

# Does Knowledge Matter?

## Intentional Medication Nonadherence Among Middle-Aged Korean Americans With High Blood Pressure

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**Aim:** To examine predictors of intentional and unintentional nonadherence to antihypertensive medication regimens and their relationships to blood pressure outcomes. **Background:** Although poor adherence to medical regimens is a major concern in the care of patients with high blood pressure (HBP), our understanding of the complex behavior related to adherence is limited. Moreover, few studies have been devoted to understanding adherence issues in ethnic minority groups, such as the interplay between cultural beliefs and HBP medication-taking behaviors. **Design:** A cross-sectional analysis was performed to assess the factors affecting nonadherence to antihypertensive medication regimens. **Methods:** The data used in this analysis came from an ongoing HBP intervention trial involving middle-aged (40–64 years) Korean Americans with HBP. A total of 445 Korean Americans with HBP was enrolled in the trial at baseline. Of these, 208 participants who were on antihypertensive medication were included in the analysis. Using multivariate logistic regression, we examined theoretically selected variables to assess their relationships to intentional and unintentional nonadherence in this sample. **Results:** Approximately 53.8% of the subjects endorsed 1 or more types of nonadherent behaviors. After controlling for demographic variables, multivariate analysis revealed that a greater number of side effects from the medication (adjusted odds ratio [OR], 1.19; 95% confidence interval [CI], 1.07 to 1.33) and a lower level of HBP knowledge (adjusted OR, 0.89; 95% CI, 0.79 to 0.99) were significantly associated with intentional nonadherence. Unintentional nonadherence was less strongly associated with the study variables examined in the analysis. **Conclusion:** Our findings indicate that intentional nonadherence to antihypertensive medication that stems from incomplete knowledge of HBP treatment is prevalent among middle-aged Korean Americans with HBP. The results highlight the strong need for an intervention that focuses on increasing patient knowledge about HBP, including the benefits and side effects of antihypertensive medication. This type of focused intervention may help reduce intentional nonadherence to antihypertensive medications and ultimately result in achieving adequate BP control in this high-risk group.

**KEY WORDS:** adherence, antihypertensive medication, high blood pressure, intentional nonadherence, Korean Americans

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Uncontrolled high blood pressure (HBP) significantly increases the overall risk for cardiovascular disease and devastating complications such as stroke. Despite the availability of effective medical

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treatments, the percentage of those with controlled blood pressure (BP) in various populations remains low. In the United States, only one third of those being treated for HBP achieve optimal BP.<sup>1</sup> Adherence to prescribed medication is the single most important factor contributing to this failure to achieve and maintain controlled BP. According to recent estimates from the World Health Organization, at least 50% of patients who are hypertensive do not take their prescribed antihypertensive medication.<sup>2</sup> Studies have similarly shown that noncompliance with prescribed drug regimens is as high as 20% to 60%.<sup>3-5</sup>

Adherence to (or compliance with) a medication regimen is generally defined as the extent to which patients take medications as prescribed by health-care providers.<sup>6</sup> The terms "adherence" and "compliance" have been used interchangeably. The term "compliance" suggests that the patient is passively following the doctor's orders. In contrast, the term "adherence" was thought to imply less authoritarianism from doctors than the term "compliance." "Adherence" thereby seems to imply a patient choice to follow prescribed therapy.<sup>7,8</sup> This concept, "adherence," thus is wider than compliance and should be preferred.

Medication adherence has traditionally been treated as a dichotomized concept (ie, adherent vs. nonadherent). However, significant theoretical progress based on recent studies has led to a further distinction between intentional (ie, missing or altering doses to fit one's needs) and unintentional (forgetting to take medication) nonadherence.<sup>7,9-16</sup> Intentional nonadherence typically follows an active decision about whether to take medications, based on particular reasons (eg, perceiving the treatment as unnecessary, patient-physician discordance, disease duration, side effects).<sup>8,9,11,13,15,16</sup> In contrast, unintentional nonadherence has been less strongly associated with individual's beliefs and more strongly with demographic (eg, less education, older age) and clinical characteristics (eg, anxiety, depression).<sup>13,15,16</sup>

Poor HBP-related health outcomes in recent immigrants are a particular concern.<sup>17-19</sup> Available epidemiologic studies of Korean Americans (KAs)<sup>20,21</sup> indicate that members of this minority population have a higher prevalence of HBP and lower rate of controlled HBP than do other ethnic groups, and they frequently experience severe HBP-related complications such as stroke. Although the strong association between poor medication adherence and limited HBP control is well known,<sup>22</sup> we have not found any published studies that have specifically investigated medication nonadherence and its correlates in an ethnic minority population.

