

The Effect of Brief Motivational Interviewing on Blood Pressure Control among Adult Patients with Hypertension attending a Tertiary Hospital Primary Care Clinic in North-Central Nigeria: A Randomised Controlled Trial

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ABSTRACT

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Background - Several clinical trials have shown brief motivational interviewing improves blood pressure control in patients with hypertension. However, the research on the effect of brief motivational interviewing in adult patients with hypertension in Nigeria remains limited.

Methods - This study was a secondary analysis of a single-blind randomized controlled trial (PACTR202512914551775) among 132 adult patients with hypertension attending the General Outpatient Clinic (GOPC) of the Jos University Teaching Hospital (JUTH), Jos, Nigeria. The intervention offered was brief motivational interviewing delivered four-weekly in a structured format for 12 weeks. The prespecified secondary outcome was blood pressure control at 12 weeks. The primary outcome (medication adherence) has been published elsewhere. Intention-to-treat analysis was done using SPSS version 19 with level of significance set at $p < 0.05$.

Results - Baseline blood pressure control was 47.0% and 65.2% for the intervention and control groups respectively. At the end of the study, there was a 25.8%-point absolute difference between the groups (OR=24.3; 95% CI: 3.1-188.9; $p < 0.001$) in favour of the intervention group. There was a 51.5%-point absolute increase in blood pressure control within the intervention group (Mc Nemar's $p < 0.001$). The between-group difference in mean SBP and mean DBP was -5.87 mmHg (95% CI: 1.17-10.57; $p = 0.015$) and -3.79 mmHg (95% CI: 0.85-6.74; $p = 0.012$) respectively in favour of the intervention group.

Conclusion - Brief motivational interviewing may be a useful adjunct to routine care in the treatment of adult patients with hypertension in primary care.

Keywords: Blood pressure control, hypertension, motivational interviewing, primary care, Nigeria

INTRODUCTION

Hypertension is defined as either a systolic blood pressure (SBP) ≥ 140 mmHg or diastolic blood pressure (DBP) ≥ 90 mmHg based on the average of two or more properly measured, seated blood pressure (BP) readings on each of two or more office visits.¹ If SBP and DBP fall into different categories, the category associated with the higher of the two blood pressures is applied.¹ According to the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7), hypertension for adults is classified as stage 1 hypertension (140-159/90-99mmHg) and stage 2

hypertension ($\geq 160/100$ mmHg).¹ This classification is reiterated in the Eighth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 8)² and recommends that all people with stages 1 and 2 hypertension be treated.¹ The relationship between BP and the risk of cardiovascular disease (CVD) events is continuous, consistent, and independent of other risk factors.¹ The higher the BP, the greater the chance of a heart attack, heart failure, stroke, and kidney disease.¹ Nearly 80% of deaths due to CVD occur in low-and middle-income countries (LMIC).³ It is estimated that by 2030, mortality due to CVD in the adult population

will be up to 23 million with about 85% of such deaths occurring in LMIC.⁴

Antihypertensive medications can effectively lower BP and have been found to significantly reduce the rates of stroke, cardiovascular death, coronary heart disease and total mortality by 30%-40%, 26%-28%, 20%-21%, and 13%-16% respectively.⁵ Despite advances in medication treatment, hypertension is inadequately controlled worldwide.⁶ In the general population without diabetes mellitus or chronic kidney disease, hypertension is considered controlled when SBP is < 140 mmHg and DBP is < 90 mmHg in adults < 60 years of age and, when SBP is < 150 mmHg and DBP is < 90 mmHg in adults ≥ 60 years of age.² For patients with diabetes mellitus or chronic kidney disease, hypertension is controlled when SBP is < 140 mmHg and DBP is < 90 mmHg irrespective of age.² The global estimates of BP control rates range from 20% to 50%⁷ while in Africa, over half of patients with hypertension have poor BP control.⁸ In Nigeria, BP control rates of 9%⁹ to 53.3%⁷ have been reported. Most hypertensive patients in Nigeria have inadequately controlled BP, leading to an increased risk of complications.^{6,10}

