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LIFESTYLE MODIFICATION: CURRENT APPROACH TO HYPERTENSION PREVENTION AND CONTROL

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ABSTRACT

Developing countries are experiencing epidemiological transition from communicable to non-communicable diseases. One of such non-communicable diseases is hypertension, which has become a significant problem in many developing countries. The emergence of hypertension and other cardiovascular diseases as a public health problem in these countries is strongly related to the aging of the populations, urbanization and socio economic changes favoring sedentary habits, obesity, alcohol consumption, and salt intake, among others. Cardiovascular disease is responsible for about 23,800 deaths annually in the United Kingdom. Between 28% and 31% of adults in US have hypertension. Of this proportion, 90% to 95% have primary hypertension. The remaining 5% to 10% of this group have secondary hypertension. Hypertension is common worldwide and is now regarded as a major public health problem. Hypertension affects 600 million people worldwide. It is the most common cardiovascular disease in black Africans and a major cause of morbidity and mortality among Nigerians. The hypertension burden in terms of prevalence in Nigeria was put at between 10-12% using 1992 National Non-Communicable Disease Committee Survey report, but with changes in the criteria for the diagnosis of hypertension, it is expected that the prevalence of hypertension in Nigeria is between 20 to 25%. This implies that with a population of 144 million nearly a 1/5 to 1/4 of Nigerians are hypertensive. Age, sex, obesity, stress, and unhealthy lifestyles predispose one to hypertension. The paper therefore exposes various healthy lifestyles as appropriate diet and exercises through which health could be promoted and hypertension prevented.

KEY WORDS

Hypertension, Prevention, Control, Lifestyle Modification and Health Belief Model.

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INTRODUCTION

A lot of work has been done on hypertension, internationally and few in Nigeria especially within the rural areas. In the 18th century, the health burden was on communicable diseases. Hypertension was not of interest then. But now, with the epidemiological transition from communicable to non-communicable diseases, hypertension has been recorded as a major type of

cardiovascular disease with attendant complications. Cardiovascular diseases are said to be responsible for about 23,800 deaths annually in United Kingdom alone^{1,2}. Between 28% and 31% of adults in United States of America has Hypertension. Hypertension affects 600 million people worldwide³. It is the most common cardiovascular disease in black Africans and a major cause of morbidity and mortality among Nigerians. Because hypertension rarely have symptoms, one third of the people affected do not know they have the disease, at such it is called the “Silent killer.” Many complications are associated with hypertension such as heart attack, stroke, kidney damage and a host of others. Meanwhile, the disease could be prevented as well as controlled through modification or elimination of unhealthy lifestyles among others. The challenge to reduce the morbidity or/and mortality as a result of this deadly disease, therefore falls on the nurse. Her expertise as a counselor, educator, coordinator and more so, a care-giver, makes her best ‘fitted’ for this challenge within the health care system. The management of hypertension in the 20th Century was mainly drug therapy. In the present Century; there is a paradigm shift to non-drug strategies with emphasis on lifestyle modification. The paper discusses various modalities by which hypertension could be prevented and controlled through the application of some models of behaviour Change and Community Health Nursing process approach.

Hypertension in Relation To Lifestyles

Based on the slogan of World Health Organization (WHO) and International Society for Hypertension (ISH), ‘MAKE A HEALTHY BLOOD PRESSURE YOUR GOAL’, they have recommended that doctors should prescribe drugs when blood pressure is greater than 140/90mmHg. This new guidelines defines a normal blood pressure as equal or below 120/80mmHg. Blood pressure between 120/80 and 139/89mmhg are considered pre-hypertension. Individuals with prehypertension are at increased risk of developing hypertension and should consider making healthy lifestyle changes. A health promoting lifestyle provides internal resources that aid in coping and it buffers or cushions the impact of stressors¹⁰. Lifestyle is way of living of individuals, families (households), and societies, which they manifest in coping with their physical, psychological, social and economic environments on a