The purpose of this article was to conduct an in-depth investigation of medication adherence by further distinguishing the concepts of intentional and unintentional nonadherence as they relate to an ethnic minority group. Specifically, we examined the predictors of intentional and unintentional nonadherence to antihypertensive medication regimens and their relationships to ultimate BP outcomes in a sample of middle-aged KAs with HBP. Understanding the potential differences between intentional and unintentional patterns of nonadherence, along with the potential interplay between cultural belief and medication-taking behaviors, will inform both the scientific and clinical aspects of HBP treatment.

## Methods

### Sample and Setting

Baseline data obtained from participants in the Self-Help Intervention Program for HBP care (SHIP-HBP) were used in this analysis to assess the factors affecting nonadherence to antihypertensive medication regimens. The SHIP-HBP is an ongoing intervention trial that consists of culturally tailored psychobehavioral education with self-monitoring of BP and telephone counseling by bilingual nurses. The trial is being conducted in middle-aged KAs with HBP residing in the Baltimore-Washington Metropolitan Korean community, one of the most well-known Korean populations in the United States. At baseline, 445 KAs were recruited. Eligibility criteria for entry into the SHIP-HBP trial were: 40 to 64 years; systolic BP (SBP)  $\geq 140$  mm Hg and/or diastolic BP (DBP)  $\geq 90$  mm Hg on 2 separate occasions or being on antihypertensive medication; and self-identification as a KA. Of the 445 participants, 243 (54.6%) were on antihypertensive medication. The final analysis involved 208 participants who responded to the questions on medication nonadherence.

### Procedures

Following study approval by the Institutional Review Board, eligible KAs who gave written informed consent were assessed for baseline characteristics. Data collection was completed in October 2003–December 2004. Data were collected through face-to-face interviews by bilingual research assistants who were trained and monitored by the investigators. It took 30 minutes to 2 hours for each participant to complete the baseline interview. Details of the study procedures have been reported elsewhere.<sup>23</sup>

## Measurements

Demographic data included age, gender, level of education, and income. High blood pressure duration, number of side effects associated with taking antihypertensive medication, comorbid medical conditions, and depression were included in clinical variables.

Depression was measured using the Kim Depression Scale for Korean Americans (KDSKA), a self-reporting 21-item instrument.<sup>22</sup> Its 4-point Likert-type scale ranges from 0 to 63, with higher scores indicating more depressive symptoms. The KDSKA was developed to be consistent with cultural descriptions of the signs and symptoms of depression that KAs perceive (eg, “my chest felt heavy, as if a rock was lying on it”; “I felt down, as though everything around me was dark.”). Although, thus far, it has been used to a limited extent by researchers, the reliability of this scale has proven to be strong, with an alpha coefficient of .94, and evidence of its construct validity has been reported.<sup>22</sup> The Cronbach alpha measured .93 in this study.

High blood pressure knowledge was evaluated using 12 items developed by the National HBP Education Program, the National Heart, Lung, and Blood Institute (1994), with the addition of 18 items generated by the investigative team based on our literature review. This modified HBP knowledge instrument has previously been used in our work with KAs.<sup>21</sup> High blood pressure knowledge scores were calculated by counting the number of items with correct responses to statements such as “Young adults don’t get HBP” and “HBP is life-threatening.” Scores could range from 0 to 30.

High blood pressure beliefs were assessed by a 12-item questionnaire. The questionnaire asked participants to indicate if they believed certain behavioral factors could help lower BP and to select the most important factor to control BP.<sup>24</sup> Self-efficacy for HBP management was measured by an HBP Management Self-Efficacy Scale, which was adapted from the HBP Belief Scale,<sup>24</sup> as there were no HBP-specific self-efficacy scales available. The modified scale consisted of 4-point Likert-type items asking how confident the individual was in managing HBP in 11 different areas.

Perceived social support was measured with the Personal Resource Questionnaire (PRQ)—85 part B.<sup>25</sup> The scale consisted of 25 Likert-type items with scores for each item ranging from 1 to 4. Perceived social support scores were average scores on the 25 items, with a high score meaning more social support was available. Evidence of reliability and validity of the tool have been well documented.<sup>25–27</sup> The Cronbach alpha for this sample was .93.

