This study investigates the contribution of alexithymia, body mass index, age and gender to essential hypertension. Three hundred and ten patients drawn from the Cardiology Unit, Surgical Out Patients and General Out Patients, Departments of the University of Nigeria Teaching Hospital, Enugu State, South East, Nigeria, participated in this study. They comprised men (156) and women (153) who are aged 20 – 80 years. Toronto Alexithymia Scale (Bagby, Parker, & Taylor, 1994) was used as a measure of alexithymia. Body Mass Index (BMI) was calculated from one’s weight and height. The results show that the body mass index values of the participants range from underweight (17-18.49) to obesity (30 and above). The result of the Hierarchical Multiple Linear Regression Analysis indicate that alexithymia is a significant predictor of essential hypertension (β= .640, t= 10.40, p<.001). BMI was also shown to be a significant predictor of essential hypertension (β= .15, t= 3.33 p < .001). Age also has a significant relationship with essential hypertension (β= .24, t= 5.23 p < .001). However gender did not
predict essential hypertension (beta = -0.05, t= -1.24, p>0.05) The implications of the findings as well as summary of same are discussed.

Keywords: Alexithymia, Body Mass Index, Age, Gender, and hypertension.

INTRODUCTION

Hypertension or high blood pressure, sometimes called arterial hypertension is a chronic medical condition in which the blood pressure in the arteries is elevated. Systolic and diastolic measurements define the maximum and minimum blood pressure levels of an individual. The former refers to the contraction of the heart muscle while the later refers to the relaxation of the heart muscle. Essential hypertension which affects about 95% of the populace is high blood pressure with no obvious underlying medical cause e.g. organic malfunction or related causes. (Disease Dictionary 2013 )

Hypertension has been proved to be one of the major causes of coronary heart disease (CHD) (Grundy, Pasternak, Greenland, Smith, & Fuster, 1999). CHD is a potentially lethal blockage of the arteries that supplies blood to the muscles of the heart and has been noted as one of the leading causes of mortality for both men and women worldwide (Lopez, 1993). In accord with World Health Organization (WHO 2002), the prevalence of hypertension worldwide is about 1 billion and approximately 7.1 million death per year is attributable to hypertension. Recently, in the United States, for instance, the Centre for Disease Control and Prevention (CDC) (2011), reported that about 1 in every 3 U.S. adults have high blood pressure (HBP). The estimate is that about 68 million people in U.S have HBP and about one out of every seven deaths in the U.S. is attributed to hypertension.
Similarly, hypertension and its complications, such as heart failure, stroke, and renal failure, have been reported among blacks all over the world. Some researchers contend that hypertension is the most common cause of cardiovascular disease in the African continent, (Cooper & Rotimi, 1993). It is also a major factor in high adult’s mortality in sub-Saharan Africa (World Health Organization, 2002). A study conducted in Kumasi and Accra in Ghana, indicated that hypertensive renal disease is a common complication among people (Plange-Rhule, Phillips, Acheampong, Saggar-Malik, Cappuccio, & Eastwood, 1999; Mate-Kole & Affram, 1990).

In Nigeria for instance, many studies have been carried out regarding the prevalence of hypertension in some parts of the country. In the Northern part of the country, Abengowe (1987) reported a prevalence of 10% among the adult population. Similar studies at the University of Nigeria Teaching Hospital, Enugu, by Onwubere and Ike (2000) found the prevalence to be 15.2%.

Five years ago another study was conducted in Nsukka, South Eastern Nigeria on the prevalence, detection, treatment and control of hypertension by Ekwunife, Udeogaranya, and Nwatu, (2010). They examined, the prevalence of hypertension, awareness, treatment, and control (outcomes) in 756 adult participants (364 men and 392 women) aged 18 years and above. Prevalence of hypertension was found to be 21.1%, with men having higher prevalence of high blood pressure (BP) compared to women.

Some researchers have associated certain factors with hypertension like migration from rural area to urban or semi-urban areas (urban pull), malnutrition, which includes high intake of saturated fat, animal protein, sodium, and vitamin A, ageing, cholesterol, triglycerides, high body mass index (BMI) and central obesity (Van Rooyen, Kruger, Huisman, Wissing, Margetts, Venter et al. (2000). Some dietary factors have also been associated with hypertension; such dietary factors include increased salt (sodium) intake and the decrease in fruit and vegetables (potassium), while a higher intake of alcohol products, particularly by men, plays a role. (Seedat, 1996).

