

# Effect of Community Nurse Assistance in Blood Pressure Self-Monitoring Program on Compliance of Hypertensive Patients

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## ABSTRACT

*Hypertension is a common non-communicable disease requiring lifelong treatment. Poor adherence to blood pressure monitoring and antihypertensive medication remains a major challenge. This study aimed to analyze the effect of community nurse assistance in a blood pressure self-monitoring program on treatment adherence among hypertensive patients. A quantitative quasi-experimental study with a pretest-posttest control group design was conducted in the working area of Ahmad Yani Health Center, Bandung. Sixty-four hypertensive patients were recruited and divided into intervention (n=32) and control (n=32) groups. Data were collected using blood pressure observation sheets, self-monitoring logbooks, and the Morisky Medication Adherence Scale-8 (MMA-8). The intervention lasted eight weeks, including pretest, six weeks of weekly nurse assistance, and posttest. Each assistance session lasted 30–45 minutes. Data were analyzed using descriptive statistics, Wilcoxon, and Mann-Whitney tests. Before intervention, low adherence was reported in 68.8% of the intervention group and 65.6% of the control group. After intervention, low adherence decreased to 21.9% in the intervention group but remained 59.4% in the control group. MMA-8 scores increased from 4.2 to 6.8 in the intervention group ( $p<0.001$ ), with no significant change in the control group ( $p=0.421$ ). Between-group differences were significant ( $p<0.001$ ). Community nurse assistance may improve treatment adherence, although multicenter studies with longer follow-up are needed.*

*Keywords : Nurse Assistance, Community, Monitoring, Blood Pressure, Compliance, Hypertension*



## INTRODUCTION

Hypertension is one of the main public health problems in the adult population. In this study, hypertension was defined based on blood pressure thresholds according to the guidelines used, namely blood pressure  $\geq 140/90$  mmHg. This condition is a major risk factor for cardiovascular disease, stroke, heart failure and kidney disease, and affects about one in three adults globally (World Health Organization, 2023).

The global burden of hypertension continues to increase. An analysis of more than a thousand population studies showed that the number of hypertensive patients increased from about 650 million people in 1990 to 1.3 billion people in 2019. This increase is particularly challenging in low-and middle-income countries due to limited access to detection, treatment, and ongoing monitoring in primary health care (NCD Risk Factors collaboration, 2021).

The problem of hypertension is not only related to the high incidence, but also the low coverage of optimal diagnosis and treatment. Many hypertensive patients do not yet know their state of health or have not achieved adequate control of blood pressure, thereby increasing the risk of complications that could actually be prevented. Therefore, the management of hypertension requires strategies that focus not only on medical therapy, but also on improving the sustainability of care and patient compliance (World Health Organization, 2023).

In the Asian region, the increase in hypertension is related to lifestyle changes, urbanization, and cardiovascular risk patterns that have their own characteristics. Community-based approaches and strengthening hypertension management in primary care are important strategies to control the increasing burden of non-communicable diseases, including in Indonesia as a developing country in the Asian region (Kario et al., 2024).

In Indonesia, age and long-term smoking are associated with an increased risk of hypertension. In addition to these risk factors, the success of controlling hypertension is also strongly influenced by patient compliance in undergoing treatment, monitoring blood pressure, and implementing changes in health behavior on an ongoing basis (Kusumawati et al., 2023).

The problem of hypertension is also found at the regional level. Data from the West Java provincial Health Office in 2023 shows that hypertension health services still face challenges in achieving optimal patient management coverage. Differences in service achievement between regions indicate the need to strengthen patient assistance strategies at the primary service level to support ongoing monitoring and control of hypertension (West Java provincial Health Office, 2023).

Bandung city as an urban area also faces a gap between the estimated number of hypertensive patients and the number of patients recorded getting health services. Based on data from the Bandung City Health Office in 2022, it is estimated that there are around 700,000 people with hypertension, but only some of them are recorded through examinations at health care facilities. This condition indicates the need for increased detection, routine monitoring, and assistance to hypertensive patients at the puskesmas level (Bandung City Health Office, 2022).

Compliance becomes an important component in the successful control of hypertension. Non-compliance with antihypertensive therapy is still a problem that causes blood pressure to be difficult to control and increases the risk of complications and health care costs. Various studies have shown that the success of long-term hypertension therapy is highly dependent on the consistency of patients in carrying out the recommended treatment (Silvianah & Indrawati, 2024; Martell Claros, 2023).

