ASSOCIATION OF SEVERITY OF ESSENTIAL HYPERTENSION AND PSYCHIATRIC CO-MORBIDITY IN PATIENTS ATTENDING THE CARDIOVASCULAR OUT-PATIENTS CLINIC AT THE UNIVERSITY OF PORT HARCOURT (UPTH)

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ABSTRACT

BACKGROUND: *Essential hypertension, a non-communicable disease, is assuming an epidemic dimension, of the nature of a communicable condition, with associated psychiatric comorbidity among the sufferers.*

AIM: *The aim of this study, therefore, was to determine the relationship between the severity of hypertension and psychiatric illness among persons with essential hypertension attending the cardiovascular clinic in UPTH.*

METHODOLOGY: *In this comparative cross-sectional study, following ethical approval from the appropriate committee of the hospital and informed consent from the participants, 360 subjects making up the study group(hypertension) were recruited based on the study's inclusion and exclusion criteria. This was after a pilot study. Severity of hypertension was determined using the Modern Classification of Hypertension by the World Health Organization / International Society of Hypertension grades 1 to 3 where grade 1 corresponds to mild hypertention and grade 3 corresponds to severe hypertension.Subjects were further administered with the study's instruments including the socio-demographic questionnaire, GHQ-12, and WHO Composite International Diagnostic Interview(WHO CIDI).The socio-demographic questionnaire, and GHQ-12 were self-administered while the WHO CIDI was based on interview by the researcher. The data were analyzed using the SPSS version 16 statistical package. Confidence interval was set at 95% while P- value of less than 0.05 was considered statistically significant.*

RESULTS: *The study found a higher prevalence of psychiatric co-morbidity (52.2%) among the hypertensives. Depressive illness had the highest prevalence of 106(39.4%), PLWHIV, 47(29.4%). Also, severity of hypertension was significantly negatively correlated with psychiatric co-morbidity persons with essential hypertension.*

CONCLUSION: *The findings in this study indicate that essential hypertension is a chronic debilitating illness associated with psychiatric co-morbidity, and its severity was significantly associated with higher psychic distress as shown by GHQ-12 scores. The results indicate that the management of hypertension should include attention to their mental health and well beingof these patients in order to enhance the quality of care.*

KEY WORDS: ASSOCIATION, SEVERITY, ESSENTIAL HYPERTENSION, PSYCHIATRIC CO-MORBIDITY, QUALITY OF LIFE, UPTH.

INTRODUCTION

Hypertension is defined as a persistent elevation in blood pressure over an acceptable upper limit of normal values of systolic and diastolic blood pressures. Objectively, hypertension is blood pressure persistently equal to or greater than 140/90mmHg[1].The systolic pressure is the pressure at the peak of the heart's contraction while diastolic blood pressure is that pressure when the heart relaxes. Blood pressure varies from moment to moment and has a diurnal variation, being highest at 10am and lowest at 3am. Hypertension may be of unknown cause called essential hypertension or hyperpiesia, or may have an underlying cause when it is known as secondary hypertension. Hypertension has been classified by the World

Health Organization/International Society of Hypertension into mild, moderate, severe and high normal[1].

Hypertension is a chronic illness that have been ranked among the top leading causes of year of life lived with disability. In Nigeria, essential hypertention has been found to have relatively high prevalence of 10-15%[2] increasing from 11.2% in 1990 to 27.9% in 2010 in rural communities in the Niger Delta, and 44.3% in urban Lagos.[3-6] The high rate of complications and mortality associated with this chronic medical conditions has equally generated enormous public health concern.[7]

In addition, patients with this condition need extensive education, attitudinal change, coping and healthy lifestyle including diet and exercise.[16] The need for these adjustments are imperative considering the immediate changes that usually accompany the diagnoses of this conditions. They include burden of the diseases, regular hospital visits, complications arising from the primary illness, and job adjustment.Due to all these , together with their direct effects on the central nervous system(CNS)[17], no doubt, the patients commonly present with varying degrees of psychopathology[17-23]. They can, either singly or in association with other adverse psychosocial and clinical factors, predispose to psychiatric disorders.

Hypertension has a clear genetic component,[8-12] in addition to adverse environmental factors,[13,17,20,29,46] Secondly, it is worthy of note that severe emotional trauma can directly cause hypertension[41,42]. Furthermore, some of the medications employed in the management of this condition have been associated with inherent neuropsychiatric complications,[19,23,41,63,68,76] either as direct side effects, from drug interactions with psychoactive substances[29-31], from multiple drug therapy or with other concomitantly administered drugs for other cormobid conditions.

