Culturally appropriate hypertension care: from patients' perspectives towards practical tools
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Barriers and enablers in the implementation of a provider-based intervention to stimulate culturally appropriate hypertension education

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Abstract

Objective
To identify barriers and enablers influencing the implementation of an intervention to stimulate culturally appropriate hypertension education (CAHE) among health care providers in primary care.

Methods
The intervention was piloted in three Dutch health centers. It consists of a toolkit for CAHE, training, and feedback meetings for hypertension educators. Data were collected from 16 hypertension educators (nurse practitioners and general practice assistants) during feedback meetings and analyzed using qualitative content analysis.

Results
Perceived barriers to the implementation of the intervention fell into three main categories: political context (health care system financing); organizational factors (ongoing organizational changes, work environment, time constraints and staffing) and care provider-related factors (routines, attitudes, computer and educational skills and cultural background). Few barriers were specifically related to the delivery of CAHE (e.g., resistance to registering ethnicity). Enabling strategies addressing these barriers consisted of reorganizing practice procedures, team coordination, and providing reminders and additional instructions to hypertension educators.

Conclusion and practice implications
The adoption of a tool for CAHE by care providers can be accomplished if barriers are identified and addressed. The majority of these barriers are commonly associated with the implementation of health care innovations in general and do not indicate resistance to providing culturally appropriate care.
Introduction

In Western countries, ethnic minority populations of African descent are disproportionately affected by hypertension and hypertension-related cardiovascular morbidity and mortality. This has also been observed among two major immigrant groups of African descent in the Netherlands: African-Surinamese from the former Dutch colony of Suriname (hereafter, Surinamese) and Ghanaians. Insufficient adherence to antihypertensive medication and lifestyle changes is one important explanation for the observed ethnic disparities in blood pressure control and negative hypertension outcomes. Enhancing adherence to prescribed antihypertensives and lifestyle changes in ethnic minorities is, therefore, an important challenge for health care providers.

In the Netherlands, general practitioners (GPs) play an important role in hypertension treatment. European and Dutch hypertension guidelines advise patient education as a means for improving adherence. Patient beliefs have a major impact on adherence and these beliefs may, in turn, affect outcomes. Therefore, hypertension guidelines recommend the use of patient-centered educational approaches and to explore the beliefs and needs of individual patients in order to find a common ground regarding treatment. There is increasing evidence that patients’ beliefs about hypertension and treatment may differ among ethnic groups. This was also found in studies among Surinamese and Ghanaian hypertensive patients living in the Netherlands. Even though there is increasing evidence that culturally appropriate patient education may positively influence medication use and lifestyle changes in ethnic minority patients, the literature provides few specific examples or evaluations of the uses of this method in hypertension care. For that reason, we developed a provider intervention to facilitate the delivery of culturally appropriate hypertension education (CAHE) in primary care.

Implementation researchers have reported extensively about common factors that may hamper or facilitate the adoption of innovations in medical practice. Such factors may be associated with political and cultural fit, available resources, the expertise required from the users, or how well the intervention fits into an organization’s current practices. Furthermore, the particular characteristics of the intervention itself may influence implementation. Thus, before the effect of a provider-based intervention on patient outcomes can be studied, one important but often overlooked question that should be addressed is whether they can be applied in practice.

For this reason we conducted a pilot study with the aim of identifying factors that might hamper or enable the adoption of a culturally appropriate approach to hypertension education in a primary care setting.
Methods

Setting
The intervention was piloted in three primary care health centers (PCHCs) in southeast Amsterdam between September 2006 and May 2008. All three PCHCs had participated in a previous study 22-24, 32 and volunteered to pilot the intervention. It is estimated that 26% of the 24,094 registered at these centers are of African-Surinamese and Ghanaian origin (data are from 2007). All three centers used a similar protocol for hypertension care, based on the guidelines of the Dutch College of General Practitioners from 2006 12. In the three centers in question the task of providing hypertension education to patients with uncomplicated hypertension was assigned to nurse practitioners (NPs) and general practice assistants (GP assistants), working under the supervision of GPs. For GP assistants, hypertension education was typically a new task that had not been assigned to them in previous hypertension protocols. The intervention was targeted at all health care providers who provide hypertension education to patients with uncomplicated hypertension (K86): 7 NPs, 18 GP assistants and 22 supervising GPs.