In addition, psychological factors such as psychological stress and distress (Gasperin, Netuveli, Dias-da-Costa, & Pattussi, 2009); type A behaviour pattern (Lyness, 1993 in Carson,
Butcher & Minneka, 2000); hostility, depression and anxiety (Yan, Liu, Matthews, Daviglus, Ferguson, & Kiefe, 2003; Steptoe, Brydon, & Kunz-Ebrecht, 2005), have all been associated with hypertension.

Although, so many factors had been linked to essential hypertension, there has been a dearth of studies in the contribution of such factors like alexithymia to essential hypertension. In the Western world, however, the relationship between alexithymia and hypertension has been documented (Todarello, Taylor, Parker, & Fanelli, 1995; Waldstein, Kauhanenc, Neumanna, & Katzelm, 2002).

However, none of these studies associating alexithymia and hypertension has been conducted in Nigerian society. Therefore, since hypertension is one of the most common ailments among the blacks particularly Nigerians, we are of the view that alexithymia as a personality construct could be associated with hypertension in present day Nigeria. Alexithymia is a personality construct that signifies reduced ability to identify and describe feelings, a limited imagination, and externally oriented thinking.

The concept of alexithymia was originally introduced in 1973 by Peter Sifneos on the basis of observations made in psychosomatic patients (Sifneos, 1973). He coined the term to describe the lack of emotional skills in psychosomatic patients (Sifneos, 1973). Alexithymia comes from the Greek word α- (lack), lexis- (word) and thymos- (mood, feeling or emotion), alexithymia literally means “without words for emotions”.

Alexithymic individuals have difficulty expressing emotions in words; they often confuse physical sensations that often have some relationship with emotion. They have few fantasies and dreams, and their thought content is dominated by details of events in their environment (Kellner, 1990). In the words of Lumley, Gustavson, Partridge, & Labouvie-Vief, (2005), individuals with alexithymia have a restricted fantasy life, poor imagination, limited dreaming, and preference for externally focused thoughts rather than psychological introspection.

Some alexithymic individuals may however, seem to contradict these characteristics because some individuals with alexithymia are capable of experiencing chronic dysphoria or manifest outbursts of crying or anger (Krystal, 1988; McDougall, 1985; Taylor, 1997). However, eliciting a response from them about some questions usually reveals that they lack the ability to
describe their feelings sufficiently or seem confused by questions inquiring about specifics of feelings (Taylor, 1997).

**Alexithymia and Hypertension**

The relationships between alexithymia and hypertension has been researched in literature for instance Jula, Salminen, and Saarijärvi, (1999) in their study found that alexithymia is associated with elevated blood pressure independent of sodium and alcohol intake, body mass index, and physical fitness. The study comprised of two hundred and thirty-seven newly diagnosed yet untreated hypertensive men and women, 35 to 54 years of age and 146 normotensive men and women from the city of Turku and 3 neighbouring municipalities in southwestern Finland. The inclusion criteria were a systolic or a diastolic blood pressure consistently in the range of 180 to 220 mm Hg or 100 to 120 mm Hg, respectively, as measured within the primary health care. The study was designed to find out whether psychological distress symptoms, anger expression, and alexithymia are associated with elevated blood pressure and whether the possible associations are independent of sodium and alcohol intake, body mass index, and physical fitness.

The independent attributes of mean arterial pressure were studied by multivariate regression analyses after combining the subjects in the hypertensive and control groups. Three questionnaires were used: the Brief Symptom Inventory (BSI-37), a 31-item version of the Spielberger State-Trait Anger Expression Inventory (STAXI), and the Toronto Alexithymia Scale (TAS-26). Total scores of the TAS-26 were higher ($P<0.001$) in hypertensive men and women than in their normotensive control subjects. Prevalence of alexithymia was found to be higher among hypertensive men (57%) and women (46%) than among normotensive men (18%) and women (9%). Only 4% of hypertensive men and 5% of hypertensive women but 54% of normotensive men and 73% of normotensive women were not alexithymic.