Compliance of hypertensive patients is influenced by various factors, including knowledge, family support, access to health services, and the involvement of health workers. The active role of health workers, especially nurses, is needed to provide education, increase motivation, and help patients manage hypertension independently (Aliyah & Damayanti, 2022; Ayaturahmi et al., 2022).

One of the government programs to support the management of chronic diseases is The Chronic Disease Management Program (Prolanis) through primary health care facilities. Although this program provides education and regular monitoring, its implementation still has limitations because some patients have not attended visits consistently and have not received individual assistance outside of routine puskesmas services. Therefore, a more intensive and sustainable additional mentoring strategy is needed in the patient environment (Aprilian & Siregar, 2023; Massa & Manafe, 2022).

Community nurse assistance can be an approach to overcome these limitations through education, independent blood pressure monitoring, home visits, and providing feedback on patient health behavior. In contrast to routine puskesmas services that are generally carried out during health facility visits, this program provides a more personal and sustainable interaction through direct monitoring in the patient's living environment (Simamora et al., 2025).

Several studies have shown that community nursing interventions through home visits and health education can improve knowledge and support the management of hypertension in the community. However, research on the combination of community nurse intensive care with simultaneous measurement of treatment adherence and blood pressure outcomes, particularly in the context of urban primary care, still needs to be developed (Adawiyah et al., 2023).

In addition to nurse assistance, self-monitoring of blood pressure is also an important component of hypertension self-care, which is recommended in various governance guidelines. A study in primary health care identified that low adherence to hypertension treatment is closely related to the lack of independent Blood Pressure Monitoring habits, lack of family support, and limited continuing education from health workers. This condition causes many hypertensive patients to not routinely monitor blood pressure despite knowing the importance of it. Therefore, self-monitoring programs need to be actively accompanied by health workers so that they can be run consistently by patients (Ihwatun et al., 2020).

International scientific evidence also supports the effectiveness of an independent Blood Pressure Monitoring program that is actively accompanied by health workers. A systematic review and meta-analysis of the use of mobile health for hypertension self-management showed that the intervention was significantly able to lower systolic and diastolic blood pressure compared to



standard treatments. These findings are reinforced by a meta-analysis of individual patient data in hypertensive patients with multimorbidity, which suggests that self-monitoring at home contributes to improved long-term blood pressure control when accompanied by regular feedback from health workers. Both of these evidences reinforce the scientific basis that the combination of health personnel accompaniment and self-monitoring of blood pressure can be an effective strategy to improve the compliance of hypertensive patients (Li et al., 2020; Sheppard et al., 2020).

Based on all these descriptions, it appears that the issue of compliance of hypertensive patients is still a big challenge, especially in the working area of Ahmad Yani Puskesmas Bandung city which is in the middle of high estimates of hypertension cases but low achievement of reported services. Although various studies have proven the benefits of community nurse assistance and blood pressure self-monitoring programs separately, there is still limited research that examines the effect of a combination of both simultaneously on the compliance of hypertensive patients, especially with the design of controlled experiments at the urban primary care level. This study aims to determine the effect of community nurse assistance on treatment adherence and blood pressure of hypertensive patients. The hypothesis of this study is that the group receiving community nurse assistance will experience a greater increase in treatment adherence scores and a greater decrease in blood pressure than the control group.

This research gap is what drives the interest of researchers to further examine the effect of community nurse assistance in the blood pressure self-monitoring program on the compliance of hypertensive patients in the work area of Ahmad Yani Puskesmas Bandung. It is expected that the results of this study can make a practical contribution to the strengthening of community-based hypertension control programs in primary health services.

## **METHODS**

This study is a quantitative study with a quasi-experimental design using pretest-posttest design with a control group. The research was carried out from January to March 2026 in the working area of Uptd Puskesmas Ahmad Yani, Bandung City. The working area of the puskesmas has 1 Posbindu of Non-Communicable Diseases (PTM) which is active and serves hypertensive patients in its foster area. The intervention group and control group came from the same puskesmas working area. The study population is all hypertensive patients who are registered and actively undergoing treatment in the Working Area of Ahmad Yani Health Center. The sample size was calculated using Lemeshow formula for comparative analysis of two independent groups with a significance level of 0.05, power of 80%, Group ratio of 1:1, and taking into account the possibility of subject loss (drop out) of [content]%, so that a total sample of 64 respondents consisting of 32 intervention group respondents and 32 control group respondents was obtained.