Intervention
The aim of the intervention was to enhance provider knowledge of the relationship between sociocultural factors and patient beliefs and behaviors with respect to hypertension management, and to equip providers with the tools and skills to manage these factors during patient education. Implementation strategies were developed in cooperation with three GPs and three NP/GP assistants from participating PCHCs. This approach was chosen to ensure that the intervention would fit the patient population and the regular working methods of the practices, which is considered important for the acceptance and success of innovations 33.

The intervention consisted of six tools to facilitate a culturally appropriate approach to hypertension education and counseling, including: (1) a topic list to explore the patient’s ideas, concerns and expectations regarding hypertension and hypertension treatment (Box 1: Ad. 1); (2) a topic list to explore culturally specific inhibitors and enablers of adherence to hypertension treatment (Box 1: Ad. 2). The items on these lists were derived from the work of Kleinman 34, 35, recent approaches to improving adherence 14, 36, 37, and our prior study 22-24; (3) a topic list to facilitate the recognition of specific inhibitors to hypertension management in Surinamese and Ghanaian patients, based on our prior study 22-24; (4) a list of specific items to register the results of hypertension counseling sessions; (5) information leaflets for Surinamese or Ghanaian patients with answers to frequently asked questions about hypertension. Leaflets were adapted to the language, customs, habits, norms and dietary cultures of the Surinamese and Ghanaian communities 22-24, and pre-tested in two focus groups with Surinamese and Ghanaian hypertensive
### Box 1 Topic list for eliciting immigrant patients’ explanatory model of hypertension and hypertension management

<table>
<thead>
<tr>
<th><strong>Communication</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Determine how a patient wants to be addressed (formally or informally)</td>
</tr>
<tr>
<td>• Determine the patient’s preferred language for speaking and reading (Dutch or another language)</td>
</tr>
<tr>
<td>• Use this information in your interaction with the patient</td>
</tr>
</tbody>
</table>

**Introduction**
- It is often difficult for us (care providers) to give advice about hypertension and how to manage it if we are not familiar with the views and experiences of our patients. For that reason I would like to ask you some questions to learn more about your own views on hypertension and its treatment.

**Ad 1. Elicit personal views on hypertension and its treatment**

**Understanding**
- What do you understand hypertension to mean?

**Causes**
- What do you think has caused your hypertension? Why did it occur now/when it did; why to you?

**Meaning and symptoms**
- What does it mean to you to have hypertension?
- Do you notice any symptoms of your hypertension? How do you react when you do?

**Duration and consequences**
- How do you think your hypertension will develop further? How severe is it?
- What consequences do you think your hypertension may have for you (physical, psychological, social)?

**Treatment**
- What types of treatment do you think would be useful?
- What does the prescribed therapeutic measurement(s) mean to you?

**Ad 2. Elicit contextual influences on hypertension management**

**Social**
- Do you speak with family/community members about your hypertension? How do they react?
- Do family/community members help you or make it difficult for you to manage hypertension? Please explain.

**Culture/Religion**
- Are there any cultural issues/religious issues that may help you or make it difficult for you to manage hypertension? Please explain.

**Migration**
- Are there any issues related to your position as an immigrant that make it difficult for you to manage hypertension? Please explain.

**Finance**
- Are there any issues related to your financial situation that make it difficult for you to manage hypertension? Please explain.