They found no differences between the study and control groups in psychological distress symptoms, including anxiety, depression, and hostility, or in anger expression. In multivariate regression analyses, higher age, male gender, higher sodium intake, lower physical fitness, and alexithymia were independently and highly significantly ($P<0.01$ for male gender, $P<0.0001$ for other variables) associated with increased blood pressure, explaining altogether
39.5% of the cross-sectional variation in mean arterial pressure. They therefore concluded that alexithymia, that is, poor ability to experience and express emotions, is associated with elevated blood pressure independent of sodium and alcohol intake, body mass index, and physical fitness.

Waldstein, Kauhanen, Neumann and Katzel, (2002) studied Alexithymia and cardiovascular risk in older adults. One hundred and two (102) older adults (76% male; 92% women) with age range 53-83 participated in the study. All volunteer participants completed a packet of self-report measures with satisfactory psychometric properties. The 26-item Toronto Alexithymia Scale (TAS) (Taylor, Ryan, &Bagby, 1985) was used to assess alexithymia. A two way repeated measures of ANOVA revealed significant main effects of alexithymia group for diastolic blood pressure reactivity (p<0.05).

Alexithymics displayed significantly greater diastolic blood pressure responses to the mental stress tasks than did non-alexithymics. Simple effects analyses indicated that alexithymics displayed significantly greater SBP (p<0.05) and DBP (p<0.01) responses to the Anger Recall task than did the non-alexithymics. It was concluded that alexithymics displayed significantly greater blood pressure responses to anger provocation and tended to have a greater percent body fat compared to non-alexithymics.

Todarello, Taylor, Parker and Fanelli,(1995) studied the association between alexithymia and essential hypertension in a sample of 114 hypertensive patients using the well-validated twenty-item Toronto Alexithymia Scale. Alexithymia was also assessed in a group of 113 general psychiatric outpatients and in a group of 130 normal adults. A rate of 55.3% of alexithymia was found in the hypertensive group compared with significantly lower rates of 32.7% in the psychiatric group and 16.3% in the normal controls.

Interestingly, the hypertensive patients scored significantly higher than the normal adults on all three factors of the TAS-20, not just on the factor assessing difficulty communicating feelings. The results support the view that a high prevalence of alexithymia may be found among patients with disorders that were categorized in the past as "classical" psychosomatic diseases. They therefore reason that there may be a deficit in the cognitive processing and modulations of emotions which may predispose individuals with alexithymia into a state of heightened sympathetic arousal that are conducive to the development of essential hypertension.
Body mass index, age and gender are some of the demographic variables that have been linked to essential hypertension. The Center for Disease Control (CDC) defined body mass index (BMI) as a measure of weight adjusted for height, calculated as weight in kilograms divided by the square of height in meters (kg/m²). They noted that although BMI is often considered an indicator of body fatness, it is a surrogate measure of body fat because it measures excess weight rather than excess fat.

However, studies have shown that BMI levels correlate with body fat and with future health risks. High BMI predicts future morbidity and death. Therefore, BMI is an appropriate measure for screening for obesity and its health risks. BMI have been associated with essential hypertension by some researchers (Van Rooyen, Kruger, Huisman, Wissing, Margetts, Venter et al. 2000; Gupta, Agrawal, Sehajpal, and Goel, 2011). In the measure of BMI, 30 and above indicates that the individual is obsessed. Obesity is a serious medical condition that has been long associated with essential hypertension (Kotsis, Stabouli, Zoe Rizos, & Parati, 2010).

The relationships between age and essential hypertension have long been identified by some researchers. In accord with the National Academy article on ‘Aging Society’ (2000), states that hypertension generally affects people later in life. They contend that almost two-thirds, 62 percent of the population with hypertension are age 55 and older. (Pestana, 2002) contend that systolic and diastolic pressure increased with advanced age in both men and women. He noted that more than 50% of adult with essential hypertension were aged 65 and above. Similarly, other researchers (Cappuccio, Micah, Emmett, Kerry, Antwi, and Martin-Peprah, 2004; Van Rooyen, Kruger, Huisman, Wissing, Margetts, Venter et al. 2000) also found that hypertensive cases heightened with increase in age.