The sampling technique uses consecutive sampling, that is, all patients who meet the inclusion criteria sequentially until the number of samples is met. To reduce selection bias, all respondents were selected using the same criteria, while to prevent contamination, the intervention group and control group respondents did not follow the same mentoring activities

and were not in the same educational sessions during the study. Inclusion criteria include patients aged 18-65 years with a diagnosis of primary hypertension based on a doctor's medical record, have been taking antihypertensive drugs for at least one month, have systolic blood pressure of 140-179 mmHg and/or diastolic blood pressure of 90-109 mmHg based, are able to read and write, are willing to carry out independent blood pressure monitoring at home using a digital blood pressure measuring device, and sign informed consent. The exclusion criteria included secondary hypertension, severe complications such as stroke or kidney failure that impede self-monitoring, cognitive impairment, pregnancy, as well as other conditions that caused the respondents to be unable to follow the entire course of the study. Respondents who withdrew or did not complete the study were recorded as loss to follow-up and analyzed according to missing data handling procedures; no replacement of respondents was made after group allocation.

The main variable of the study was treatment adherence, while changes in blood pressure were a secondary outcome variable. Treatment adherence was measured using the Morisky Medication Adherence Scale-8 (MMAS-8) which has been through a validation process in the hypertensive patient population. This instrument consists of eight questions with a total score of 0-8; scores <6 are categorized as low compliance, scores of 6 to <8 medium compliance, and scores of 8 high compliance. The reliability value of the instrument based on validation research is Cronbach's alpha. Blood pressure is measured using a digital tensimeter. Measurements were taken according to home blood pressure measurement guidelines, after respondents rested for at least five minutes in a sitting position, feet on the floor, arms supported at heart level, without smoking, consuming caffeine, or exercising for at least 30 minutes before. Each session is carried out twice measurements with an interval of one minute, then the average values are recorded in the daily monitoring book.

The intervention lasted for eight weeks consisting of initial measurements, assistance for six weeks, and final measurements at Week 8. Assistance is carried out by nurses. Each visit lasts about 30-45 minutes with a frequency of once every week. The mentoring materials use structured educational modules that include hypertension knowledge, medication adherence, lifestyle changes, independent blood pressure measurement techniques, recording measurement results, providing feedback, and motivational techniques to improve compliance. The control group received routine Puskesmas services according to standards, including periodic blood pressure checks, consultations with health workers, routine health education, administration of antihypertensive drugs, and services. The control group received no additional assistance, home visits, or blood pressure monitoring books during the study. The possession of a blood pressure measuring device at home in the control group was noted as a characteristic of the respondents.

Data analysis begins with the distribution of data using Shapiro-Wilk test. Normally distributed Data are presented as the mean of the standard deviation, whereas data that are not normally distributed are presented as the median and interquartile range. Categorical characteristics are presented in frequency and percentage. Changes in compliance scores and blood pressure before and after the intervention in each group were analyzed using the Wilcoxon



test, while the difference in changes between the intervention group and the control group was analyzed using the Mann-Whitney test. All analyses were conducted with two-sided testing, significance level of  $\alpha = 0.05$ , accompanied by statistical reporting of the test, effect size, confidence interval (95% confidence interval), and handling of missing data according to the established analysis procedures. All respondents received an explanation of the purpose, benefits, procedures, potential risks, and the right to refuse or discontinue participation at any time without affecting the health services received. Consent to participate is expressed through the signing of informed consent before data collection is carried out.

## RESULTS

### 1. Characteristics of Respondents

Characteristics of respondents in this study include age, sex, education level, occupation, and long suffering from hypertension, which are presented descriptively to see equality (homogeneity) between the intervention group and the control group before further analysis. Here is the distribution of the characteristics of the respondents in both groups.