Low BP control rates have been found to be related to the lack of disease knowledge and weak self-management ability among patients with hypertension.¹¹ By intervening in patients' behaviour and disease cognition, patients' initiative can be improved and self-management ability enhanced.¹¹ Motivational interviewing (MI) has been shown to be effective in increasing patients' self-efficacy (their confidence in managing their condition), ensuring treatment adherence, regulating blood pressure and enabling disease management.^{11,12} Patients could benefit from MI to elicit their internal motivation for changing unhealthy behaviours so as to improve their clinical outcomes.¹³ Motivational interviewing is a patient-centred counselling style which has been found to enhance physician-patient communication and improve clinical outcomes in patients with chronic diseases including hypertension.^{14,15} True MI requires extensive training and supervision, but a brief version of MI was developed for use by health care providers and structured for both hospital bedside and outpatient settings.¹⁵ Brief MI takes five to 15 minutes to carry out and it can be delivered through individual face-to-face consultation, telephone, televideo, computer or print applications, with groups or families.^{16,17}

Although few intervention studies involving MI have been reported from Nigeria, the research on brief MI-based interventions on adult patients with hypertension remains limited. This study sets out to test the effect of brief MI on blood pressure control among adult patients with hypertension attending a primary care clinic of a tertiary hospital in a resource-poor environment in North-Central Nigeria, in order to offer recommendations for an effective strategy in improving blood pressure control and its benefits in these patients. We hypothesized a greater effect of brief MI on blood pressure control compared to usual care at 12 weeks.

METHODS

Study design

The study was part of a larger study on The Effect of Brief Motivational Interviewing on Medication Adherence among Adult Patients with Hypertension attending a Tertiary Hospital Primary Care Clinic in North-Central Nigeria: A Randomised Controlled Trial.¹⁸ The study was a single- blind, parallel-group randomized controlled trial registered with the Pan African Clinical Trial Registry with trial registration no PACTR202512914551775. It comprised an intervention group that received four-weekly brief MI-based medication adherence counselling and structured medication adherence counselling (usual care) and a control group that received only structured medication adherence counselling (usual care). The study participants were blinded in this study. The study was conducted between September 2016 and January 2017. It was reported using the CONSORT 2010 checklist for reporting a randomised trial.

Study setting

The study was carried out at the General Outpatient Clinic (GOPC) of the Jos University Teaching Hospital, Jos, located in Jos North Local government area of Plateau State, Nigeria. The participants were patients ≥ 18 years on medications for the treatment of systemic hypertension who met the inclusion criteria and gave written informed consent. Inclusion criteria included a diagnosis of hypertension made at least three months prior to the conduct of the study and patients who had been on at least one antihypertensive medication for at least three months in the clinic to ensure familiarity with prescribed medications. Exclusion criteria included patients with hypertension and co-morbidities (diabetes mellitus, heart failure, stroke, chronic kidney disease, vascular cognitive impairment); patients who required admission; patients who resided outside Jos and a second member of a household in which a member had been included in the study.

Study Population and Sampling Strategy

All adult patients with hypertension attending the GOPC over an eight-week period were screened to get eligible patients. One hundred and thirty-two (132) participants were voluntarily recruited into the study by the researcher using systematic random sampling.

The sample size for the study was calculated using the formula for comparing two proportions in two independent study samples (controlled study) considering both alpha and beta errors.¹⁹ With 80% power and level of significance $\alpha = 0.05$, 60 patients were needed in each group, for a total of 120 patients, to detect the expected between group difference in medication adherence of 25%. (The parent trial was powered for medication adherence which was the primary outcome). Accounting for a 10% attrition rate, 66