Research has also established a relationship between gender and essential hypertension for instance, Gupta, Agrawal, Sehajpal, and Goel, (2011) found that essential hypertension was more prevalent in male (59.2%) than in female (40.8%). Similarly, in a study assessing the prevalence, detection, management, and control of hypertension in Ashanti, West Africa, Cappuccio, et al (2004) reported that the prevalence of hypertension was higher in men than women. Some other studies of hypertension found that there was a higher prevalence of hypertension in men than women in Nigeria and urban Cameroon, but in rural Cameroon the
prevalence was higher in women (Cooper, Rotimi, Ataman, McGee, Osotmehin, & Kadiri, et al., 1997).

There seems to be contradicting findings with regard to gender and essential hypertension. While some studies found that hypertension is more prevalent in male (Van Rooyen, et al. 2000; Cappuccio, et al. 2004; Gupta, Agrawal, Sehajpal, & Goel, 2011), few others found that hypertension is more prevalent in women but particularly in elderly women. For instance, the National Academy on an Aging Society reported that hypertension is more prevalent in elderly women than elderly men. Their findings show that, about two third (63%) of hypertensive elderly population are women. As a follow-up to this line of thought they noted that while men and women are more likely to develop hypertension before age 65, the gap widens in later years.

The reason is obvious: In the words of (Pestana, 2002). “The rise in blood pressure is steeper in men than in women, but after menopause women show a greater rise and reach levels that are higher than in men”. This indicates that although hypertension is higher in male, it is however higher in elderly women than elderly men.

In the light of the foregoing, the aim of this study is to examine the relationship that exists between alexithymia, BMI, age, gender and essential hypertension. The following hypotheses will be tested:

1. Alexithymia will not have a significant relationship with essential hypertension.
2. BMI can not predict essential hypertension.
3. Age will not have a significant relationship with essential hypertension.
4. Gender will not have a significant relationship with essential hypertension

**Method:**

**Participants**

Three hundred and ten (volunteer) patients drawn from the Cardiology Unit (n=230), Surgical Outpatient (n=50) and General Outpatient Department (GOPD) (n=30) of the University of Nigeria Teaching Hospital participated in this study. They comprised one hundred and fifty-six (156) patients, (i.e. 50.3%) men and one hundred and fifty three (153) patients (i.e. 49.4%) women whose
ages ranged from 20 years to 80 years with a mean age of 50.45. As regard their Body Mass Index (BMI), only one patient (i.e. 0.3%) recorded underweight (BMI range= 17-18.49), forty-four (44) patients (i.e. 14.2%) had normal weight (BMI= 18.5-25), one hundred and twenty-nine (129) patients (i.e. 41%) were considered over weight (BMI= 25.5-27.49) while one hundred and thirty-six (136) patients (i.e. 43.9%) had their body mass index within the range considered to be obesity (BMI=30 and above).

In terms of their educational status 42 patients (i.e.15.5%) were reported to have had no formal education, 82 patients (i.e. 26.5%) had primary education, 76 patient (i.e. 24.5%) had secondary education while 110 patients (i.e. 35.5%) had tertiary education. In terms of their Occupation, 77 patients (i.e.24.8%) were traders, 87 patients (i.e. 28.1%) were civil workers, 66 patients (i.e. 21.9%) reported that they are skilled workers, 40 patients (i.e. 12.9%) were farmers, while 40 patients (i.e.12.9%) indicated no particular occupation. As regards their marital status, two hundred and thirty-four patients (i.e.75%) of the participants were married, forty-nine patients (i.e.15.8%) were single while twenty-seven patients (i.e.8.7%) were widows and widowers.

**Instrument:**

Two instruments were used for the study namely: Toronto Alexithymia Scale (TAS-20) (Bagby, Parker, & Taylor, 1994), and Mercury Sphygmomanometer and Stethoscope.

**Toronto Alexithymia Scale (TAS-20)** (Bagby, Parker, & Taylor, 1994)

The Toronto Alexithymia Scale was used as a measure of alexithymia. The TAS is a 20-item scale developed by Bagby, Parker, and Taylor, (1994). The TAS-20 has 3 sub-scales namely: difficulty describing feelings, difficulty identifying feeling and externally-oriented thinking sub-scale. Difficulty describing feelings sub-scale is used to measure difficulty describing emotions commonly found among alexithymic individuals. It has five items (5) – 2, 4, 7, 12, 17. Difficulty identifying feeling sub-scale is used to measure difficulty identifying emotions. It has seven (7) items – 1, 3, 6, 11, 9, 13, 14.

