**ABSTRACT**

**Introduction:** Non-adherence to medication in hypertension is a major problem worldwide. Adherence to medications among adult hypertensive patients ranges between 50% to 72% in the developed countries and 23% to 65% in most African countries including Nigeria. At the beginning of this study the drug adherence rate in both study groups was only 27%. This is below the World Health’s organisation recommended drug adherence rate of 80-85% for chronic diseases like hypertension and this has led to poor blood pressure control and complications of hypertension.

**Objectives:** To determine the effect of mobile phone short message service (SMS) on drug adherence among adult hypertensive patients with a view to recommending such intervention to achieve optimum blood pressure control.

**Study Design/Setting:** A randomized controlled trial involving 78 adult hypertensive patients aged 18 years and above on antihypertensive drugs attending the General Out-patient Department of Jos University Teaching Hospital, Jos.

**Methods:** Subjects were randomly allocated to the control and the intervention groups. The intervention offered was weekly SMS reminders over a 12 weeks period. Data collected from the subjects include socio-demographic data, medical and drug history. Drug adherence rate was measured using the modified Morisky adherence scale (MMAS) questionnaire that was self-administered. Focused physical examination was done including blood pressure. Subjects were followed up monthly over 12 weeks during which measurements were repeated.

**Results:** There was a higher mean change in Morisky score at the end of 12 weeks in the intervention group of -3.31 versus -0.98 in the control group. This was statistically significant (t-test=12.67, p<0.001). At the end of 12 weeks, there was a higher drug adherence rate in the intervention group of 88.9% following weekly SMS reminders and drug adherence counselling compared to 54.1% in the control group that had only drug adherence counselling. This difference in drug adherence rate between the two groups was statistically significant ($\chi^2=5.9932$, p=0.015).
There was also a higher mean reduction in systolic blood pressure of -22.99mmHg and diastolic blood pressure of -19.09mmHg in the intervention group compared to -7.26mmHg systolic blood pressure and -5.29mmHg diastolic blood pressure in the control group. The mean SBP reduction between the two groups was statistically significant (t-test=8.85, p=<0.001) and the mean DBP reduction between the two groups was also statistically significant (t=9.17, p=<0.001).

There was no statistical significant difference in the proportion of missed hospital appointments between the intervention and control group at the end of 12 weeks; 7.7% versus 17.9% respectively ($\chi^2$=1.84, p=0.18). However, the intervention group had less proportion of study participants with missed hospital appointments at the end 12 weeks following weekly SMS reminders.

All data was analysed by Epi info version 3.5.1 2011 (Centre for Disease control and Prevention, Atlanta Georgia, USA).

**Conclusion:** Weekly SMS reminders along with drug adherence counselling led to significant improved drug adherence rate and mean reduction in blood pressure among adult hypertensive patients attending General Out-patient Department of Jos University Teaching Hospital. There were also a less proportion of subjects with missed hospital appointments following the intervention at the end of 12 weeks.

SMS technology proved to be an important tool in improving the clinical outcome of hypertensive patients in this study.