day-to-day basis. Lifestyle is expressed in both work and leisure behaviour patterns, and (on an individual basis) in activities, attitudes, interest, opinions, values and allocation of income. It also reflects people’s self-image or self-concept; the way they see themselves and believe they are seen by the others. Life style is a composite of motivations, needs, and wants and is influenced by factors such as culture, family, reference groups, and social class¹¹. Lifestyle of individuals is focused on information about health-related behaviours. These behaviours include patterns of sleep, exercise, nutrition and recreation, as well as personal habits such as smoking and use of illicit drugs, alcohol, and caffeine. Many people deny or underestimate the degree to which they are involved in these lifestyles¹². Sometimes it is difficult for people who are disease-free to understand fully the profound impact of chronic illness on the lives of patients and their families. People tend to engage in risks behaviours without a reflection of its consequences. Some individuals engage in overeating, smoking, drinking excess alcohol, sedentary life, and use of drugs as marijuana. Some go for complementary and alternate therapies as using herbs, excessive fasting, and keeping ‘vigils’ in the name of praying. Most people have crave for fatty foods, juices, canned foods and all the “take away” stuffs that have plenty of salt in them. People go about their daily activities without rest. If not that God created night, some individuals may work themselves to death due to stress. Many executives go home along with the office work; academicians burn midnight candles to make papers for presentations, certificates or even lecture notes. Such practices are stress-friendly and have been traced to development of hypertension¹³.

Many studies have attested to the link between hypertension and lifestyle. In a study conducted by¹⁴, percentage of patients with hypertension, acquainted with no pharmacology treatment options of physical activity was 49%, reduction of salt intake was 54%, and reduction of caloric intake was 48% whereas relaxation techniques were only known to 17%. This implies that lack of relaxation contributed much to their conditions as they were ignorant of its benefits¹⁵ in his work noted significant positive relationship between salt intake in both systolic (2.17mmHg, [95% CL 0.44 to 3.91]) per 50mmol of UNa per day, (P< 0.001) and diastolic BP (1.10mmHg [0.08 to 1.94], (P<0.001) at baseline. At six

month the intervention group showed a reduction in systolic (2.54mmHg [-1.45 to 6.54] and diastolic (3.95mmHg [0.78 to 7.11], ($P < 0.015$) BP when compared to control. In the survey by Egan¹⁶, most respondents ($\geq 90\%$) concurred that several lifestyle changes lower BP; 75% reported a lifestyle change; and 61% indicated it lowered their BP.

Dickinson¹⁷, in the study selection and data abstraction added to the many evidences provided by researchers on impact of lifestyle changes on hypertension. They included randomized, controlled trials with at least 8 week's follow up. Comparing lifestyle with control interventions, enrolling adults with blood pressure at least 140/85mmHg. They categorized trials by types of intervention and used random effects, meta-analysis to combine mean differences between endpoint blood pressure in treatment and control groups in 105 trials randomizing 6805 participants. Robust statistically significant effects were found for improved diet, aerobic exercise, alcohol and sodium restriction and fish oil supplements: mean reductions in systolic blood pressure of 5.0mmHg (95% confidence interval (CI): 3.1–7.0) 4.6mmHg (95% CI: 2.1-7.1), 3.8mmHg (95% CI: 1.4-6.1), 3.6mmHg (95% CI: 2.5-4.6 and 2.3mmHg (95% CI: 0.2-4.3) respectively, with corresponding reductions in diastolic pressure. Relaxation significantly reduced blood pressure only when compared with non-intervention controls. They found no robust evidence of any important effect on blood pressure, of potassium, magnesium or calcium supplements. They concluded that patients with elevated blood pressure should follow a weight-reducing diet, take regular exercise, and restrict alcohol and salt intake. Available evidence though does not support relaxation therapies, calcium, magnesium, or potassium supplements to reduce blood pressure.

Lifestyle Modification

Experts on diabetes and hypertension have advised Nigerian's to embrace lifestyle modification and serious exercise to curb the rising incidence of diabetes mellitus and hypertension in the country Fasamade¹⁸ agreed that fast foods and other foreign foods, refined sugars, too much salt, westernization and obesity, were among the common factors that cause diabetes and hypertension in Nigeria. Gbiri¹⁹ attributed the rising incidence of hypertension to sedentary lifestyle, alcoholism, anxiety, overweight and smoking, among others which were

referred to as modifiable risk factors. He further stated that "people that are obese have 90 per cent chance of being hypertensive or diabetic, so over 95 per cent of people that are between 90 and 80 years who are obese are likely to have diabetes mellitus"²⁰.