Externally-oriented thinking sub-scale measures the tendency of individuals to focus their attention externally. It consists of 8 items – 5, 8, 10, 15, 16, 18, 19, 20. Items are rated using a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Five items were
scored in reversed direction (items 4, 5, 10, 18 and 19). The total score ranges from 20 to 100 points with high scores indicating high alexithymia.

In line with the set rules of Toronto Alexithymia scale, scores equal or less than 51 indicates non-alexithymia, scores equal or greater than 61 indicates alexithymia, whereas scores of 52 to 60 shows possible alexithymia. The total alexithymia score is the sum of responses to all 20 items, while the score for each sub-scale factor is the sum of the responses to that sub-scale.

Together, the TAS-20 demonstrates good internal consistency (Cronbach’s alpha = .81). The reliability test results (Cronbach’s alpha) of the three factors of TAS-20, difficult identifying feelings, difficult describing feelings and external oriented thinking read as follows .86, .71, and .61, respectively. For the pilot study, 62 participants were drawn from three hospitals in Nsukka namely: Shanahan hospital, University of Nigeria Medical Center and Good Shepherd Hospital.

The coefficient reliability of the entire items of alexithymia scale with the present participant is \( r = .78 \). While the coefficient reliability for the three sub-scales with the present sample were \( r = .71, .56 \) and .56 for difficulty identifying feelings, difficulty describing feelings and externally oriented thinking respectively. In addition, because some participants may not be literate enough to respond to the English version of the scales, the scale was translated in both forward and backward direction in native language (Igbo) through the help of two experts in the department of linguistics and foreign language.

**Mercury Sphygmomanometer and Stethoscope**

Mercury Sphygmomanometer and Stethoscope (Accosson made in England) were employed to measure the blood pressure of the participants. The instrument was used to obtain both their systolic and diastolic blood pressures.

**Procedure**

The approval of the study was done by the Ethical Committee of the University Teaching Hospital (UNTH) Enugu through an ethical clearance letter to the team. The following units were used: the Cardiology Unit, Surgical Out-Patient Unit and General Out-Patient Department. In each of the units, and department permission was granred by their respective Heads, for the conduct of the research. In these units, the doctors on duty helped to get the current systolic and diastolic values of the volunteer participants, using sphygmomanometer and stethoscope which
was recorded on the questionnaire. The researchers, with the help of four research assistants administered the questionnaires to the patients individually in clinical interview. The illiterate patients were sufficiently guided by the researchers and the research assistants in completion of the forms.

In addition, the weight (Kg) and height (cm) measures of the participants were assessed by the researcher and the research assistants. This was considered necessary in order to get the body mass index of each of the participants. The total number of the copies of the questionnaires distributed are three hundred and forty (340). A total of two hundred and eighty five (285) patients were on admission in the two cardiology units (cardiology units Mondays and Fridays) of the UNTH, but only two hundred and fifty (250) patients volunteered to fill the questionnaire. Nineteen (19) copies out of the 250 copies of the questionnaire, were discarded due to wrong entry. This is as a result of the fact that 19 volunteer patients who filled the form independently, misunderstood the instructions in the document. The outcome of this is a 92.4% return rate.

In surgical Out-Patient department, fifty copies of questionnaire were distributed. Six (out of the fifty) copies of the questionnaire were discarded. This puts it at 88% return rate. In General Out-Patient Department, thirty copies of questionnaire were distributed but five copies were discarded thus leaving the total at 83% return rate. The total number of copies of the questionnaire recovered and used for scoring and analyses are three hundred and ten (310), representing 91% of the total number of the questionnaire distributed. It took fifteen days for the researcher to complete the exercise.

**Design/ Statistics**

The design of this study is Cross-Sectional Design. A hierarchical multiple linear regression was used as statistical package for data analysis. The three independent variables: distress tolerance, alexithymia and anger were regressed on mean artery pressure (MAP) (Diastolic blood pressure + 1/3 Pulse pressure) which served as the dependent variable.(see appendix for results discussed below)

Results from the inter- Corelation among study variables show that age, BMI, gender, and alexithymia are significantly related to essential hypertension. Age had a correlation coefficient
(r) value of .41 and significant at p<.01. Body mass index was also shown to be significant. The correlation coefficient (r) value is .33, and was significant at p<.01. Gender also had a correlation coefficient (r) value of -.15 and was shown to be significant at p<.01. The correlation coefficient (r) value for alexithymia is .54 and was significant at p<.01.