Apart from the above aetiological links, a common pathway – sympathetic pathway,[24-27] seems to mediate both essential hypertension and most anxiety disorders. It is equally important to note that baseline adverse psychosocial factors, psychological distress or clearly identified psychiatric conditions have been implicated as predictors of hypertension[13,14,17,20,29] In light of the foregoing, there appears to be a bidirectional relationship between associated psychiatric disorders and these medical conditions. This propensity to be associated with emotional disturbances, with tendency to either predispose to or co-morbid with psychiatric disorders, has further increased the degree to which they affect the psychological well-being and quality of life of the sufferers.[19,23,32-39,41,63,71,72,76] The focus of medical practice has always tended towards relieving physical symptoms, in this case hypertension, which often neglects the huge impact on the psychological well-being, psychiatric co-morbidity and the overall quality of life, often occasioning monumental health consequences.[19,23,39,57,72]

The incidence may be on the increase as a result of increasing urbanization and changing life styles in the world. Hypertension is regarded a major public health problem and it is an important threat to the health of adults in sub-Saharan Africa [2-7,42,45,49,63]. Essential hypertension, a non-communicable disease, is assuming an epidemic dimension, of the nature of a communicable condition, with associated psychiatric comorbidity in the sufferers.Hypertension often requires long term treatment.

There is a growing population of persons with essential hypertension in Nigeria despite all efforts at increasing education and awareness about them,[2-7,49,50-52,53-61] to the extent of attracting the attention of national and international bodies.[62] WHO estimates that non communicable diseases like hypertensive and other heart diseases, stroke, depression and cancers will increase by 60% by 2020, and are likely to triple in Nigeria and other sub-Saharan African countries in the next 50 years.According to the World Health Report, non-communicable diseases accounted for 22% of the

total deaths in the region in the year 2000; cardiovascular diseases alone accounted for 9.2% of the total deaths, killing even more than malaria. [63] Indeed, it has already been projected that up to three quarters of the world's hypertensive population will be in economically developing countries by the year 2025.[15] With increased prevalence rates and the resultant greater economic and health burden, [19,23,39,57,72] Nigeria will feel the impact mostly due to its population size.

Cardiovascular diseases are known to cause a third of all deaths in middle-income countries, [21,59] including Nigeria, with particular predisposition to cardiovascular events like CHD, stroke, which are mainly due to poor control of hypertension. Such cardiovascular events, either alone or with psychiatric comorbidity, will also place a big economic burden on Nigeria since they are expensive to manage.[43-47,50-55] Essential hypertension is a severe, chronic systemic diseases and are becoming increasingly associated with psychiatric comorbidity, as high as 30-60% at present[17,19,23,41,63,76] It carries enormous burden on both the patients and the caregivers.[19,23,39,57,72]

Unfortunately, there appears to be a general underrecognition or late recognition of and in some cases poor attention to the psychiatric component among clinicians [63-66] particularly in this environment. This is often accompanied by increased severity of these illnesses, poor management and prognosis with eventual high mortality rates. Late recognition of mental disorders in hypertensive is related, among others, with diminished coping capacity at diagnosis [63-66], failure at primary prevention, poor antihypertensive, impairment in quality of Iife,[32-39,70,72] greater social burden, overall increases in healthcare costs,[39,57,67,68,72] and also higher mortality.[21,58] Also, psychological distress and lifestyle variables are equally associated with noncompliance. To further compound the problem is the co-existence of other medical conditions like diabetes and obesity, with either of the medical conditions in this study. Their presence further complicates treatment and causes noncompliance [67,68].

This study therefore was aimed at finding the relation between severity of hypertension and the occurrence of psychiatric comorbidity as well as quality of life of persons with hypertension. This, no doubt, would be of immense relevance to the practice of consultation liaison psychiatry in the West African sub-region, contribute to the corpus of knowledge on chronic medical conditions and aid care/service providers to plan better management strategies[59] that will also accord premium to the psychological component and well-being of these patients. Impairments, disabilities and handicaps from chronic conditions may thus be limited and patients' dignity and functional capacity enhanced.

AIM:

The aim of this study, therefore, was to determine the relationship between the severity of hypertension and psychiatric illness among persons with essential hypertension.

METHODOLOGY:

In this comparative cross-sectional study, following ethical approval from the appropriate committee of the hospital and informed consent from the participants, 360 subjects making up the study group(hypertension) were recruited based on the study's inclusion and exclusion criteria. This was after a pilot study . Severity of hypertension was determined using the Modern Classification of Hypertension by the World Health Organization /International Society of Hypertension grades 1 to 3 where grade 1 corresponds to mild hypertention and grade 3 corresponds to severe hypertension.Subjects were further administered with the study's instruments including the socio-demographic questionnaire, GHQ-12and WHO Composite International Diagnostic Interview(WHO CIDI).The socio-demographic questionnaire,GHQ-12 and WHOQOL-Bref were self-administered while the WHO CIDI was

based on interview by the researcher. The data were analyzed using the SPSS version 16 statistical package. Confidence interval was set at 95% while P- value of less than 0.05 was considered statistically significant.

