the province. Permission to carry out the study was granted by the Medical Research Council of Zimbabwe and Provincial Medical Director of Mashonal and Central Province. A sample of 80 known hypertensive clients who had come for monthly review clinic and had been diagnosed with hypertension for at least 6 months to 5 years were systematically randomly selected from the out-patient department. The clients were aged between 35 and 74 years with no complications such as diabetes, stroke or cardiac failure.

An informed consent was obtained verbally or in written form after explaining the purpose of the study to the participants, with an option to participate or withdraw any time without victimization.

An instrument comprising 3 questionnaires was administered using a face-to-face interview. The questionnaires were demographic data questionnaire, reported self-care practices questionnaire and BP readings for the previous seven months. The demographic data questionnaire measured the demographic variables. These variables were conceptualised as the hypertensive clients personal characteristics such as age, sex, marital status, religion, educational level, income, occupation, residence, period the client had suffered from high BP and familial history of high BP.

Reported self-care practices were defined as those activities reported to be done regularly by clients with high BP in order to maintain levels within normal ranges. Operationally reported self-care

practices were measured by the self-care questionnaire with items including diet, physical activity medication and behaviour changes. Scoring was based on a minimum score of 0 and a maximum score of 38. A score 19 and below indicated poor performance of self-care practices, 19-25 low performance and 26-38 satisfactory performance.

Blood pressure levels were determined by levels of BP exerted on the walls of arteries indirectly measured using a tested sphygmomanometer and a stethoscope. Both systolic and diastolic pressures were measured, although the diastolic pressure was used to determine high blood pressure levels. Control of hypertension was defined as blood pressure below 140/90 mmHg on treatment. Blood pressure readings from March back to September were used to note if there was any control within the seven months period.

Data was collected daily from Monday to Friday between 0900 to 1300 hours in the consultation rooms to ensure privacy. Each questionnaire had a code number to ensure confidentiality. The filled in questionnaires were kept under lock and key in a cupboard and only the researchers had access to them

Statistical Analysis

Data was analysed using the Statistical package for Social Scientists (SPSS version 15). Pearson's correlation coefficient and simple linear regression were used to demonstrate the effect and strength of the relationship of reported self-care practices and BP levels.

RESULTS

The sample consisted of 80 people. The majority 27 (33.8%) were in the age group 35-44 years. The sample comprised of Black Africans only. Women were the majority 61 (76.2%). Most of the respondents 49 (61.2%) were married.

Table 2 shows majority 48 (60.0%) attained an educational level of grade 7 and below. More than half 41 (51.3%) were housewives and the majority 52 (65%) had

no source of income although 53 (66.2%) lived in urban environment. More than half 52 (65%) had suffered from high BP for four to five years. Family history of high blood pressure was predominant in the sample 49(61.2%).

Table 1: Sample Demographics-Age, Race and Marital Status (N=80)

Variable	Frequency	Percentage
Age		
35-44 Years	27	33.8
44-54 Years	22	27.5
55-64years	17	21.2
65-74 Years	14	17.5
Total	**80**	**100.0**
Sex		
Male	19	23.8
Female	61	76.2
Total	**80**	**100.0**
Race		
Black	80	100.0
Asians	0	0
White	0	0
Coloured	0	0
Total	**80**	**100.0**
Marital Status		
Single	4	5.0
Married	49	61.2
Divorced/Separated	4	5.0
Widowed	23	28.8
Total	**80**	**100.0**

Table 2: Sample Demographics-Educational Level, Occupation and Income (N=80)

Variable	Frequency	Percentage
Educational level		
Grade 7 and Below	48	60.0
Form 1-4	27	33.8
Form 5-6	4	5.0
Graduate	1	1.2
Total	**80**	**100.0**
Occupation		
Professional	10	12.5
Skilled Worker	9	11.2
Unskilled	6	7.5
Self- Employed	4	5.0
House Wife	41	51.3
Unemployed	10	12.5
Total	**80**	**100.0**
Income		
None	52	65.0
Less Than US$100	3	3.8
US$101-US$200	2	2.5
US$201-US$ 300	8	10.0
More Than US$400	15	18.7
Total	**80**	**100.0**
Residence		
Urban	53	66.2
Rural	23	28.8
Farm/mining area	4	5.0
Total	**80**	**100.0**
Duration of high BP		
6months to 1 year	8	10.0
2 to 3 years	20	25.0
4 to 5 years	52	65.0
Total	**80**	**100.0**
Family history		
Yes	49	61.2
No	31	38.8
Total	**80**	**100.0**