To further test the hypotheses of this study, hierarchical multiple linear regression analysis was conducted to determine the relationship between alexithymia, body mass, gender, and essential hypertension. (see appendix for results discussed below)

The results from the Hierarchical Multiple Regression Analysis show that age, body mass index, alexithymia are significant predictors of essential hypertension. Age is a significant predictor of essential hypertension: β = .24, t = 5.23, p <.001. This suggests that the older the age of a person, the greater chances of developing essential hypertension. Body mass index was also found to be a significant predictor of essential hypertension: β = .15, t = 3.33, p <.01 suggesting that the higher the body mass index, the greater the chances of developing hypertension. The results also show that alexithymia significantly predicted essential hypertension: β = .64, t = 10.40, p <.001. This indicates that the higher the alexithymia, the higher the essential hypertension.

Discussion

The study examined the predictive value of alexithymia, body mass index, age and gender on essential hypertension among patients of the University of Nigeria Teaching hospital, Enugu. The findings show that all the predictor variables except gender were significant predictors of essential hypertension.

The results of the study show that alexithymia was a significant predictor of essential hypertension. Table 2 of multiple linear regression indicates that for every one standard deviation increase in alexithymia, essential hypertension increased by .64 (β) of a standard deviation. This indicates that the higher the alexithymia, the higher the essential hypertension, suggesting that individuals who are alexithymic were more prone to essential hypertension compared to non-alexithymic individuals.

Thus, the first hypothesis which stated that alexithymia will not have a significant relationship with essential hypertension is hereby rejected. The findings regarding alexithymia and essential hypertension is consistent with previous studies (e.g. Todarello, et. al. 1995; Jula,
et. al 1999; Waldstein, et. al. 2002; Grabe, et.al. 2010) which found that alexithymia has a significant relationship with essential hypertension. It will be noted that the core features of alexithymia are well marked difficulty in identifying and describing feelings. This seems to be the reason why alexithymia has a significant relationship with psychosomatic illnesses, particularly essential hypertension.

This was supported by some researchers (eg. Nemiah&Sifneos, 1970, Sifneos, et. al. 1977), who suggested that the reason for the association between alexithymia and psychosomatic illnesses, is that the patient’s inability to express emotions appropriately leads to a misdirection of libidinal activity which causes physical damage.

Similarly, among some theories describing the cause of alexithymia including neurobiological, psychological theories, sociocultural; the psychological theories seem to explain some possible reasons for alexithymia and its relationship to some psychological disorders. In accordance with the psychological theories, individuals who grow up in an emotionally poor and less-stimulating environment or who experience an immense psychological trauma later in life may be susceptible to develop alexithymia (Krystal, 1988).

Regardless of its cause, some researchers (Taylor, 1997) have suggested that alexithymia reflects a deficit in cognitive processing and emotion regulation. This reduced ability to be conscious of one’s emotions may make individuals with alexithymia vulnerable to continuous stress.

The result of the study also shows that body mass index has a significant relationship with essential hypertension. Table 2 of multiple linear regression indicates that for every one standard deviation increase in body mass index, essential hypertension increased by .15 (β) of a standard deviation. This implies that the higher the BMI, the higher the essential hypertension.

Thus, the second hypothesis which state that BMI will not have a significant relationship with essential hypertension is hereby rejected. This suggests that people with high BMI are more prone to essential hypertension than those with low BMI. This is supported by the previous research (Gupta, et. al. 2011; Van Rooyen, et al. 2000; Jula et. al. 1999) which established that BMI has a strong relationship with essential hypertension.
Studies have shown that BMI levels correlate with body fat and with future health risks including hypertension (CDC). Obesity which is measured as the BMI score of 30 and above has been noted as a serious medical condition that has been associated with essential hypertension (Kotsis, et. al. 2010). In the same vein, age is also shown to be a significant predictor of essential hypertension. The result of the study showed that high blood pressure (hypertension) increases with age. Thus the third hypothesis which states that age will not have a significant relationship with essential hypertension is hereby rejected. This finding is in consistence with some other empirical works in the area. Pestana, (2002) which found that age is strong predictor of essential hypertension.