Satisfaction with care was measured by the communication subscale of the Patient Satisfaction Questionnaire (PSQ III).<sup>28</sup> The scale consists of 9 items, with a high score indicating more satisfaction with care. Examples of communication items are: “If I have a medical question, I can reach someone for help without problem” and “My healthcare provider always does his/her best to keep me from worrying.” Internal consistency reliability of the PSQ III ranges from 0.73 to 0.94.<sup>28,29</sup> The alpha coefficient was .92 in this study.

Finally, a subscale from the Hill-Bone Compliance Scale<sup>18</sup> was used to examine medication nonadherence. The Hill-Bone scale consists of fourteen 4-point Likert-type items (1 = none of the time, 2 = some of the time, 3 = most of the time, 4 = all the time) that measure the reported degree of adherence to medication taking, appointment keeping, and a healthy diet. Higher scores on the scale indicate a lower level of adherence. For the purpose of this study, we used 4 items on the medication subscale that are directly related to intentional and unintentional medication nonadherence. Specifically, if a participant endorsed being nonadherent at least some of the time (rated 2 or higher on the 4-point scale) on at least one of the following items, the response was considered as intentional nonadherence: “How often do you miss taking your HBP pills when you feel better?” and “How often do you miss taking your HBP pills when you feel sick?” Likewise, a participant was considered as being unintentionally nonadherent if he or she rated 2 or higher on at least one of the following items: “How often do you forget to take your HBP medicine?” and “How often do you miss taking your HBP pills when you are careless?” The Hill-Bone Compliance Scale has demonstrated adequate reliability ( $\alpha = .74-.84$ ), construct validity, and predictive validity in African Americans and non-Hispanic whites.<sup>18</sup> The Cronbach alpha was .74 for the medication subscale in this sample.

## Analysis

Descriptive statistics were used to summarize the study sample. For the purposes of this analysis, participants were divided into 3 groups, depending on their adherence status: adherent, unintentionally nonadherent, and intentionally nonadherent. Chi-square tests or one-way analysis of variance were conducted to investigate differences in various explanatory variables between the adherent group, the unintentionally nonadherent group, and the intentionally nonadherent group. A post hoc analysis with Bonferroni procedure was used to compare the differences between each pair of means.

The main analysis of nonadherence was conducted using multivariate logistic regression. Two logistic regression models were used to examine the relationships between explanatory variables and each type of nonadherence (ie, intentional and unintentional). Statistical significance was determined at  $\alpha = .05$ .

## Results

### Sample Characteristics

The sample consisted of 94 men (45.2%) and 114 women (54.8%), with the majority (93.8%) of the respondents being married. Ages ranged from 40 to 64 years, with a mean age of 52.6 years (SD = 5.6). More than half (53.8%) had education levels beyond some college education. Two out of 3 (67%) reported their income levels as difficult to manage. The sample mean depression score was 11.6 (SD = 9.1), and they had a mean of 0.5 comorbid medical conditions, such as diabetes, angina, and heart failure (SD = 0.89). Patients reported having HBP for an average of 6 years (SD = 6.7) and suffering from about 9 adverse effects from antihypertensive medications they were taking (mean = 8.9  $\pm$  SD = 5.9).

### Patterns and Correlates of Medication Adherence/Nonadherence

Of the 208 participants who were included in this analysis, 112 (53.8%) endorsed at least 1 type of nonadherent behavior. Of these, 62 patients (29.8%) indicated unintentional nonadherence, 5 patients indicated (2.4%) intentional nonadherence, and 45 patients indicated (21.6%) both types of nonadherence. We included the 45 participants who reported both types of nonadherence in the intentionally nonadherent group, on the premise that intentional nonadherence involves an active decision about whether or not to take antihypertensive medications and providing a rationale for considering it the individual's usual medication-taking pattern. Demographic characteristics, clinical characteristics, and other psychosocial factors of the sample were compared among the 3 groups (the adherent group, the unintentionally nonadherent group, and the intentionally nonadherent group; Table 1). Analysis of demographic characteristics found no statistically significant differences among the groups. Although the number of years having HBP and the number of comorbid medical conditions did not differ among the groups, participants