**Table 1. Distribution of Respondent Characteristics Based on Intervention and Control Groups (n=64)**

| Characteristics                  | Categories           | Intervention (n=32) f (%) | Control (n=32) f (%) |
|----------------------------------|----------------------|---------------------------|----------------------|
| Age                              | 45-54 years old      | 10 (31,3)                 | 11 (34,4)            |
|                                  | 55-65 years old      | 22 (68,7)                 | 21 (65,6)            |
| Gender                           | Men                  | 13 (40,6)                 | 14 (43,8)            |
|                                  | Girls                | 19 (59,4)                 | 18 (56,2)            |
| Education                        | Primary (SD-SMP)     | 19 (59,4)                 | 18 (56,3)            |
|                                  | High school (SMA-PT) | 13 (40,6)                 | 14 (43,7)            |
| Jobs                             | Works                | 12 (37,5)                 | 13 (40,6)            |
|                                  | Does Not Work        | 20 (62,5)                 | 19 (59,4)            |
| Long Suffering From Hypertension | < 5 years            | 14 (43,8)                 | 15 (46,9)            |
|                                  | - 5 years            | 18 (56,2)                 | 17 (53,1)            |

Based on the characteristics table of respondents, this study involved 64 respondents who were divided into intervention and control groups of 32 respondents each. Most of the respondents were in the age group of 55-65 years, namely 68.7% in the intervention group and 65.6% in the control group. By gender, the majority of respondents were women, with a percentage of 59.4% in the intervention group and 56.2% in the control group. In terms of Education Level, most respondents have low education (elementary-junior high), which is 59.4% in the intervention group and 56.3% in the control group. By occupation, most of the respondents were unemployed,

namely 62.5% in the intervention group and 59.4% in the control group. Meanwhile, based on the duration of hypertension, the majority of respondents had experienced hypertension for 5 years, namely 56.2% in the intervention group and 53.1% in the control group. In general, the characteristics of the respondents in both groups showed almost the same distribution, so that both groups had relatively homogeneous basic characteristics before the intervention.

## 2. Blood Pressure Distribution and Adherence Rate (MMAS-8) of Respondents

A univariate analysis was performed to describe the distribution of blood pressure and the degree of compliance of hypertensive patients before and after the intervention in each group. The results of the univariate analysis are presented in the following table.

**Table 2. Blood Pressure Distribution and Adherence Rate (MMAS-8) of Respondents**

| Variable                        | Groups       | Pretest Mean $\pm$ SD | Posttest Mean $\pm$ SD |
|---------------------------------|--------------|-----------------------|------------------------|
| Systolic blood pressure (mmHg)  | Intervention | 152,4 $\pm$ 8,1       | 134,6 $\pm$ 7,3        |
|                                 | Control      | 151,8 $\pm$ 7,9       | 148,2 $\pm$ 8,4        |
| Diastolic blood pressure (mmHg) | Intervention | 96,2 $\pm$ 5,4        | 85,7 $\pm$ 4,9         |
|                                 | Control      | 95,8 $\pm$ 5,6        | 93,5 $\pm$ 5,2         |
| Compliance Score (MMAS-8)       | Intervention | 4,2 $\pm$ 1,3         | 6,8 $\pm$ 1,1          |
|                                 | Control      | 4,3 $\pm$ 1,2         | 4,5 $\pm$ 1,3          |

Based on table 2, the mean systolic and diastolic blood pressure in the intervention group decreased significantly after being given community nurse assistance (from 152.4 mmHg to 134.6 mmHg for systolic), while in the control group the decrease was relatively small. The mean compliance score (MMAS-8) of the intervention group also increased significantly from the low category (4.2) to the medium-high category (6.8), while the control group tended to stagnate.

**Table 3. Distribution of Compliance Categories Based on MMAS-8**

| Compliance Categories | Pretest Intervention Group | Posttest Intervention Group | Pretest Control Group | Posttest Control Group |
|-----------------------|----------------------------|-----------------------------|-----------------------|------------------------|
| Low                   | 22 (68,8)                  | 7 (21,9)                    | 21 (65,6)             | 19 (59,4)              |
| Medium                | 8 (25,0)                   | 9 (28,1)                    | 9 (28,1)              | 10 (31,3)              |
| Height                | 2 (6,2)                    | 16 (50,0)                   | 2 (6,3)               | 3 (9,3)                |
| Total                 | 32 (100)                   | 32 (100)                    | 32 (100)              | 32 (100)               |

Based on table 3 reinforces this picture, where the proportion of respondents with low compliance in the intervention group decreased sharply from 68.8% to 21.9%, while in the control group the proportion of low compliance still remains high at 59.4%. Descriptively, these findings indicate that there is a greater trend of improvement in compliance in the group that received community nurse assistance than the group that only received puskesmas standard services.