Results on Reported Self-Care Practices

In this study self-care practices included behavioural changes necessary for the control of high BP such as diet, treatment compliance and exercises.

Table 3: Reported Self-Care Practices – diet within 3 days (N=80)

Diet	Frequency	Percentage
Breakfast		
Tea with milk, bread (with margarine /peanut butter)	58	72.5
Porridge (with peanut butter, lemon or margarine)	31	38,8
Tea with milk, bread (with egg/or ham/or bacon)	12	15
Tea with sweet potatoes	27	33.8
Lunch		
[1]Sadza and vegetable	24	30.0
Sadza and meat	10	12.5
Sadza, meat and vegetable	11	13.8
Sadza and fish or[2]Kapenta	15	18.8
Green Mealies and pumpkin	16	20.0
Sadza and [3]Okra	10	12.5
Other foods	33	41.2
Supper		
Sadza and vegetable	43	53.8
Sadza or rice and meat	41	51.2
Sadza, meat and vegetable	32	40.0
Sadza and fish or Kapenta	23	28.8
Tea and bread	14	17.5
Other foods	4	5.0

NB* 1.Sadza: thick porridge made from maize meal 2. Kapenta: very small fish usually died with salt 3. Okra is lady's finger a vegetable with pods

Table 4: Reported self-care practices - changes in diet following diagnosis of Hypertension and other dietary practices (N=80)

Diet	Frequency	Percentage
Change in diet		
Different diet	17	21.2
Low salt	16	20.0
Low fat	15	18.8
Reduced starch	6	7.5
Canned food	0	0
Dietary practices		
Eating preserved foods	75	93.8
Salted dried vegetable	63	78.8
Salted dried meat	18	22.5
Dried and salted fish/ Kapenta	20	25.0
Salted nuts	36	45.0
Food cooked separately	11	13.8
Add salt before eating	33	41.2
Add salt to taste	40	50.0
Use of lemon juice in cooking	20	25.0
Herb seasoning	5	6.2
Use garlic	17	21.2
Use pepper	14	17.5
Add powdered soups	17	21.2

Table 3 shows regular diet of respondents from breakfast to supper for three consecutive days. Majority 58 (72.5%) ate breakfast comprising of tea with milk and bread with peanut butter or margarine. Lunch was mainly sadza (thick porridge) and vegetables 24 (30%) whilst other foods like drinks; sweet potatoes round nuts and ground nuts were 33 (41.2%). Most are sadza and vegetables 43 (53.8%) for supper.

Table 4 shows a very small number of respondents managed to change their diet 17 (21.2%). Sixteen (20%) changed to low salt diet and 15 (18.8%) to low fat diet. Traditionally salt preserved foods were being consumed by many respondents 75 (93.8%). Adding salt before eating is a relatively common practice 33 (41.2%) whilst 40 (50%) said they add salt to taste. However recommended methods of improving taste in low salt diet have been adopted by some 40 (50%), such as adding lemon, garlic, pepper and herbal seasoning as shown in table 4 above.

Table 5: Reported Self-Care Practices –Compliance with medication (N=80)

Treatment compliance	Frequency	Percentage
Taking medication as prescribed	64	80.0
Adhering to correct frequency	64	80.0
Paying for medication	33	41.2
Borrowing similar medication	4	5.0
Borrowing not similar medication	5	6.2
Sometimes go without medication	38	47.5

Table 5 above shows respondents' compliance with medication, which is highly recommended and essential for the control of high BP. Results show that majority 64 (80%) took medication as prescribed and correctly. Thirty - three

(41.2%) pay for their medication. However a substantial number 38 (47.5%) default

treatment.