patients were estimated to be needed in each group for a total of 132 patients. Recruitment and randomization occurred on the same day. The random allocation sequence was generated by the study statistician who queried the Statistical Package for the Social Sciences (SPSS) software to generate two groups of 66 random numbers from the total sample size of 132. A mixture of even and odd numbers was generated to constitute each of the two groups. Through balloting, one group was assigned as control (C) and the other intervention (I). The option of control group (C) or intervention group (I) was printed out on paper. Each print out was placed in sequentially-numbered opaque envelopes according to the random allocation sequence generated. To prevent subversion of the allocation sequence, the identification (ID) numbers of the study participants matched the numbers written on the envelopes. The envelopes were kept in a locked cupboard in the study supervisor's office and opened only at the time of treatment allocation. The study participants were assigned (1:1 ratio) to either of the groups by the research assistant (a resident doctor) using the sequentially- numbered, sealed, opaque envelopes. The study participants did not know which study groups they belonged to (blinding). Outcome assessment was not blinded.

Intervention

All participants in the intervention group received brief MI-based medication adherence counselling in English or Hausa language using an adapted version of a standardized brief MI-adherence counselling script.²⁰ The intervention commenced immediately after recruitment and randomization. Each patient received a 5 - 15-minute one-on-one brief MI counselling session at zero, four, eight- and 12-weeks visits. All sessions were conducted by the researcher who completed a training course on motivational interviewing in brief consultations. All sessions were audio taped and 25% of them were randomly selected for fidelity assessment to MI techniques. Fidelity assessment was done using the Motivational Interviewing Treatment Integrity (MITI) coding system by a clinical psychologist trained in MI practising in JUTH, who provided feedback based on the audio tape recordings. Overall, the evaluations showed that the researcher was adherent to the script and used appropriate MI skills during the brief MI sessions. Reminders about follow up visits were made through phone calls one week earlier. Those in the control group were given usual care which included structured medication adherence counselling using an instruction sheet as was always provided during routine visits. The participants in the two groups were seen on different follow-up days of the week to avoid crossing over of subjects during the entire study.

Data collection and measurements

The instruments of data collection were the questionnaire, mercury sphygmomanometer (Accoson®) and a Littmann® Stethoscope. Items recorded on the questionnaire were the socio-demographic data, medical history, family and social

history. Blood pressure was taken at each visit for the duration of the study i.e. at initial, four, eight and 12 weeks, making a total of four visits. Each participant's blood pressure was measured three times in the sitting position on the left arm using a mercury sphygmomanometer after five minutes of rest, with at least five minutes between measurements. First appearance (phase I) and disappearance (phase V) of Korotkoff sounds heard with the aid of a Littmann's stethoscope were used to define systolic and diastolic blood pressures respectively in millimetres of mercury (mmHg). An average of the three readings was used as the participant's blood pressure.

Data Analysis

Data were analyzed using SPSS version 19. Intention-to-treat analysis was done. Attrition was handled using Last Observation Carried Forward (LOCF). Between group comparison of BP control was done using the chi-square test. Significant differences were further subjected to logistic regression analysis. Within-group comparison of BP control from baseline to the end-point was done using Mc Nemar's test. Analysis of covariance (ANCOVA) was used to determine the effect of the intervention (brief MI) on the BP values at the end of follow-up while controlling for the baseline BP variables. All tests were 2-tailed at 95% confidence interval (CI) and a p-value of < 0.05 was considered significant in all analyses.

Ethical Considerations

The study's ethical approval was obtained from the Institutional Health Research Ethics Committee of the Jos University Teaching Hospital. The data set was anonymized by transcribing names into initials and serial numbers to maintain confidentiality.