Authors have outlined the necessary healthy lifestyle changes for lowering of blood pressure²¹. They stated that there are several things that one can do to keep one's blood pressure healthy. These actions should become part of one's regular lifestyle: Exercise at least 30 minutes a day, Maintain normal weight, Reduce salt intake, Increase potassium intake, Limit alcohol consumption; lower or moderate alcohol consumption (1-2 glasses a day). This may actually lower the risk for heart attack among men with high blood pressure and Consume a diet rich in fruits, vegetables, and low fat dairy products while reducing total and saturated fat intake^{21,22,24,27}.

Nursing Intervention in Lifestyle Modification

The aim of community-oriented nursing is to create partnerships with individuals, families, groups, and communities to promote their health. In passive partnership, nurse takes a leadership role in developing interventions for the benefit of individuals or communities. As the partnership becomes more active, community members become more involved in assessing, planning, impending, and evaluating change. In an active partnership both professionals and community residents determine health needs and plan interventions. As residents increase their awareness, they are better able to determine what they want for themselves, their families and their community and they are more likely to take leadership role in programme development, using health professionals as consultants. Taking the lead, the nurse wades into the community to conduct a community assessment in order to identify the individual's, family or community risk behaviours associated with hypertension and institute a plan of actions to promote healthy lifestyles. This is done adopting the community health nursing process.

Community Health Nursing Process

This involves 6 systematic processes: Establishing, reinforcing or maintaining working relationship with client, coworkers and the public, assessing the situation as it relates to the health and nursing care as well as to the balance between health conditions and the reinforcing or countervailing forces that mediate them, developing and

negotiating action goals with client and coworkers, with collaboration of client and others involved in the process, decoding among possible courses of action, developing step-by-step course of action, including check points and validating or evaluating the action taken³¹.

Assessment

She adopts a tool that will best help her to explore and extract the various lifestyles of individuals or families within the community that is inimical to health. She tries to identify cases and reasons for the adoption of a particular lifestyle. For appropriate diagnosis, she has to assess the client(s) perception in these five variables of the health believe model: The client's Perceived susceptibility to illness, perceived severity of illness, perceived benefit of action, perceived barrier to action and cues to action.

These are the variables that will determine whether or not the client will adopt the preferred behaviour change. The purpose of client assessment is to develop strategies to improve the health and quality of life of the individuals or community members. It is conducted for positive reasons as: review of existing practice to bring change and refinement, provide information for policy formulation, prevent costly mistakes as a result of underutilization of programme, encourage lateral thinking and provide people with opportunity to challenge long accepted ideas with new information.

Tools such as observation, interviews, focus group discussion or questionnaire, screening etc are used in gathering the data.

From the assessment, information or data is generated as to client's lifestyle-an alcoholic, sedentary life, antisocial, extra salt at table, no time for exercise, drug dependent, smoker, avaricious eater? Does he see himself as susceptible to the disease i.e. his attitude toward having hypertension, if the lifestyle continues as it is? If he has hypertension already, does he know the consequences? If he does, how does he perceive it? Is he willing to be assisted to arrest the progress or has he resigned to fate? Or is he apathetic about the outcome of the disease? Does he know the benefits of having a normal pressure or its control, if a positive lifestyle is adopted? Are there factors militating against his taking action? Is it will power, lack of skill, lack of finance, lack of support or influence of peer group, family, or community? Does cultural belief form a hindrance?.

Outcome Identification Diagnosis

The nurse then makes a diagnosis based on her findings i.e. the problem is identified.

- Goal Setting: the goal is set which should be client focus. It must be realistic, specific, measurable, and achievable as well as time bound.
- Decision making Phase: possible courses of action are provided, which must be culture sensitive and within available resources, skills inclusive. The decision taking means there are various course of action from which the best option is chosen. It is not done by the nurse alone rather it is a collaborative approach in which the client is involved.

PLANNING

A step by step course of action is outlined aimed at achieving the expected result or outcome considering the available resources. Cues which will form a reminder for the client is provided e.g. keeping his canvas near his bed to remind him of a morning jogging. The action planned could be health education or activities such as jogging or exercises. A poster, flier, or sticker with the picture of a nurse checking blood pressure could serve as a reminder for regular blood pressure measurement to the client. Plan is based at client's behavioral stage applying the transtheoretical model.