Table 6: Reported self - care practices- Reasons for failing to Comply with medication (N=80)

Treatment compliance	Frequency	Percentage
Reasons for failing to comply		
Unavailability of funds	26	32.5
Unavailability of drugs at hospital	11	13.8
Long distance to hospital	6	7.5
Commitments at home	2	2.5
Feeling better	12	15.0
Follows instruction		
Yes	49	61.2
No	31	38.8
Reasons for failing to follow instructions		
Side effects of drugs	12	17.5
Tired of taking medication	5	6.2
Did not understand instructions	4	5.0
Feeling much better	10	15.0

Respondents gave reasons of why they fail to comply with treatment as shown in table 6 above. Majority 26(32.5%) cited unavailability of funds. Majority 49(61.2%) were able to follow instruction. However for those who did not follow instruction reasons cited included side effects, tired of taking medication, not understanding instructions and feeling much better.

Physical Activity

Table 7: Reported self -care practices-Activities at home (N=80)

Daily Activities	Frequency	Percentage
Perform activities daily at home		
Yes	58	72.5
No	22	27.5
Total	**80**	**100.0**
Perform activities weekly at home		
Yes	44	45.0
No	36	55.0
Total	**80**	**100.0**
Perform activities seasonally at home		
Yes	50	62.5
No	30	37.5
Total	**80**	**100.0**
Perform activities occasionally at home		
Yes	10	12.5
No	70	87.5
Total	**80**	**100.0**
Perform activities at work		
Yes	18	22.4
No	11	13.8
Not working	51	63.8
Total	**80**	**100.0**

Regarding activities done at home as shown in table 7 above, 58 (72.5%) revealed that they were involved in some form of activity such as household chores and herding cattle. Those who indicated weekly activity were 44 (45%) and did work such as gardening whilst 50 (62.5%) indicated seasonal activities which include tilling land, weeding and harvesting crops and 10 (12.5%) indicated occasional activity such as herding cattle. Activities carried out at the work place showed that 18 (22.5%) indicated their work was physically involving such as driving, grounds work, cleaning, caring for patients. Some respondents were not very active at work 62 (77.5%) for example administrators.

Table 8: Reported self-care practices -smoking, alcohol consumption (N=80)

Behavioural attributes	Responses	Frequency
Smoking		
Yes	14	17.5
No	66	82.5
Total	**80**	**100.0**
No of cigarettes/Snuffing		
Snuffing >10times	3	3.8
5-10 cigarettes per day	6	11.3
cigarettes per day	3	3.8
>20 cigarettes per day	2	2.5
Period of smoking		
0-2 years	3	3.8
2-5 years	3	3.8
>10 years	8	10.0
Stopped smoking		
>1year	1	1.3
2-5 years	1	1.3
>10years	5	6.2
Not stopped	7	8.8
Change in smoking habits		
Reduced	2	2.5
Stopped completely	7	8.8
Not stopped	5	6.2
Drinking alcohol		
Yes	21	26.2
No	59	73.8
Total	**80**	**100.0**
Alcohol drinking pattern		
Every day	7	8.8
Weekly	10	12.5
occasionally	4	5.0
No .of drinks per day		
1-2 pints	2	2.5
3-5 pints	3	3.8
>5 pints	10	12.5
1-2 litres opaque beer	5	6.2
Changes in drinking habits		
Reduced	5	6.2
Stopped	12	15.0
Not changed	4	5.0

Table 8 shows behavioural changes of smoking and alcohol consumption in which majority were none smokers 66 (82.5%) and non- alcohol drinkers 59 (73.8%). The 14 (17.5%) who were smoking or smoked before, 7 (8.8%) managed to stop smoking after having been diagnosed with high blood pressure. Twenty-one (26.3%) percent agreed to taking alcoholic beverages. Out of these 12 (15%) had stopped consuming alcohol.