RESULTS

The participants flow in the study is illustrated in Figure 1: a total of 132 were randomized, comprising 66 each in the control and intervention group. Of the 66 in the intervention group, 1 participant was lost to follow up and 65 completed the study. In the control group, 4 participants were lost to follow up, and 62 completed the study. In total, only 127 participants completed the study. The attrition rate was therefore 3.8%. The baseline characteristics of all the study participants are summarized in Table 1: the female proportion was generally higher (92.4%) than the male (7.6%). The age ranged from 31 to 90 years. The mean age of the participants in the intervention group was 56.97±10.94 years and 55.00±10.06 years in the control group with no significant difference in age distribution ($t = 1.076$, $p = 0.284$). Table 1 showed no significant differences in the sociodemographic characteristics across the two groups. At the end of 12 weeks, there were statistically significant differences between the groups: a 51.5%-point absolute increase in blood pressure control in the intervention group (Mc Nemar's $p < 0.001$) compared to a 7.5%-point absolute increase in blood pressure control in

the control group (OR = 15.2; 95% CI: 4.0-57.2; $p = 0.267$). Additionally, there was a 25.8%-point absolute difference between the groups (OR=24.3; 95% CI: 3.1– 188.9; $p < 0.001$) in favour of the intervention group. This is illustrated in Table 2. An adjusted logistic regression analysis (Table 3) was done to evaluate the effect of brief MI on blood pressure control adjusting for baseline BP control. After controlling for baseline BP control, the intervention group had 56.6 times higher odds of achieving BP control when compared with the control group (AOR= 56.6, 95% CI: 6.7–479.9, $p = 0.001$).

Post-intervention, there was a 51.5%-point absolute increase in blood pressure control within the intervention group (Mc Nemar's $p < 0.001$) as shown in Table 4. Table 5 showed a significant baseline difference in the SBP between the two groups ($t = 2.627$, $p = 0.010$). In addition, the two groups showed a reduction in their BP values across the intervals of follow-up which did not reach statistical significance. However, when the baseline BP variables were controlled for using ANCOVA, there was a significant reduction [$F_{(df)} = 6.11(1,130)$, $p = 0.015$, effect size = 0.05] in the SBP between the intervention and control groups (114.71mmHg vs. 120.58mmHg respectively) (Figure 2). This indicates a small to medium effect size and the intervention had a significant small to medium effect in lowering SBP independent of the participants' starting SBP levels. The adjusted mean difference for SBP at the end of the study was -5.87mmHg (95% CI: 1.17-10.57; $p = 0.015$). Similarly, there was a significant reduction [$F_{(df)} = 6.50(1,130)$, $p = 0.012$, effect size = 0.05] in the DBP between the intervention and control groups (73.33mmHg vs. 77.12mmHg respectively) (Figure 3). This also indicates a small to medium effect size and suggests that the intervention had a significant small to medium effect on lowering DBP. The adjusted mean difference for DBP at the end of the study was -3.79 mmHg (95% CI: 0.85-6.74; $p = 0.012$).

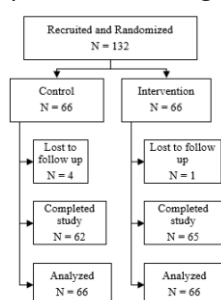


Figure 1: Participants flow through the study

Table 1: Socio-demographic characteristics of the study participants

Characteristics	Study group		Total (N=132) n (%)	Test stat	p-value
	Intervention(N=66) n (%)	Control (N=66) n (%)			
Mean age $\pm$ SD (years)	56.97 $\pm$ 10.94	55.00 $\pm$ 10.06	55.98 $\pm$ 10.51	$t = 1.076$	0.284
Sex				$\chi^2 = 0.000$	1.000
Male	5(7.6)	5(7.6)	10(7.6)		
Female	61(92.4)	61(92.4)	122(92.4)		
Religion				$\chi^2 = 1.286$	0.526
Christianity	20(30.3)	18(27.3)	38(28.8)		
Islam	46(69.7)	48(72.7)	94(71.2)		
Educational level				2.252 [†]	0.753 [†]
No formal education	49(74.2)	46(69.7)	95(72.0)		
Primary	5(7.6)	9(13.6)	14(10.6)		
Secondary	5(7.6)	5(7.6)	10(7.6)		
Tertiary	7(10.6)	6(9.1)	13(9.8)		

Table 2: Effect of brief MI on blood pressure control (between-group difference)