RESULTS:

The study found a prevalence of psychiatric co-morbidity of 66.9% (n=241) among the hypertensives. Depressive illness had the highest prevalence of 106 (29.4%). This was followed by GAD with 59 cases (16.3%), sexual dysfunction 33(9.0%), mixed anxiety and depression 7.8%,substance abuse 2.3%, panic without agoraphobia 0.9%, dysthymia 0.3% (while 5 cases of personality disorders were diagnosed among the hypertensives. See table 1 below.

Table 1: Summary of Psychiatry Diagnosis among subjects with essential hypertension

SN	Psychiatric Morbidity	Total	Essential Hypertension (%)
1	Depressive disorders	106	29.4
2	GAD	59	16.2
3	Sexual Dysfunctions	33	9.0
4	Mixed Anxiety and Depressive disorders	28	7.8
5	Substance Abuse	8	2.3
6	Panic without Agoraphobia	3	0.9
7	Dysthymia	1	0.3
8	Personality Disorders	3	0.9
9	Nil (no psychiatric illness)	119	
	Total	**360**	**100%**

NOTE: Percentages reflect proportions within each medical conditions.

Association of Severity of Hypertension with Psychiatric Co-Morbidity

Also, severity of hypertension was significantly negatively correlated with psychiatric co-morbidity. For mild hypertension, subjects with psychiatric co-morbidity were 49(41.1%) while those without psychiatric morbidity 70(56.5%). For moderate hypertension, there was higher rate of psychiatric co-morbidity, i.e. 114(70.8%) compared with those with mild hypertension. Those with severe hypertension 73(91.3%) had significantly high psychiatric morbidity($p<0.001$). (See table 2)

Table 2: Association of severity of hypertension with psychiatric co-morbidity among patients with essential hypertension

	Total	Psychiatric illness	No Psychiatric illness
Mild SBP=140-159 DBP=90-99	119 (33.1%)	49 (41.1%)	70 (58.8%)
Moderate SBP=160-179 DBP=100-109	161 (44.7%)	114 (70.8.%)	47 (29.2%)
Severe SBP>180 DBP.110	80 (22.2%)	73 (91.3%)	7 (8.7%)
Total	360 (100%)	236	124

Figure 1: Pie chart showing changes in lumbar curve

DISCUSSION

From the study, it was found, that severity of hypertension correlated positively with high rate of psychiatric co-morbidity among patients with (Essential Hypertension). This finding is consistent with many other similar studies [17-19,23,41,63,76] Severity of hypertension is largely determined by its chronicity, late presentation67, lack of treatment or poor adherence68, age or the severity of the impact of environmental stressors and other socio-demorgraphic and clinical correlates. Judging from all these, the severity of hypertension would equally correlate with both severity and number of symptoms, most of which would equally be increasingly disabling, with decline in productivity. As these continue, there will be more increase in blood pressure levels. The illness may therefore impact more psychological trauma with corresponding decrease in psychological well-being and quality of life [17-19,23,32-39,70,72].

The finding in this study of high rate of psychiatric co-morbidity in hypertensive subjects is also consistent with increasing GHQ values[77-79], and where all mean values of GHQ-12 for hypertension were consistently high. This appears that since GHQ is a screening instrument for psychiatric caseness, high GHQ values does not only suggest the likely presence of psychiatric illness, but also gives an indication of its severity [77-79].

The study found depressive illness the most prevalent psychiatric comorbidity among the studied group of patients with essential hypertension. This finding was consistent with other earlier findings[17-19,23,32-39,70,72]. The chronicity of

the medical condition, long duration of use of antihypertensives, disabling symptons including recurrent headache and possible cognitive impairment, limitation of functions, are such enough depressogenic factors[17-19,23,32-39,68,70,72]. Generalized anxiety disorder was the second most prevalent psychiatric comorbidity found in the study[19]. It has been severally established that there exists profound similarity in etiology as well as symptomatology between anxiety disorders particularly generalized anxiety disorder and essential hypertension[24-27]. The amplification of the sympathetic apparatus and subsequent elaboration of epinephrine and norepinephrine have been found to be commom to both.

Hypertension in adults has a high impact on the economy and with consequent low quality of life of individuals[32-39]. The results in this study is consistent with many studies else-where.[32-39] It also agrees with a population based study, which found a lower health status in the hypertensives compared with individuals free from hypertension[39].