Based on Kleinman’s Explanatory Model format and our previous study.
patients; (6) a referral list, including neighborhood facilities offering healthier lifestyle support, tailored to Surinamese and Ghanaian patients. These tools were supplemented to the standard hypertension protocol used in the practices. They were made available through pop up screens in the digital hypertension protocol that could be accessed on the intranet of the practices and also on paper.

To maximize the application of the toolkit and remove potential barriers to the adoption of the tools three implementation support strategies were used, which were informed by theories regarding the principles of effective change in medical care 28, 29, 38.

- **Discussion meetings with GP teams.** In order to identify potential barriers to the implementation of the new tools in each health center and to reach a consensus about how these barriers could be overcome, information meetings (lasting 1 h) with the GP teams were held prior to the intervention. Eighteen GPs attended five meetings. Some of the topics upon which consensus was reached included: an interpretation of the key principles of the recently introduced CVRM guideline by the Dutch College of General Practitioners 12; a translation of this guideline into a common hypertension protocol to be used in the three PCHCs; the extension of the common hypertension protocol with recommendations for CAHE; task delegation among GPs, NPs and GP assistants and how GPs could support GP assistants so that they could perform their task as hypertension educators (e.g. by working in fixed pairs with GPs and by receiving additional education in hypertension management from GPs) (see Table 1).

- **Training for counselors.** To facilitate the use of the toolkit, we developed a training course of two half-day sessions for all NPs and GP assistants at the intervention centers. The GPs were not invited because nearly all of them had completed somewhat similar training, organized by the PCHCs at an earlier stage. During the first session information about the prevalence and treatment of hypertension among populations of African origin in Western countries was provided and discussed. There was also discussion of how the tools could be used. The second session consisted of training in culturally sensitive counseling skills, through role-playing exercises with Surinamese and Ghanaian hypertensive patients. The educational materials provided consisted of a course manual and instructions for use of the new tools. All but two of the invited NPs and GP assistants attended the course (n = 23/25) in April 2006.

- **Feedback to counselors.** As a second supportive intervention, the primary researcher (EB) organized a series of collective feedback meetings for NPs and GP assistants at their health center to support them in implementing the tools described in the protocol. The meetings took place after the consensus about the implementation of the protocol had been reached with the GP’s, counselors had been given training and the protocol had been posted on the intranet of the practices. Meetings were held once every two months and lasted 1.5 hours. NPs and GP assistants were also able to request individual advice. After every meeting the GPs received feedback about the conclusions reached and about potential obstacles to the implementation of the toolkit.
Population and data collection

A qualitative research design was used to collect and analyze the data. Data were collected in three PCHCs from attendees of the feedback meetings about the implementation of the tools: 16 NPs and GP assistants (hereafter, nurses) attended 7 collective feedback meetings and 7 nurses attended one or two individual coaching sessions. The period of data collection varied from four months (the shortest period) in one center to 6 months (the longest period) in another. This variation can be attributed to the fact that in some centers, due to technical circumstances, posting of the hypertension protocol on the intranet was delayed. The feedback meetings were led by a topic guide, with thematic, open-ended questions. In the collective meetings participants were asked to describe the barriers they perceived to using some or all of the protocol and what might support the use of the protocol in their daily practice. In some of the meetings participants’ video recordings of consultations with Ghanaian or Surinamese hypertensive patients were used to answer these questions. In the individual consultations participants were invited to discuss barriers they experienced in using the toolkit and what would be needed to