Variables	Intervention Group (N=66) n (%)	Control Group (N=66) n (%)	χ^2	p-value	OR (95% CI)
Baseline BP Control			4.429	0.035	
Controlled	31(47.0)	43(65.2)			0.4 (0.2 – 0.9)
Uncontrolled	35(53.0)	23(34.8)			
End-Point BP Control			17.768	<0.001	
Controlled	65(98.5)	48(72.7)			24.3 (3.1– 188.9)
Uncontrolled	1(1.5)	18(27.3)			

Table 3: Multivariable logistic regression analysis of the effect of brief MI on blood pressure control (between-group difference)

Variable	β	SE	Wald χ^2	AOR	95% CI for AOR		p-value
					Lower	Upper	
Study Group							
Intervention	4.04	1.09	13.71	56.64	6.68	479.92	0.001
Control	-	-	-	1.00	Reference		
Baseline BP control							
Controlled	2.74	0.67	16.69	15.56	4.17	58.04	< 0.001
Uncontrolled	-	-	-	1.00	Reference		

Model includes all variables listed. Outcome variable is end-point BP control (0 = uncontrolled, 1 = controlled). CI = Confidence Interval. Hosmer-Lemeshow Goodness-of-Fit $\chi^2 = 0.060$, $p = 0.970$.

Overall Model classification accuracy = 89.4%

Table 4: Effect of brief MI on blood pressure control (within-group difference)

Baseline blood pressure control level	Final blood pressure control level Controlled BP Freq (%)	Uncontrolled BP Freq (%)	Total Freq (%)	McNemar's p-value	OR (95% CI)
Intervention				<0.001	
Controlled BP	31(47.7)	0(0.0)	31(47.0)		
Uncontrolled BP	34(52.3)	1(100.0)	35(53.0)		
Total	65(100.0)	1(100.0)	66(100.0)		
Control				0.267	15.2 (4.0-57.2)
Controlled BP	39(81.2)	4(22.2)	43(65.2)		
Uncontrolled BP	9(18.8)	14(77.8)	23(34.8)		
Total	48(100.0)	18(100.0)	66(100.0)		

Table 5: Effect of brief MI on SBP and DBP reduction

Variables	Intervention group (N=66)	Control group (N=66)	t-test	p value	Cohen's Effect Size (95% CI)
SBP (mmHg)					
Baseline	133.48 $\pm$ 18.85	124.68 $\pm$ 18.53	2.627	0.010	0.47(-2.87-3.82)
Week 4	123.33 $\pm$ 16.57	120.91 $\pm$ 15.46	0.869	0.387	-
Week 8	116.82 $\pm$ 11.52	121.33 $\pm$ 15.83	-1.873	0.063	-
Week 12	116.36 $\pm$ 11.04	118.94 $\pm$ 18.24	-0.981	0.328	-
DBP (mmHg)					
Baseline	84.09 $\pm$ 12.27	80.00 $\pm$ 12.02	1.934	0.055	-
Week 4	77.88 $\pm$ 9.69	78.64 $\pm$ 9.26	-0.459	0.647	-
Week 8	75.61 $\pm$ 7.87	77.58 $\pm$ 9.93	-1.263	0.209	-
Week 12	74.24 $\pm$ 8.42	76.21 $\pm$ 11.33	-1.133	0.259	-

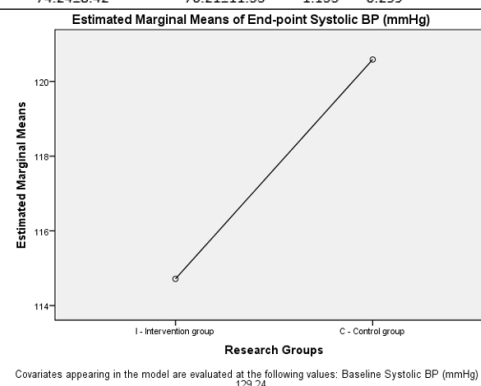


Figure 2: Effect of brief MI on the endpoint SBP while controlling for the baseline BP