The presence of symptoms of hypertension alone appear to be more disabling than, bearing in mind that acute cases were excluded. Severe hypertension causes more symptoms and it is more disabling than mild to moderate hypertension. The physical symptoms of hypertension are largely similar to the physical symptoms of anxiety disorders [24-27], particularly, generalized anxiety disorder, and they tend to be very sensitive to adverse changes in the environment. This could be further supported by the observation in this study that the severity of hypertension correlated more negatively with both higher prevalence of psychiatric co-morbidity as well as quality of life[32-39].

In hypertension, little adverse changes in the environment could affect profoundly the patients who had hitherto remained stable on medications. Such changes may include; change in income level, employment, marital status (prolonged difficulty, disharmony, separation, divorce or widowhood), and poor drug adherence.

The prevalence of essential hypertension was noted to be increasing with age and was about twice higher, in the age groups 40-49 and 50 and above, compared to age group of 30-39, and about 6 times higher compared with age group 20-29. This result is consistent with earlier studies which reported that about 4.3 million Nigerians above the age of 15 years are classified as being hypertensive. Furthermore, the prevalence has been said to be related to age, particularly in females, with a substantial increase occurring after the age of 50.[70] Though essential hypertension commonly starts in middle age, the illness may progressively become worse with attendant incapacitating symptoms that may infringe on the functional capacity of the individual and thereby lowering the quality of life.

The gender distribution among subjects with essential hypertension showed that the female predominated with 60.8%. Although essential hypertension is more common in males, females may have been overrepresented in this study due to two reasons. First, African females tend to have lower blood pressure than males early in life with a reversal of the trend after the age 45-50 years.[69,70]This may be due to hormonal changes associated with the preparation for or actual menopause occurring at this age group, couple with the increasing family and domestic (stressors) responsibilities shouldered by married females in this age group. Interestingly, in this study, there was high prevalence of the married females in both groups. Another probable reason for the predominance of females in this study is that females are more willing and likely to volunteer their symptoms easier than males and consequently tend to have better health seeking behaviors. This has equally been pointed out by another study. Studies have indicated that the ratio of women with hypertension, compared to men increases from 0.6:0.7 at age 30 to 1.1:1.2 at age 65.[69,70]In this study, however, the male to female ratio was 1.0:1.7

The married group was over represented in both disease conditions, particularly for essential hypertension (71.4%). This was consistent with other previous findings [2-6]. This preponderance might be due to low rates of divorce and separation, which may reflect the high predominance of Christianity in the study environment. Furthermore, widows constituted a significant percentage (15%) among the hypertensives, next to the married group. Widowhood, no doubt, hurts and often results in severe emotional trauma, particularly when it is sudden and early in life. More than half of the single subjects (10.6%) in the hypertensive group were above the age of 30 years, many of whom were unemployed. In Africa, due to socio-cultural values, a female not yet married at this age and above calls for concern not only to her but also to her family members. Majority of the separated group were females. Although lower rates were found in this study, both separation and divorce are capable of impacting enormous psychological trauma in affected individuals.

Africans usually seek medical attention mostly when illness has presented with disabling symptoms, and in most cases late, in spite of awareness of the diagnosis2-6. This is particularly more so for essential hypertension. Moreover, cultural factors, poverty and in-accessibility to healthcare facilities often contribute to this delay. This could also explain the over representation of the older age group in the hypertensive patients in this study, who are more superstitious, poor, and with low income capacity and hence unable to seek health care, particularly timely. Furthermore, essential hypertension is a chronic disease and most of the respondents diagnosed over 5-10 years ago are still on maintenance antihypertensive therapy.

CONCLUSION AND RECOMMENDATIONS

The findings in this study indicate that essential hypertension is a chronic debilitating illnesses, associated with psychiatric co-morbidity, and its severity was significantly associated with higher psychic distress. It further results in affectation of the functional capability of the sufferers. This is through either biological, psychological or both pathways.

However, inspite of all these, it appears there is still low level of aware of the psychological impact of these medical diseases particularly among most non- psychiatric clinicians. This often results in poor management and prognosis, and higher mortality. The results therefore indicate that the management of hypertension should include attention to their mental health status and subjective quality of life of these patients in order to enhance the quality of care.

On account of the above, advocacy for a formal integration of functional Liaison-psychiatric practice has become imperative in the management of most chronic medical conditions for optimal benefits of patients and physicians. Early identification of these diseases, and paying prompt attention to the psychological components will, no doubt, go a long way in improving the clinical outcomes of the sufferers.

Furthermore, efforts of both Governmental and Non-Governmental Organizations in the management of chronic health conditions, including communicable and non-communicable conditions should have clear objectives backed by legislation and not on ad hoc basis, as this would guarantee its sustenance.

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