On the other hand, gender did not show any significant relationship with essential hypertension. Thus, the fourth hypothesis was accepted. This is at variance to the some of the previous findings which found that hypertension is more in male than in female (Cappuccio, et.al. 2004; Gupta, et. al, 2011). However, other researchers found that hypertension is prevalent in elderly female than elderly male (National Academy on an Aging Society, 2000).

Implications of the Findings

In a society bedeviled with the menace of hypertension and its related adverse health complications such as heart attack, stroke and heart failure, the result of the study has far reaching implications for the contemporary Nigerian society. The present findings that Alexithymia, Body mass index, Age and Gender have strong relationship with essential hypertension could be of great help to the scientific community, especially to medical practitioners who have a daily encounter with hypertensive patients.

There is need to understand the construct of alexithymia and its relationship with hypertension. Apart from medical diagnosis, proper psychological examination and assessment can unravel some underlying psychological factors of personal wellbeing that are key indicators of hypertension. In addition to the drug therapy, psychological treatment and intervention such as supportive therapy could be of great benefit to individuals who find it extremely difficult to identify or describe their feelings effectively.

Supportive Therapy (ST) is a standardized psychological treatment that encourages patients to express and evaluate their life situation. The goal of ST is to promote emotional expression. It
provides a space for participants to release their feelings and share their thoughts. When a person expresses his or her feelings positively, it will help to reduce the burden of unexpressed emotions which somehow may find an outlet in some other psychosomatic conditions, such as hypertension or psychological disorders.

Cognitive behavior therapy, and training in progressive deep muscle relaxation could also be implored to help patients with hypertension. To this effect therefore, there is need for the medical practitioners and clinical psychologists to collaborate in their effort to bring proper management and bring relief to majority of individuals living with hypertension.

**Suggestions for Future Studies**

The South East of Nigeria is the most densely populated region in Nigeria (the most populous black nation in the world) was chosen for the research. Future studies can be carried out in other regions of the country in non-governmental or well established health institutions/hospitals located in different geo-political zones of the country. This will help to create greater percentage of awareness of the psychological correlates of hypertension. Further studies can cite this work using empirical methods where some variables such as drugs or nature of the drugs could be controlled. More so, clinical psychologists who are research oriented can extend their research with more psychological variables that are linked to these psychosomatic illnesses prevalent among adult people.

**Summary and Conclusion**

The study examined the relationship between alexithymia, body mass index, age, gender and essential hypertension. All the variables studied except gender were found to be significant predictors of essential hypertension. In view of the outcome of this research which shows that psychological variables are key predictors of hypertension as established by the present study, we are of the opinion that a collaboration between the medical practitioners and the clinical psychologists will go a long way to stem the inherent dangers posed by high mortality rate and acute health complications attributed to hypertension in the contemporary Nigerian society.
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APPENDIX

Table 1
Descriptive Statistics and Inter-Corelation among study variables
Alexithymia, Body mass index, Age, and Gender

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<th>4.</th>
<th>5.</th>
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<td>MAP</td>
<td>106.76</td>
<td>20.32</td>
<td>-</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>49.43</td>
<td>15.32</td>
<td>.41**</td>
<td>-</td>
<td></td>
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<tr>
<td>BMI</td>
<td>3.27</td>
<td>.71</td>
<td>.33**</td>
<td>.24**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.51</td>
<td>5.0</td>
<td>-.16**</td>
<td>-.21**</td>
<td>-.03</td>
<td>-</td>
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<td>.17</td>
<td>-2.0**</td>
<td>-.08</td>
<td>-</td>
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</table>

Note: **p<.01, p <.05,. MAP- mean arterial pressure, Gender male=0 female=1, BMI- Body Mass Index, underweight =1, normal =2, overweight =3, obesity 4.
Table 2: Hierarchical Multiple Linear Regression of Alexithymia, BMI, Gender and Mean Arterial Pressure.

Steps & Variables.

<table>
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<th>R sq.change.</th>
<th>Step 1</th>
<th>beta</th>
<th>t.</th>
<th>R.</th>
<th>R sq.</th>
<th>Adjusted R sq.</th>
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</table>

N.B. R sq. -R raised to the power of 2, *p < .05, **p < .001, BMI - body mass index
1. Predictors: (constant) Age, BMI, Gender
2. Predictors: (constant) Age, BMI, Gender, Alexithymia,