Table 9 above shows total scores for reported self-care practices which was based on a minimum score of zero and a maximum of 38. Total reported self-care practices score for the study ranged from 9 to 30. Of the 80 subjects, 21 (26.2%) scored below 19 indicating poor practices, 50 (62.6%) scored between 19 and 25 points indicating low levels of practices and 9 (11.2%) scored between 26 and 38 points indicating satisfactory level of practices.

Table 9: Reported Self-Care Practices Total Score Out of 38 (N=80)

Score	Frequency	Percentage
9	1	1.2
11	2	2.5
13	1	1.2
15	4	5
16	7	8.8
18	6	7.5
19	9	11.2
20	10	12.5
21	6	7.5
22	7	8.8
23	7	8.8
24	8	10
25	3	3.8
26	3	3.8
27	3	3.8
28	1	1.2
29	1	1.2
30	1	1.2
Total	**80**	**100**

Blood Pressure Readings

Table 10: Mean Diastolic BP Levels

Level	Frequency	Percentage
70 mmHg	7	8.8
71 mmHg	5	6.2
73 mmHg	3	3.8
74 mmHg	3	3.8
76 mmHg	8	10.0
77 mmHg	5	6.2
78 mmHg	5	6.2
80 mmHg	2	2.5
81 mmHg	7	8.8
83 mmHg	8	10.0
84 mmHg	5	6.2
86 mmHg	10	12.5
87 mmHg	7	8.8
88 mmHg	3	3.8
90 mmHg	1	1.3
100 mmHg	1	1.3
Total	**80**	**100**

Table 10 shows mean diastolic blood pressure levels (for a six months period) ranging from 70 mmHg to 100 mmHg. Majority of respondents 78 (97.5%) had controlled mean diastolic blood pressure levels between 70 mmHg and 88 mmHg and only two had a mean of 90 mmHg and 100mmHg respectively.

Pearson's Correlation of reported self-care practices and diastolic blood pressure shows a negative significant correlation = -.27 p< .02. Thus as the self-care practices increase diastolic blood pressure levels decrease. A significant negative effect (b=-3.140917 p<.02) of reported self-care practices was also shown.

The significant regression co-efficient represents a change in reported self-care practices for every unit change in diastolic blood pressure levels. The significant R^2 (r^2=0.7 p<.02 indicating that reported self-care practices explain 7% of the variance in diastolic pressure levels.

DISCUSSION

This study sample age ranged from 35 to 74 years which made it possible to examine the reported self- care practices and blood pressure levels in a wider age range. High blood pressure appeared to be higher among females than males at the provincial hospital. The results concur with those of Mufunda et al [9] which showed female prevalence rate of 35% compared to 24% in males in a study conducted in Harare. The high prevalence of high blood pressure in females was also shown by Seedat et al [10] and Cois & Ehrlich [11] in studies carried out in South Africa and also supported by Lloyd-Sherlock et al, [12] who analyzed data from the World Health Organization's Study on Global Ageing and Adult Health (SAGE) to examine patterns of hypertension prevalence, awareness, treatment and control for people aged 50 years in six countries (China, Ghana, India, Mexico, the Russian Federation and South Africa.).

Results also show that hypertension increases with age. This result concurs with the non-communicable diseases survey carried out in 2005 [3] and also supported by Lloyd-Sherlock et al. [12] Awareness of age as a risk factor is important for people to adopt healthy lifestyles which may help to delay the onset of hypertension.

More than 60% had a family history of hypertension and this has been highlighted also by Perry et al [13] that people may be genetically susceptible to high blood pressure.

Majority of respondents were married and resided in an urban environment and this concurs with the results of the NCD's survey. [3] This could be the result of poverty, urbanization and the adoption of western type lifestyles characterized by consumption of fast foods and processed food with a high salt content, reduced physical activity leading to obesity and increased psychosocial stress.