<table>
<thead>
<tr>
<th>Themes</th>
<th>Identified barrier</th>
<th>Activity</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>New national CVRM guideline for GPs</td>
<td>Lack of consensus in GP team about key principles: GPs are still adjusting to new guideline</td>
<td>Facilitate discussion in GP team about key principles</td>
<td>Consensus about the use of CVRM guideline and common HTN protocol</td>
</tr>
<tr>
<td>Extension of common HTN protocol with recommendations for CAHE</td>
<td>None</td>
<td>None</td>
<td>Consensus that common HTN protocol would be extended with recommendations for CAHE</td>
</tr>
<tr>
<td>Division of tasks related to HTN education</td>
<td>Lack of clarity and acceptance about task delegation from GP to NPs and GP assistants</td>
<td>Involve target groups: - discuss tasks and responsibilities of GPs, NPs and GP assistants in project - elicit ideas about barriers to change</td>
<td>Consensus about task description and role of GP assistants in HTN education</td>
</tr>
<tr>
<td></td>
<td>No clear demarcation of responsibilities and concerns about role of GP assistants in HTN education</td>
<td>Negotiate prerequisites for GP assistants</td>
<td>GP assistants own patient file</td>
</tr>
<tr>
<td></td>
<td>Lack of facilities for GP assistants to provide HTN education</td>
<td>GP assistants more time for consultation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GP anxiety about losing control of treatment</td>
<td>GP assistants and GP work in fixed pair to ensure mutual feedback</td>
<td></td>
</tr>
<tr>
<td>Competencies of HTN educators</td>
<td>Lack of basic knowledge about HTN among GP assistants</td>
<td>Training of GP assistants by GPs</td>
<td>Increased basic HTN knowledge</td>
</tr>
</tbody>
</table>

HTN, hypertension; CAHE, culturally appropriate hypertension education
overcome these barriers. All collective meetings were audio recorded and notes of all individual contacts were made.

Data analysis
Data consisted of transcripts of the collective discussion meetings and written notes and conclusions from individual contacts. In order to verify content validity, all of the documents were sent back to the participants for member checks. Transcripts and notes were then imported into Maxqda, a computer program to assist qualitative data analysis, and analyzed for thematic content. In the first stage of this analysis, all text files were read through in order to form a general picture of the execution of the implementation process. All fragments containing information about experiences with the use of a culturally appropriate approach to hypertension education were selected. Then, lists of categories and subcategories were created, indicating the factors influencing implementation. Next, these categories and subcategories were sorted into two groups: barriers to the implementation of the toolkit and activities that were suggested or undertaken to remove these barriers (enablers). Finally, the categories and subcategories were merged into a matrix that included barriers and related enabling activities for addressing these barriers.

E.B. coded and analyzed the data and established the matrices. J.H. reviewed the matrices to verify the identified categories and subcategories in the qualitative analysis. Differences in interpretation were resolved by going back to the data and seeking consensus through discussion. The plausibility of the results was also checked by presenting the final matrices and conclusion to a project group. At the end of the project, the plausibility of the findings was discussed with a panel of experts.

Ethical considerations
The study protocol was submitted to the Medical Ethical Committee of the Academic Medical Center of the University of Amsterdam. The committee established that the study does not fall within the realm of the Dutch law on medical research with humans because it does not include medical interventions or invasive measures with humans. For that reason, the committee sent a letter stating that the study did not require further assessment and approval from the Medical Ethical Committee of the Academic Medical Center nor from any other officially accredited medical ethical research committee in the Netherlands (reference number 09171260). In line with the AMC code of good conduct in medical research, provisions were made to assure the anonymity of the respondents in the collection, analysis and presentation of the data.
Table 2: Identified contextual barriers to and enablers of the implementation of culturally appropriate hypertension education