**TABLE 1** Demographic, Clinical, and Psychosocial Characteristics of the Sample (n = 208)

Variables	Adherence (n = 96)	Intentional Nonadherence (n = 50)	Unintentional Nonadherence (n = 62)	$\chi^2/F$
Gender				
Male	49 (51.0)	18 (36.0)	27 (43.5)	3.100
Female	47 (49.0)	32 (64.0)	35 (56.5)	
Age				
40–49 years	35 (36.5)	13 (26.0)	19 (30.6)	1.746
>50 years	61 (63.5)	37 (74.0)	43 (69.4)	
Marital status				
Married	89 (92.7)	47 (94.0)	58 (93.5)	0.098
Others	7 (7.3)	3 (6.0)	4 (6.5)	
Education				
Less than high school graduate	45 (46.9)	24 (48.0)	27 (43.5)	0.258
$\geq$ Some college	51 (53.1)	26 (52.0)	35 (56.5)	
Income				
Difficult to manage	64 (66.7)	34 (68.0)	42 (67.7)	0.034
Comfortable	32 (33.3)	16 (32.0)	20 (32.3)	
Depression	10.1 [9.2]	14.6 [9.4]	11.6 [8.3]	4.008*
No. years having hypertension	5.9 [7.3]	6.1 [5.6]	6.9 [7.1]	0.477
Comorbid medical conditions	0.5 [0.9]	0.5 [0.8]	0.5 [0.9]	0.015
No. adverse effects	7.4 [5.0]	11.9 [6.6]	8.9 [5.7]	10.656***
HBP knowledge	21.8 [3.4]	20.0 [4.8]	20.5 [4.3]	4.074*
HBP self-efficacy	15.6 [3.6]	16.6 [3.6]	16.2 [3.5]	1.406
HBP beliefs	13.6 [3.3]	13.9 [4.3]	14.6 [4.3]	1.278
Social support	96.9 [25.4]	93.2 [23.5]	91.3 [25.9]	1.001
Satisfaction with care	34.5 [6.8]	32.4 [5.9]	34.6 [6.9]	1.857

HBP indicates high blood pressure.

Values are expressed as n (%) or mean [SD].

\* $P < .05$ .

\*\* $P < .01$ .

\*\*\* $P < .001$ .

who reported intentional nonadherence were significantly more likely to be depressed ( $t = 4.4, P = .015$ ) and were more likely to have antihypertensive medication-related adverse effects ( $t = 4.5, P < .001$ ) than those in the adherent group. Intentionally nonadherent participants were also more likely to experience adverse effects when compared with the unintentionally nonadherent ( $t = 3.1, P = .015$ ). When we examined individual adverse effects of HBP medications, intentionally and unintentionally nonadherent participants were more likely to report dry mouth, shortness of breath, itching, and other side effects than were those in the adherent group (Table 2). The most frequently reported adverse side effects in the intentional nonadherent group were frequent urination at night, itching, heart pounding, dry mouth, and flushing of the face. Getting up at night to urinate was reported by 74% of the intentionally nonadherent participants, and this figure was significantly higher than for the other two groups.

We also assessed the relationships of a number of psychosocial factors to the patterns of medication adherence/nonadherence we observed. The adherent group had significantly more knowledge than did the nonadherent groups ( $F = 4.074, P = .018$ ). However, the mean scores for HBP self-efficacy, HBP beliefs, social support, and satisfaction with care were not significantly different among the 3 groups.

After controlling for demographic variables, a multivariate analysis revealed that a greater number of adverse effects (adjusted odds ratio [OR], 1.19; 95% confidence interval [CI], 1.07 to 1.33) and a lower level of HBP knowledge (adjusted OR, 0.89; 95% CI, 0.79 to 0.99) were significantly associated with intentional nonadherence. Unintentional nonadherence was less strongly associated with clinical and psychosocial factors after demographic variables were accounted for (Table 3).

## Medication Nonadherence and Uncontrolled BP

To examine the role of different types of nonadherence in relation to ultimate BP outcomes in this sample of middle-aged KAs with HBP, we used logistic regression models. Blood pressure noncontrol status was defined as a hypertensive individual who maintains a BP of more than 140/90 mm Hg.<sup>30</sup> Table 4 shows odds ratios representing the probability of BP noncontrol for each medication nonadherence group. It was found that unintentionally and intentionally nonadherent participants were 2.40 times and 3.26 times, respectively, more likely to have uncontrolled BP than were adherent participants.