### 3. Effect of Community Nurse Assistance in the Blood Pressure Self-Monitoring Program on the Compliance of Hypertensive Patients

Bivariate analysis was performed to test the significance of differences in blood pressure and adherence scores before and after the intervention in each group (Wilcoxon test), as well as to test the difference in effectiveness between the intervention group and the control group (Mann-Whitney test). The results of bivariate analysis are presented in the following table.

**Tabel 4. Wilcoxon Test Results Blood Pressure Difference and Compliance Score**

| Variable                  | Groups       | Mean Pretest | Mean Posttest | Difference | p-value |
|---------------------------|--------------|--------------|---------------|------------|---------|
| Systolic Blood Pressure   | Intervention | 152,4        | 134,6         | -17,8      | 0,000   |
|                           | Control      | 151,8        | 148,2         | -3,6       | 0,102   |
| Compliance Score (MMAS-8) | Intervention | 4,2          | 6,8           | +2,6       | 0,000   |
|                           | Control      | 4,3          | 4,5           | +0,2       | 0,421   |

The results of the Wilcoxon test in table 4 showed that in the intervention group there was a significant difference between the pretest and posttest values, both in systolic blood pressure ( $p=0.000$ ) and compliance scores ( $p=0.000$ ), which means that community nurse assistance in the blood pressure self-monitoring program effectively lowers blood pressure and improves patient compliance. In contrast, in the control group no significant differences were found in both blood pressure ( $p=0.102$ ) and compliance scores ( $p=0.421$ ), indicating that without intensive assistance, improvements in compliance and blood pressure control are less likely to be statistically significant.

**Tabel 5. Mann-Whitney Test Results Comparative Difference (Delta) Blood Pressure and Compliance Scores**

| Variable                  | Delta Intervention (Mean) | Delta Control (Mean) | p-value |
|---------------------------|---------------------------|----------------------|---------|
| Systolic Blood Pressure   | -17,8                     | -3,6                 | 0,000   |
| Diastolic Blood Pressure  | -10,5                     | -2,3                 | 0,000   |
| Compliance Score (MMAS-8) | +2,6                      | +0,2                 | 0,000   |

The results of the Mann-Whitney test in table 5 showed that the difference (delta) in blood pressure reduction and increase in compliance scores between the intervention group and the control group was significantly different ( $p=0.000$  for all variables). Delta values in the intervention group were much larger than in the control group, both in systolic blood pressure, diastolic, and MMAS-8 compliance scores.

## DISCUSSION

Based on the results of Table 2, it appears that at the initial stage of the study the mean systolic blood pressure of both groups ranged from 151.8 to 152.4 mmHg, a figure that puts the

respondents in the range of hypertension degree 1 close to degree 2 according to the internationally accepted classification of blood pressure. This indicates that most of the respondents have not succeeded in achieving the ideal blood pressure control targets despite previous antihypertensive therapy. The high initial figures also indicate that the treatment of hypertension in respondents requires additional approaches beyond mere drug therapy so that blood pressure can be better controlled.

The intervention group showed a significant reduction in systolic blood pressure, from 152.4 mmHg at pretest to 134.6 mmHg at posttest. The findings reinforce evidence from a large-scale randomized clinical trial, in which the combination of self-monitoring of blood pressure at home with the active accompaniment of health workers was shown to consistently lower systolic blood pressure in patients who had not previously been well controlled. The magnitude of this decrease indicates that the role of nurses in following up on the results of self-measurement of patients has a real impact on improving their health condition. Researchers suspect that this achievement is the result of a combination of improved adherence to taking medication and lifestyle changes that continue to be encouraged through education during the visit.

The improvement in treatment adherence in the intervention group is in line with previous studies showing that the active involvement of health workers, especially nurses, is able to improve the adherence of hypertensive patients. Hwang and Chang (2023) report that monitoring and education-based nursing interventions increase patient involvement in the management of hypertension. Similarly, Ojo et al. (2023) found that nurse-led interventions provide better outcomes than standard services in improving therapy adherence. The findings of this study are also consistent with the research of Agidew et al. (2023) who demonstrated that increased self-efficacy through continuous mentoring contributes to changes in compliance behavior. Thus, the results of this study reinforce the evidence that treatment adherence is influenced not only by Drug Administration, but also by ongoing support, education, and monitoring.