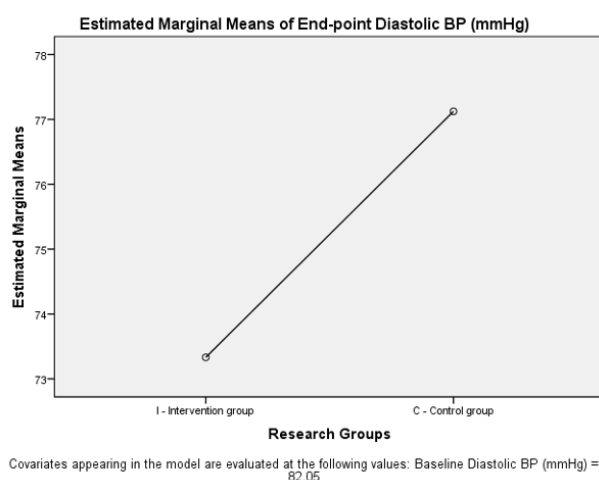


Figure 3: Effect of brief MI on the endpoint DBP while controlling for the baseline BP

DISCUSSION

Brief motivational interviewing in chronic disease management has been found to improve clinical outcomes and the quality of life of patients with chronic diseases.^{21,22} This study sought to determine the effect of brief motivational interviewing on blood pressure control among adult patients with hypertension with a view to recommend such an intervention which could enhance better management of such patients in this environment. Although the data were collected 10 years ago, disseminating the findings is still relevant, being to the best of our knowledge, the first randomized trial that tested the effect of brief MI on blood pressure control in adult patients with hypertension in Nigeria. There has been no fundamental change in disease definition, diagnostic criteria or the core techniques of brief motivational interviewing. The methods used in this study are robust and align with current standards. The data from this study will provide baseline values for trend comparisons in the future.

In this study, there were more females (92.4%) than males (7.6%). This is similar to findings by Ozpulat et al.¹² in Turkey. The similarity may be because both studies were carried out in primary care settings and were hospital-based studies. Women are more anxious about their health and are more available than men to go through the long waiting time in health facilities.²³ In addition, more men may be involved in the workforce and not have time to go to the clinic unlike women who may be more engaged in household activities and could have the time to attend the clinic appointments. Therefore, they may present to health facilities more often than men. The female preponderance in this study contrasts with findings of a higher male prevalence by Hedegaard et al.²⁴ This divergent finding may be due to their large sample size.

In our study, there was a 51.5%-point absolute increase in blood pressure control within the intervention group (Mc Nemar's $p < 0.001$) at the end of 12 weeks. After controlling for baseline BP control, the intervention group had 56.6 times higher odds of achieving BP control when compared with the control group (AOR = 56.6; 95% CI: 6.7 - 479.9; $p = 0.001$). Due

to the near-complete clinical success rate within the intervention group (98.5%), the AOR showed a very wide confidence interval indicating lower statistical precision for the specific point estimate. This very wide confidence interval could be due to the modest sample size (132). However, the therapeutic superiority of the intervention (brief MI) remains significant. Model diagnostics indicated good validity; the Hosmer-Lemeshow test confirmed an adequate model fit ($p = 0.970$) and the model correctly classified 89.4% of all cases. There was also a significant 25.8%-point absolute difference between the groups (OR = 24.3, 95% CI: 3.1-188.9; $p < 0.001$) in favour of the intervention group. The very wide confidence interval could also be due to the modest sample size. Our study findings suggest that brief MI in combination with usual care may be more effective than usual care alone in improving blood pressure control in adults with hypertension. The results of this study corroborate the findings by Lundahl et al.²⁵ who reported that MI improved blood pressure with a significant 14%-point absolute difference between the groups (OR = 1.65, 95% CI: 1.24-2.19). The 25.8%-point absolute difference between the groups in our study is higher than the 14% reported by Lundahl et al.²⁵ and this may be due to the use of the self-reported MMAS-8 as Lundahl et al. found that self-reported adherence measures showed stronger effects of MI.²⁵