<table>
<thead>
<tr>
<th>Category</th>
<th>Identified barrier</th>
<th>Strategy</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Political context</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New national policy for financing health care system</td>
<td>Less financial support for innovations: loss of motivation and concerns about reimbursement</td>
<td>Facilitate registration and declaration of extra time spent on HTN education</td>
<td>Fewer concerns about financial consequences of the application of new protocol</td>
</tr>
<tr>
<td><strong>Organizational factors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ongoing organizational changes</td>
<td>Technical and organizational problems with the introduction of a new system for electronic patient registration</td>
<td>Postpone implementation</td>
<td>Delay</td>
</tr>
<tr>
<td></td>
<td>Move to other building (one health center)</td>
<td>Postpone implementation</td>
<td>Delay</td>
</tr>
<tr>
<td><strong>Environment</strong></td>
<td>GP assistants no access to private room</td>
<td>Seek adequate room for patient education</td>
<td>Quiet workplace for GP assistant</td>
</tr>
<tr>
<td><strong>Time constraints</strong></td>
<td>GP assistants must provide ad hoc assistance to GP</td>
<td>Stepwise implementation: use new protocol for newly diagnosed patients first</td>
<td>Prevention of overload of nurses</td>
</tr>
<tr>
<td></td>
<td>GP assistants must provide ad hoc assistance to GP</td>
<td>Arrange clear role for GP assistant in care process for HTN patient</td>
<td>GP assistant more time to provide HTN education</td>
</tr>
<tr>
<td></td>
<td>No replacement of sick NP or GP assistant</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td><strong>Staff</strong></td>
<td>High turnover of GP assistants</td>
<td>Support knowledge transfer about program for new staff</td>
<td>Study materials available to new staff</td>
</tr>
<tr>
<td><strong>Care provider-specific factors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capabilities</td>
<td>Lack of computer skills and skills using EMRs</td>
<td>Provide practical tools and individual coaching</td>
<td>Better access to digital protocol</td>
</tr>
<tr>
<td></td>
<td>Lack of basic HTN knowledge by GP assistants</td>
<td>Facilitate feedback by GP (continuous medical education)</td>
<td>Increased use of protocol and EMR</td>
</tr>
<tr>
<td></td>
<td>Insufficient skills for patient education of GP assistants</td>
<td>Provide video feedback</td>
<td>Improved HTN knowledge by GP assistants</td>
</tr>
<tr>
<td>Routines</td>
<td>Relapsing into old routines</td>
<td>Provide reminders, checklists, reflections (e.g. video feedback)</td>
<td>More routine to use new protocol</td>
</tr>
<tr>
<td></td>
<td>Relapsing into old routines</td>
<td>Facilitate feedback by GP</td>
<td>More insight into old routines and professional attitudes</td>
</tr>
<tr>
<td>Attitudes</td>
<td>Resistance to innovations in general</td>
<td>Acknowledge and discuss reasons for resistance</td>
<td>Emphasis on the more motivated participants</td>
</tr>
<tr>
<td></td>
<td>Ambivalence about registering ethnic background</td>
<td>Discuss pros/cons of registering ethnicity</td>
<td>Increased registration of ethnicity</td>
</tr>
<tr>
<td>Cultural background</td>
<td>Socially desirable behavior of Surinamese patients</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

HTN, hypertension; EMR, electronic medical record
Results

Three major categories that describe the barriers health care providers experienced in adopting a culturally appropriate approach to hypertension education were identified: (1) national political context; (2) organizational factors; and (3) care provider-related factors. Each category included a number of subcategories specifying the barrier. Table 2 summarizes these categories as well as the enabling strategies that were undertaken to address the identified barriers.

National political context

**Barriers**

Six months after the start of this project a new policy for the financing of the health care system was introduced in the Netherlands. As a result of this policy, health care centers were no longer given structural funding for quality improvements, and GPs were encouraged to cut costs by increasing their productivity. This has led to an increased workload for both GP assistants and NPs. As a result, some of them were less motivated to participate in quality improvement projects like the present one. Concerns were raised that quality improvement was no longer reimbursable.

**Enablers**

To address these concerns we advised the nurses to record the time they spent on hypertension education as accurately as possible. This data could serve as baseline information for finding other means of reimbursement.

Organizational factors

**Barriers**

At the start of this project the PCHCs were introducing a new system for electronic patient registration. The hypertension protocol and culturally sensitive tools could be accessed through this system. Due to technical and organizational problems it took some time before health care providers were able to access the new system in the practices. This also delayed the availability of the digital tools.