## Discussion

These results suggest that approximately 54% of our participants were nonadherent to their prescribed medication regimen and that almost half of these nonadherent individuals were intentionally not taking their medication. These findings are consistent with the rate of nonadherence reported in other studies.<sup>31–34</sup> The factors significantly associated with medication nonadherence were depression, the number of adverse effects of the medication, and HBP knowledge, although the association of depression with medication nonadherence was no longer significant after controlling for demographic variables.

Previous studies<sup>35,36</sup> have supported a relationship between depression and medication adherence behaviors. In our study, however, the level of depression was significantly correlated with medication nonadherence only at the bivariate level.

Among nonadherent participants, the intentionally nonadherent group reported significantly more

**TABLE 2** Adverse Effects of HBP Medications

	Adherence	Intentional Nonadherence	Unintentional Nonadherence	$\chi^2$
Dry mouth	20 (20.8)	23 (46.0)	19 (30.6)	9.982**
Weakness in limbs	20 (20.8)	23 (46.0)	15 (24.2)	10.953**
Itching	22 (22.9)	25 (50.0)	22 (35.5)	11.091**
Shortness of breath	17 (17.7)	19 (38.0)	13 (21.0)	7.846*
Stomach pain	9 (9.4)	12 (24.0)	7 (11.3)	6.394*
Mouth ulcers	5 (5.2)	14 (28.0)	6 (9.7)	16.608***
Light hurts eyes	20 (20.8)	21 (42.0)	19 (30.6)	7.316*
Getting up at night to urinate	52 (54.2)	37 (74.0)	31 (50.0)	9.503*
Flushing of the face	19 (19.8)	22 (44.0)	19 (36.8)	9.526**
Heart pounding	20 (20.8)	24 (48.0)	17 (27.4)	11.862**

Values are presented as n (%).

\* $P < .05$ .

\*\* $P < .01$ .

\*\*\* $P < .001$ .

**TABLE 3** Predictors of Intentional and Unintentional Nonadherence to Taking Medicine\*

Variables	Intentional Nonadherence		Unintentional Nonadherence	
	Odds ratio	95% CI	Odds ratio	95% CI
Age	1.025	0.950–1.107	1.005	0.938–1.077
Gender				
Male	1	—	1	—
Female	1.062	0.405–2.786	1.884	0.860–4.125
Marital status				
Married	1	—	1	—
Others	0.349	0.062–1.962	0.626	0.139–2.820
Income				
Comfortable	1	—	1	—
Difficult	0.668	0.265–1.684	0.817	0.364–1.836
Education	1.079	0.898–1.296	1.019	0.881–1.179
Comorbid medical conditions	0.563	0.297–1.068	0.920	0.614–1.378
Depression	1.012	0.954–1.073	1.018	0.967–1.070
Years of having HBP	1.025	0.960–1.093	1.036	0.985–1.090
No. of adverse effects	1.193 <sup>†</sup>	1.068–1.333	1.042	0.958–1.134
HBP knowledge	0.888 <sup>‡</sup>	0.794–0.994	0.926	0.833–1.030
HBP self-efficacy	1.044	0.921–1.184	1.027	0.915–1.151
HBP beliefs	0.988	0.863–1.130	1.067	0.959–1.187
Social support	1.008	0.987–1.029	0.992	0.976–1.008
Satisfaction with care	0.997	0.929–1.069	1.030	0.973–1.091

\*Referent group is the adherent group.

<sup>†</sup>*P* < .01.<sup>‡</sup>*P* < .05.

adverse side effects from their medication than did the unintentionally nonadherent group, even after controlling for demographic variables. This result is consistent with previous findings.<sup>11,13</sup> It should be noted that more than half of the symptoms assessed in this study were experienced by almost half of the intentional nonadherent participants. The discomfort associated with these adverse side effects can be a reason for patients not to adhere to their recommended treatment regimen. Another potential cause of nonadherence relating to adverse side effects is that KAs tend to be reluctant to disclose their symptoms and express their feelings with healthcare providers. Many KAs fear that reporting side effects of prescribed medication to their physician might be perceived as a sign of contempt, disrespect, or challenge to the authority of the physician. Our previous descriptive study<sup>36</sup> found that many first-

generation KA immigrants still subscribe to this traditional world view, which acts as a serious barrier to effective therapeutic communication. Some patients go to great lengths to avoid a “confrontation with authority” with their physicians by choosing to adjust their medication on their own or to stop taking their HBP medications altogether in response to unpleasant or uncomfortable side effects.