The highest educational level of the majority of respondents was grade 7 and below and most were housewives and unemployed. Kauffman and Berky expressed that "higher educational levels enhance coping mechanisms and augment resources for successful coping." [14] The level of education has a bearing on employment status of individuals and hence income. Data from World Bank also shows that more than 50 % of Zimbabweans are below the poverty datum line and about 30 % are very poor. The majority therefore are in the low socio-economic status and so are a high risk group for hypertension. This is also supported by Lloyd-Sherlock et al who also highlighted that income levels have an influence on high blood pressure management. [12]

In Zimbabwe chronic diseases that include high blood pressure, diabetes and cancers are not in the category for exemption of hospital fees except probably for patients above 65 years old. Poor control and subsequent complications are anticipated as more than 80% of respondents who are also housewives and unemployed automatically are paying patients yet, they are already poor and have no source of income. This will be a hindrance for the clients to attend monthly reviews as well as collection of monthly drug supplies. Clients are therefore likely to default treatment, borrow medication from friends and or neighbours with similar condition or worsen the blood pressure resulting in complications.

Self-care practices were considered to be those activities that reflect a person's lifestyle and the adaptations specific to the hypertensive clients in order to control and maintain blood pressure within normal ranges. Reported self-care practices included aspects of diet, physical activity, smoking and alcohol consumption.

The commonest breakfast was tea

with milk and bread with margarine and peanut butter. Lunch and supper was mainly sadza and vegetable. Diet taken for three consecutive days was explored so as to avoid recall bias and to find out if hypertensive clients excessively consumed foods that highly contribute to or aggravate high blood pressure. Carbohydrates were dominant in the diet especially *sadza* (thick porridge) mainly because that is the staple food in Zimbabwe. Diet was quite basic that it would especially for the poor who cannot afford eggs and other breakfast meats and cereals every day. In South Africa bread has been identified to be the greatest contributor of salt intake and so excessive intake is not good for hypertensive clients. [15] Respondents ate more vegetables as meat is very expensive and unaffordable for the ordinary person especially given the low socioeconomic status of the majority. Regarding change in diet post hypertension diagnosis, more than three quarters of respondents had not changed.

Majority of the respondents indicated they ate traditionally preserved foods which are generally high in salt, used for preservation of these foods, yet sodium chloride is the most abundant salt occurring naturally in food. Results of this study also show that many people added salt before eating and when cooking thereby predisposing themselves to high blood pressure. This concurs with many studies carried out in Africa that have showed high salt consumption resulting from adding salt at table and in cooking. [16] Hypertensive clients thus could be eating a lot of salt way above the recommended 5 grams per day. [17] Campbell et al [18] highlighted that some clinical studies suggest a diet high in salt plays a role in aetiology and pathogenesis of hypertension. Some studies also suggest that restricting dietary salt may be an alternative to antihypertensive medication [16] and He et al [19] even suggest that reduction of salt intake at population level will lower population blood pressure which has a greater effect on reducing cardiovascular diseases. Methods to improve taste such as

use of garlic, lemon, and herbs are used by a few yet this practice could help to reduce salt intake.

Regarding treatment most respondents indicated compliance and knew how often to take the medication. This is important especially in the control of high blood pressure and could have played a major role in this study. Blood pressure levels may be used by clinicians as a warning that medication has not been taken as prescribed. [20] Whilst majority had no tendency of borrowing medication a small percentage did. This is an unsafe practice as the dosages may be different or tablets may be expired and some more potent than others thus unsuitable for some of them. Some clients ran out of medication because of long distance, feeling better and lack of funds. Thus the low socioeconomic status may be placing them in such situations. Reasons for not following instructions were due to side effects, feeling better, and tiredness of taking medication and not well understood instructions. Rudd [21] expressed that "side effects of drugs may prompt the patient to stop therapy, reduce or delay medication". Non- compliance is a serious situation warranting urgent attention realizing the grave complications like stroke, heart and renal failure that can arise from uncontrolled high blood pressure. Shea et al [22] found that compliance with medication was poorer in men than females. In addition the study showed that unemployed people had poorer compliance. Guifrida and Torgerson [23] results concur with this study's results as their findings show that unavailability of funds to get to hospital or pay for consultation fees were reasons why some clients ran out of medication.