Lack of access to a private room limited GP assistants in their efforts to provide high quality hypertension education to patients.

Time constraints were also a major obstacle for GP assistants because: (a) their current case load did not allow them to spend extra time on patient education; (b) they support the work of GPs and are not always able to set their own agenda. As a result they were sometimes asked to provide ad hoc assistance to GPs (e.g. urinalysis, emergencies) while they were engaged in patient education; and (c) they often had to replace colleagues who were ill or who had left their job.

The high turnover rate among GP assistant staff also hampered implementation.
Enablers
To ensure a suitable environment for patient education, provisions for a quiet workplace for GP assistants were made.
To reduce time-related obstacles for GP assistants, special arrangements were made with the GPs. For example, GP assistants were allowed to block out time in their schedule for the provision of CAHE during which they could not be asked to perform other activities.
To support knowledge transfer about the project to new personnel, written instruction materials and a take-home CD were made available for practice at home.

Care provider-specific factors

Barriers
Some of the observed obstacles to the application of the toolkit were related to the skills, knowledge, routines, attitudes or cultural background of the participating GP assistants and the NPs.
Despite the fact that almost all participants had attended the training course on using the new tools, some of them reported they were not yet capable of using them properly. Several reasons were given for this, including a lack of basic computer skills needed for accessing and using the digital tools and for the registration of the results of hypertension counseling sessions in the electronic medical record. Some GP assistants felt they were also lacking basic skills in patient education (e.g. how to use the patients’ explanatory model in patient education) and basic knowledge of hypertension.
Having to change existing routines was identified as another barrier. The new method of hypertension education required an approach that was different from the one they were used to, “listening to a patient rather than offering an immediate solution.” Many GP assistants kept falling back into old routines.
Some barriers were related to the attitudes of care providers. Discussion and analysis of experiences with applying the tools in patient care was one of the strategies used to enhance implementation. Some of the GP assistants were reluctant to do this, as they were afraid of criticism. Some expressed a negative attitude towards innovations in general because of the overwhelming number of new guidelines in primary care. In the Netherlands, physicians are not required to register the ethnic background of their patients. However, the new protocol recommended asking about and registering the ethnic background of patients. Some participants thought registration by ethnicity was not necessary because all patients are the same. Others hesitated to register the ethnic background of their patients because they felt this could contribute to discrimination or stigmatization on the basis of race.
Some GP assistants of Surinamese origin felt that their cultural background could serve as an obstacle to communication with Surinamese patients. One of their observations was that Surinamese patients tended to give socially desirable answers to nurses from their own community in order to avoid gossip.
**Enablers**

Barriers to the application of the protocol were addressed by the provision of additional practical tools (e.g. (abbreviated) written instructions on how to access the digital protocol for those who were reluctant to use the digital protocol). Next, to improve their knowledge of hypertension, GP assistants were offered an opportunity to receive regular feedback from their supervising GP. Finally, to address the reported communication barriers, nurses were asked to record some of their consultations with Ghanaian and Surinamese patients on videotape. Subsequently, in reflective meetings, those communication barriers were discussed. Some Surinamese GP assistants felt that a shared cultural background with Surinamese patients could be an enabling factor rather than an obstacle to communication, as it could mean better mutual understanding of Surinamese customs (e.g. diet, herbal remedies) or a greater readiness on the part of patients to talk about using these customs in hypertension management.

As Table 2 shows, many of the enabling strategies that were undertaken succeeded in removing barriers to the adoption of the tools. But some structural barriers related to financial resources, staffing issues and the cultural background of the hypertension educator could not be addressed.

**Discussion and conclusion**

**Discussion**

We developed a provider-based intervention to enhance culturally appropriate hypertension education (CAHE) in a primary care setting. The intervention consisted of a toolkit and an educational course and discussion and feedback meetings to facilitate the use of these tools.