This study's finding of a significant between-group difference in mean SBP and mean DBP of -5.87 mmHg (95% CI: 1.7-10.57 mmHg, $p = 0.015$) and -3.79 mmHg (95% CI: 0.85-6.74 mmHg, $p = 0.012$) respectively is similar to findings in Australia²⁶ which reported a significantly greater reduction in SBP by 7.2 mmHg (95% CI: 1.6-12.8 mmHg) in the intervention group.²⁶ In this study population, blood pressure was significantly reduced among the intervention group who had uncontrolled blood pressure at baseline when compared with their control group counterparts. This is similar to results reported in the Australian study.²⁶ The reason for this may be because both studies involved a comprehensive MI-based intervention.

The significant between-group difference in SBP and DBP in this study population is also comparable with findings by Ozpulat et al.¹² who found a significant between-group reduction in mean SBP (-10.0 mmHg, $p = 0.001$) and DBP (-10.0 mmHg, $p = 0.001$) in favour of the intervention group. It is also consistent with meta-analyses by Huang et al.¹³ and Xu et al.¹¹ who found significantly greater reductions in both SBP and DBP in the intervention groups compared to the control groups. The short duration (six months or less) of these studies compared to this study may account for the similarities.

The significant between-group difference in SBP and DBP in this study contrasts with evidence from the United States of America (USA).²⁰ The USA study found a statistically non-significant between-group difference in

SBP and DBP of -6.1 mm Hg ($p = 0.065$) and -1.4 mm Hg ($p = 0.465$), respectively, in favour of the intervention group.²⁰ A possible explanation for this may be because uncontrolled BP formed the inclusion criteria for the study participants rather than medication non-adherence. An adherence-focused intervention such as MI might have resulted in significant BP changes if the subjects had medication non-adherence and uncontrolled BP. Though the BP difference was not statistically significant, it was clinically meaningful.^{1,20} In traditional antihypertensive drug trials, the magnitude of SBP reduction noted in this trial has been associated with significant cardiovascular risk reduction and mortality.^{1,20}

The significant between-group differences in BP control, SBP and DBP in this study were also at variance with findings in Denmark²⁴ who reported the intervention had no significant impact on BP outcomes. The authors proffered that the reason explaining this divergent finding may be the high attrition rate (26%) reported in their study.

CONCLUSION

Poor BP control among adult patients with hypertension is a major problem in the General Out-Patient Clinic (GOPC) of Jos University Teaching Hospital (JUTH), Jos, Nigeria. This was evident by the BP control rate at the commencement of the study which was 56.1% (47.0% and 65.2% for the intervention and control groups respectively). At the end of the study, the BP control rate improved significantly in the intervention group compared to the control group following four-weekly brief MI sessions (with a 51.5% and 7.5%-point absolute increase in blood pressure control within the intervention group and control groups respectively). Therefore, the use of brief MI in combination with usual care may be more effective than usual care alone in improving blood pressure control in adult patients with hypertension.

LIMITATIONS OF THE STUDY

Limitations of this study include a disproportionate male to female patient ratio which limits the generalizability of our findings to the broader population of adults with hypertension, particularly men. Our modest sample size of 132 may have widened the confidence intervals and a much larger sample size may have shown a more precise point estimate of the true population odds ratio. The relatively short duration of the study is also a limitation as this may not show whether the improvement obtained in this study could be sustained long term i.e. whether the difference in blood pressure control between the groups would diminish with time. The full effect of brief motivational interviewing on blood pressure control could be appreciated better when the follow up period is much longer.

RECOMMENDATIONS

Emphasis should be placed on promoting routine blood pressure checks and implementing measures to enhance

blood pressure control in individuals with hypertension. Further intervention studies with larger sample sizes and longer follow-up periods should be done in order to assess the effectiveness and sustainability of the effects of brief motivational interviewing in our environment. There should be on-going advocacy, committed leadership, educational and financial support for research in brief motivational interviewing interventions and their possible incorporation and implementation in front-line health care settings.

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