In terms of physical activity both at home and at work, majority mentioned they were involved in some activity. Most women indicated household chores (which going to fetch water and firewood, gardening and working in the fields. Taking note of the African culture on performing exercises especially in the rural areas,

physical activity was considered in terms of day to day activities in the home and at work. Since household chores are so regularized they are likely to have been providing adequate exercise that can help to keep clients physically fit. The problem may arise with seasonal activities like tilling, weeding and harvesting which can be very strenuous and not recommended as regular exercise especially for hypertensive clients.

Smoking and alcohol consumption are important practices that have an influence on hypertension. Smoking is a powerful risk factor for cardiovascular disease and avoidance of tobacco is very important. [24] Tobacco is the most readily preventable risk factor for both young and old causing one tenth of cardiovascular diseases and 6 million deaths worldwide. [25] In this study three women took snuff. Their levels of blood pressure were significantly lower. These results concur with results by Mufunda et al [4] which revealed low blood pressure levels for women taking snuff. However this is contrary to a study done in Sierra Leone in which women who took snuff had raised blood pressure. [26]

Excessive alcohol consumption is not advised for hypertensive clients. Results from a study by Lloyd-Sherlock et al showed hypertension was associated with heavy alcohol consumption. [12] In Zimbabwe few women as compared to men take alcohol as was confirmed by the NCD survey. [3]

Reported self- care practices scores showed the majority of participants had low to poor levels of practices. Only 7.5% had satisfactory self -care practices. Self- care practices that include dietary control, physical activity, and smoking and excessive alcohol consumption have been widely researched on and are highly recommended for the control of high blood pressure. Nurses need to identify individualised health care needs and give health education that is client specific in order to minimising complications which are debilitating and more expensive to manage.

The results revealed an inverse relationship between reported self- care practices and blood pressure levels. As the reported self-care practices increase blood pressure levels decreased. The significant regression coefficient represents a change in blood pressure levels for every unit change in reported self-care practices. The significant R^2 supports that reported self-care practices explain 7 % variance in the blood pressure levels.

This is a situation aimed at in medical-surgical nursing in the management of high blood pressure where self -care practices should increase in order for blood pressure levels to decrease. According to Orem's self-care theory [8] the individual should engage in actions intended to maintain life, health and well-being and thus achieve self-care. The self-care theory focuses on a person's capabilities or power in self- care actions [27] which may be driven by adequate knowledge about the disease and thus have an influence on self-care practices.

CONCLUSION

This study supports that self- care practices are important in the control of hypertension and prevention of its complications. Self- care is a learned goal oriented activity of individuals with a chronic ailment. Increased self-care practices have revealed a direct effect of reducing high blood pressure. Well controlled high blood pressure improves the quality of life of hypertensive clients.

REFERENCES

1. Lim SAD, Flaxman AD, Andrews KG, Atkinson CE, Carnahan E, Colson KE, Jasrasaria R. A comparative risk

assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990-2010: A systematic analysis for the Global Burden of Disease Study 2010". Lancet .2012. 380: 2224-60.

2. National Health Strategy for Zimbabwe 1997-2007. MOHCW. Harare, Zimbabwe

3. ZIMSTAT. National Survey: Zimbabwe Non-Communicable Disease Risk Factors Report, MOHCW, Harare. 2005.

4. Mufunda J, Chatora, R, Ndambakuwa Y, Nyarango P, Chifamba J, Kosia A, Sparks HV. Prevalence of Non-communicable Diseases in Zimbabwe: Results from analysis of data from the National Central Registry and urban survey." Ethnicity & Disease.2006; 16: 718-722.

5. WHO. Non-communicable diseases country profiles: WHO global report, WHO, Geneva. 2011a.

6. Matenga JA, AllainTJ, Wilson AO, Adamchak DJ, Senzanje B, Mushangi E. Gomo Z. Blood Pressure Measurement and Assessment of Hypertensive Patients". Central African Medical Journal. 1997; 87(10): 1371-1373.

7. Kitai IC, Irwig LM. Hypertension in urban black outpatients .Who get treated and for how long? SAMJ. 1997; 55: 211-244.