IMPLEMENTATION

The planned action is executed.

EVALUATION

Evaluation is carried out to determine the extent of success. It could be process evaluation, outcome, or goal based. Follow up is necessary for sustainability of changed behaviour.

There are other models for behaviour change such as the health promotion model and the Transtheoretical Model. The later runs five phases-precontemplation, Contemplation, Planning or Preparation, Action and Maintenance.

The Health Promotion Model is based on the following assumptions, which reflect both nursing and behavioural science perspectives:

- Persons seek to create conditions of living through which they can express their unique human health potential.
- Persons have the capacity for reflective self-awareness, including assessment of their own competencies.
- Person value growth in directions viewed as positive and attempts to achieve a personally acceptable balance between change and stability.
- Individuals seek to actively regulate their own behaviour.
- Individuals in all their biopsychosocial complexity interact with the environment, progressively transforming the environment and being transformed overtime.
- Health professionals constitute a part of the interpersonal environment, which exerts influence on persons throughout their life span.
- Self-initiated reconfiguration of person-environment interactive patterns is essential to behaviour change.
- These assumptions emphasize the active role of the client in shaping and maintaining health behaviours and in modifying the environmental context for health behavior³².
- She should participate in health policy and planning focused on the needs of the client and not the policy maker. Same should be culture sensitive for easy acceptance.
- Provision of care should be based on principles of PHC– of availability, accessibility, affordability, acceptability, equitability, as well as sustainability.
- Machinery for intensive advocacy and regular screening should be put in place.
- The nurse should also be a role model with positive attitudinal change that will make her the client’s preference, amongst the health team.
- The client should imbibe the concept of self-care.
- She must guard her functions jealously.

NURSING IMPLICATION IN HYPERTENSION PREVENTION AND CONTROL

- Every chronic illness takes its financial toll. The nurse should therefore be population focus in rendering service as what affects one man, affects the family, and community at large.
- Preventive measures is cost effect, therefore emphasis should be on prevention rather than control.
- For control, strict adherence to prescribed drugs should be stressed to avoid complications.
- Collaboration with other members of the health team should be encouraged. The nutritionist is needed when the diet need to be modified. Physiotherapist sees to exercises etc.
- Inter Sectoral approach need to be adopted in the management of hypertension. Good housing is related to the welfare of a hypertensive patient. If there are plenty of fruits and vegetables to choose from, the BP may remain normal etc.

RECOMMENDATIONS

- A mobile monitoring clinic should be established in every LGA for regular blood pressure check of individuals.
- The exercise should be population focus.
- Referrals to secondary and tertiary institutions should be made as appropriate.
- Days of service should be decided by the client and not for the client.
- Community members should be involved actively in providing conducive environment for the screening exercises.
- Seminars and Workshops should be organized for Community members to sensitize them on the importance of regular blood pressure check and sustainability of learned habit.

SUMMARY

Hypertension is a silent killer. One of the most dangerous aspects of the disease is that one may not know that he has it. Nearly one-third of the people who have hypertension don’t know it³³. The only way to find out if one has high blood pressure is to get ones blood pressure checked on a regular basis. This is especially important if one has a close relative who has high blood pressure. If the blood pressure is extremely high, there may be certain symptoms to look out for, including: severe headache, fatigue or confusion, vision problems, chest pain, difficulty in breathing, irregular heartbeat, blood in urine. With these symptoms, one should see the doctor

immediately. Untreated hypertension can lead to complications as stroke, heart disease, kidney failure and eye problems.

To prevent or control high blood pressure, a non-therapeutic measure as lifestyle modification through health promotion and protection strategies has yielded good results. Regular blood pressure screening is advocated for detection and early intervention. Three main group of drugs employed in the management of hypertension are the diuretics, Angiotensin Converting Enzyme Inhibitors (ACEI) and Beta blockers.

CONCLUSION

Hypertension is a chronic disease and at such management should be economic driven, making services available, accessible, acceptable, and affordable and equitably distributed through the joint efforts of the health and non-health sectors with emphasis on lifestyle modification.

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CONFLICT OF INTEREST

We declare that we have no conflict of interest.

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