The significant differences with regard to HBP knowledge between the adherent and nonadherent groups noted in this study is consistent with other reports.<sup>10</sup> In particular, a lack of HBP knowledge was significantly associated with medication nonadherence. This finding has significant clinical implications because now we have empirical evidence to suggest that HBP management-specific knowledge is an important predictor of nonadherence to HBP treatment recommendations (ie, medication). Therefore, improving knowledge should be the next logical and potentially effective strategy for reducing intentionally nonadherent behavior. In contrast to the widespread belief among behavioral scientists and clinicians that many health promotion interventions focused on improving specific knowledge are not effective because of the complex nature of lifestyle modifications,<sup>37,38</sup> our findings suggest that in the narrowly focused area of medication-taking behavior, the relevance of a knowledge improvement-directed intervention is potentially quite high. Our results also highlight the need for comprehensive, individualized patient education on

**TABLE 4** BP Noncontrol and Medication Nonadherence (n = 208)

	Intentional Adherence	Unintentional Nonadherence	Unintentional Nonadherence
% BP noncontrol*	64.6	82.0	79.0
Odds ratio <sup>†</sup>	1	3.26	2.40
95% CI	—	1.36–7.82	1.10–5.23

\*BP noncontrol: SBP  $\geq$ 140 mm Hg and/or DBP  $\geq$ 90 mm Hg.<sup>†</sup>Demographic variables (age, gender, marital status, income, and education level) were adjusted.

disease management, including providing detailed explanations regarding the side effects of prescribed medications and patients' future options.

Neither health beliefs, self-efficacy, neither social support, nor satisfaction with current medical care was associated with nonadherence in this KA sample. Previous findings regarding the effect of these variables on nonadherence have been mixed.<sup>38,39</sup>

The lack of an association among common correlates and nonadherence that we observed in this study may have to do with the measurement of the variables chosen, as we exclusively focused on HBP medication-taking behaviors. It seems that the relative importance of HBP treatment knowledge in predicting KAs' HBP medication adherence overshadowed the effect of other factors that have traditionally been associated with adherence.

Our study also found that the adherent group had significantly better controlled BP than did the non-adherent group. In particular, the intentionally non-adherent group showed the highest level of uncontrolled BP, which was at least 3 times higher than that reported for the adherent group. This result is consistent with previous studies demonstrating that poor medication adherence is associated with a higher level of uncontrolled BP.<sup>22</sup> This result suggests the importance of tailored intervention(s) for patients who may be intentionally nonadherent to their treatment regimen because of misinformation or a lack of the knowledge that is needed for taking proper care of their HBP.

The results of the present study should be interpreted in light of the potential limitations inherent in a cross-sectional study and the use of self-report for data collection. It is possible that we might have overestimated adherence in this population because of a social desirability bias. Recent research, however, has indicated that self-report of adherence is highly reliable and valid in this population.<sup>39,40</sup> Furthermore, the study population was limited to KAs with HBP. Thus, our findings may not be generalized beyond this population.

Another study limitation is that the effect of medication barriers (medication cost and complex regime)<sup>32</sup> and healthcare system issues (access to healthcare and lack of reimbursement for medication)<sup>4</sup> on nonadherence could not be evaluated. This study focused on patient characteristics and psychosocial factors for nurses to identify and intervene in those that are modifiable.

Despite these potential limitations, the present study provides important theoretical and clinical insights into medication nonadherence in one of the most understudied groups in the United States, KAs with HBP. This study has identified potential links between an HBP knowledge deficit and higher

rates of uncontrolled HBP resulting from intentional nonadherence. Future research is needed to cross-validate our findings and confirm in other populations a potential mediating role for adherence behavior in linking HBP knowledge to HBP control.

Our findings clearly highlight the need for an intervention that focuses on increasing patients' knowledge about HBP, including the benefits, side effects, and unpleasant symptoms of HBP medication. Such an intervention that focuses on increasing patient knowledge about HBP management will likely reduce intentional nonadherence to antihypertensive medications and ultimately help to achieve adequate BP control, preventing devastating complications in this minority population. These findings from our study may also be relevant to other ethnic minority populations that have high rates of anti-hypertensive medication nonadherence.

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