In addition to improving compliance, the intervention also resulted in a greater reduction in blood pressure compared to the control group. The decrease was not only statistically significant, but also had clinical significance as the intervention group's mean blood pressure shifted from the category of uncontrolled hypertension towards a range closer to the control target. These changes are important considering that any decrease in systolic blood pressure has been known to be associated with a reduced risk of cardiovascular complications such as stroke, coronary heart disease, and heart failure. In contrast, changes in the control group were relatively small, indicating that routine services alone were not enough to produce optimal blood pressure control in the study period.

This finding is in line with the research of McManus et al. (2021), Li et al. (2020), as well as a meta-analysis of Hwang and Chang (2023) which reported that the combination of independent Blood Pressure Monitoring and follow-up of health workers was more effective than conventional services in controlling blood pressure. The similarity of these results indicates that the effectiveness of the intervention depends not only on the use of blood pressure measuring



instruments, but also on the presence of feedback and accompaniment that help the patient maintain the correct treatment behavior.

The mechanisms underlying the success of these interventions are likely multifactorial. Community nurse assistance can improve patient knowledge about hypertension, strengthen motivation to take medication regularly, improve the ability to self-monitor, and encourage lifestyle changes such as reduced salt consumption, increased physical activity, and adherence to routine controls. However, this study did not directly measure changes in these factors so the mechanism is still a conjecture supported by the theory of behavior change and the results of previous studies. Therefore, the causal relationship between these mechanisms needs to be confirmed through further research.

The results of this study have important implications for Community Nursing Practice. Assistance by nurses can be integrated into hypertension services in health centers, especially through the Chronic Disease Management Program (Prolanis). Community nurses play a role in providing education, monitoring the results of independent blood pressure measurements, identifying compliance barriers, providing behavioral reinforcement, and conducting regular follow-up. The integration of these strategies has the potential to increase the effectiveness of Prolanis in achieving hypertension control targets and reducing the risk of cardiovascular disease complications in the community.

This research has several strengths. The design of the study used intervention groups and control groups so as to allow a better evaluation of the effectiveness of the intervention. In addition, the study assessed two important outcomes at once, namely medication adherence and blood pressure, thus providing a more comprehensive picture of the impact of community nurse assistance.

Nevertheless, this study also has limitations. The duration of intervention is relatively short, so it has not been able to describe the sustainability of compliance and blood pressure control in the long term. Treatment adherence was measured using the MMAS-8 questionnaire which relies on respondents' self-reports and thus still has the potential to cause information bias. In addition, studies have not evaluated other factors that may affect blood pressure, such as the type of antihypertensive medication, comorbidities, diet, physical activity, or family support.

Based on these limitations, subsequent studies are suggested to use a longer follow-up period to assess the sustainability of the intervention effect. Subsequent research will also need to evaluate factors that mediate the relationship between caregiver accompaniment, medication adherence, and blood pressure control, including self-efficacy, health literacy, family support, and lifestyle changes. In addition, the development of a digital technology-based mentoring model integrated with Prolanis deserves to be evaluated to improve the effectiveness of hypertension management in primary health care.

## CONCLUSIONS

The accompaniment of community nurses in blood pressure self-monitoring programs is associated with greater improvements in medication adherence and blood pressure compared to standard care. Before the intervention, most respondents in both groups had low levels of treatment adherence; after the intervention, the group receiving assistance showed a decrease in the proportion of low adherence as well as a significant increase in MMAS-8 scores, while the control group showed no meaningful change. It should be emphasized that these findings refer to treatment adherence as measured by MMAS-8; adherence to self-monitoring of blood pressure itself (e.g. consistency of daily recording in the monitoring book) was not statistically analyzed in this study, so the effect has not been concluded, and the potential benefits of self-monitoring on compliance and long-term clinical outcomes still require further research.

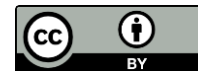
These findings support the potential role of community nurses in strengthening treatment adherence of hypertensive patients in primary health care, but a number of limitations need to be considered, namely the relatively small number of samples, implementation in one health facility that limits generalization of results, short follow-up duration, and the use of self-report instruments (MMAS-8) that have the potential to cause response bias. Therefore, before being routinely integrated into primary health care, it is advisable to first conduct pilot implementation studies or multisite studies with larger samples, longer follow-up duration, and a combination of subjective and objective compliance measurements, in order to obtain stronger evidence of effectiveness and feasibility of implementation.

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