8. Orem D E. Nursing: Concepts of Practice (4th ed). St Louis: Mosby- year book Inc.1991.

9. Mufunda J., Scott LJ, Chifamba J, Matenga J, Sparks B, Cooper R, Sparks H. Correlates of BP in an urban Zimbabwean population and comparison to other population of African Origin. Journal of Human hypertension. 2000; 14(1): 65-73.

10. Seedat YK, Seedat MA, Hackland DBT. Biosocial factors and hypertension in urban and rural Zulus. SAMJ. 1982; 61: 999-1002.

11. Cois A, Ehrlich R. Analyzing the socioeconomic determinants of hypertension in South Africa: a structural equation modeling approach. BMC Public Health. 2014:14(1):414.

12. Lloyd-Sherlock P, Beard J, Minicuci N, EbrahimS, & Chatterji S. Hypertension among older adults in low and middle-income countries: prevalence, awareness and control, International Journal of Epidemiology. 2014; 4: 1–13. doi:10.1093/ije/dyt215.

13. Perry IJ, Whincup PH, Sharper AS. Environmental factors in the development of essential hypertension. British Medical Bulletin. 1994; 550(2): 240-259.

14. Kaufman J, Barky N. Hypertension in Africa: An Overview of Prevalence Rates and causal risk factors. Ethnicity and diseases. 1993; 3 (suppl): 583-591.

15. Charlton KE, Steyn K, Levitt NS, Zulu JV, Jonathan D, Veldman D, Nel JH. Urinary excretion and reported dietary intake of sodium, potassium, calcium and magnesium in normotensive and hypertensive South Africans from three ethnic groups. European Journal of Cardiovascular Prevention and Rehabilitation. 2005; 66: 347-354.

16. Elliot P, Brown I. Sodium Intake around the World. WHO, Geneva .2007.

17. WHO. Prevention and control of non-communicable diseases, Sixty-Fourth World Health Assembly, WHO, Geneva. 2011b.

18. Campbell NRC, Ellen Burgess E, Taylor G, Wilson E, Cléroux J, Fodor JG, Spence JD. Lifestyle changes to prevent and control hypertension. Do they work? CMAJ. 1999; 160 (9): 1341-1343.

19. He FJ, Li J, Mac Gregor G A. Effect of longer term modest salt reduction on blood pressure: Cochrane systematic review and meta-analysis of randomized trials. BMJ. 2013; 346:1-15.doi: 10. 1136/bmj.f1325.

20. Roger W, Morrell D, Park D, Kidder MM. Adherence to Antihypertensive Medications across the Life Span. The Gerontologist .1997; 37(5): 609-619.

21. Rudd P. Clinicians and patients with hypertension: Unsettled issues about compliance. Journal of the American Heart Association. 1995; 130: 572-579.

22. Shea S, Misra D, Ehrlich MH, Field L, Francis CK. Correlates of non-adherence to hypertension treatment in inner city minority population. AJPH.

1992; 82(12): 1607-1612.

23. Guifrida A, Torgerson DJ. Should we pay the patient? Review of Financial incentives to enhance patient compliance. BMJ. 1997.315; 703-706.

24. Fodor JG, Whitmore B, Leenen F, Larochelle P. Lifestyle modifications to prevent and control hypertension. 5. Recommendations on dietary salt. Canadian Hypertension Society, Canadian Coalition for High Blood Pressure Prevention and Control, Laboratory Centre for Disease Control at Health Canada, Heart and Stroke Foundation of Canada. CMAJ. 1999; 160 (9 Suppl): S29-S34.

25. Mendis S, Puska P, Norrving B. Global Atlas on Cardiovascular Disease Prevention and Control. World Health Organization (in collaboration with the World Heart Federation and World Stroke Organization). Geneva. 2011.

26. William D.E, Lisk DR.A high prevalence of hypertension in rural Sierra Leone. West African Journal of Medicine. 1998; 17(2):85-90.

27. Lee MB. Power self and health in women living in urban squatter settlements in Karachi Pakistan. A test of Orem's Theory. Journal of Advanced Nursing. 1999; 30 (1): 248-259.

****