In line with previous studies, our pilot in three Dutch PCHCs shows that the implementation of programs to change health care providers’ competence and performance in routine clinical care is a complex and dynamic process, one which does not occur spontaneously and needs continuous attention. Health care providers in this study experienced a series of barriers hampering the use of new tools for CAHE. These barriers were related to the national political context, organizational factors and to characteristics of the care providers. A significant finding is that only a few barriers were specifically related to problems with applying a culturally adapted approach to hypertension education. One of the most important barriers in this respect was a reluctance to register a patient’s ethnicity. Most barriers were more general, and were similar to the problems that have been commonly observed in studies evaluating the implementation of quality improvement tools in routine clinical practice. The study also identified a number of strategies that were useful to address the barriers. Some important strategies were: phasing the implementation process; adapting practice procedures (e.g. a clear division of labor, finding suitable
space, allowing for longer appointment times); the provision of additional instructions and coaching to improve skills and discussing resistance to change. Yet, some barriers could not be addressed within the confines of this intervention (e.g. staff shortages).

Our study has some methodological strengths and limitations. Based on evidence based recommendations with regard to the planning and study of improvements in patient care, we implemented the intervention using an action-oriented design. An advantage of this approach was that it offered us the possibility of uncovering barriers to implementation as well as actions that could be relevant to enabling solutions adapted to the local context. As a consequence of this choice, however, the researcher had the role of both observer and interventionist. This may have influenced the reliability and validity of the research findings. However, to ensure content validity we used member checks of the collected data. Also, during the analysis data from different sources (e.g. discussion meetings, video registration, individual consultations) were compared to find similarities and differences (triangulation) and preliminary findings and conclusions were reviewed by and discussed with a second researcher and the project committee. In the final stage of the study, findings and conclusions were discussed in an expert meeting to check plausibility. A limitation of our study was the limited data on the actual delivery of patient education in practice. Although the video-registrations provide clear insights into how education was delivered, only a select group (those who volunteered) was willing to record their consultations with patients. Furthermore, due to the aforementioned technical problems and resistance, registration forms from consultations were not consistently filled out by health care providers. In future studies, provisions should be made that allow for a more systematic registration of data from hypertension education sessions. Finally, as it was our aim to collect data about the feasibility of the implementation of the intervention in practice, we did not collect data on how patients experienced the new hypertension education.

Based on implementation theories, in this project we adapted the intervention as much as possible to the working methods of the PCHCs involved. We wanted to ensure that all of the health care providers involved in hypertension care would be able to provide the new hypertension education; however, the results of this study suggest that some health care providers (NPs and some interested GP assistants) were better suited for this task than others. One drawback for GP assistants was that hypertension education was typically a new task for them, for which they had not received much previous education. This implies that adoption of this intervention may be more successful if it is targeted to a limited number of providers with a special interest in, motivation and talent for CAHE.

**Conclusion**

This is one of the first attempts to develop and evaluate the implementation of an intervention to facilitate CAHE in routine primary care. Our pilot study shows that health care providers can adopt the toolkit if certain barriers are addressed during the implementation period. Our study also reveals that many of the barriers to the implementation are not
specific to an intervention that promotes culturally appropriate education, but are similar
to the type of obstacles that are commonly encountered when innovations are introduced
in primary care \(^{30, 42}\).

**Practice implications**

Most barriers to the implementation of tools for culturally appropriate care do not indicate
a resistance to it; they are not significantly different than barriers to the implementation
of other tools for quality improvement (e.g., clinical guidelines). Therefore, developers of
quality improvement programs should not hesitate to develop innovations to stimulate
culturally appropriate care.

The elements of the intervention we developed in this study are well described (toolkit,
course and supportive feedback meetings) and transferable. These elements may be used
as baseline information or as a prototype for other health care centers or researchers
who want to develop interventions to stimulate a culturally appropriate approach to
hypertension education for ethnic minority populations.

The implementation of any innovation in health care requires the construction of an
evidence based implementation plan describing the potential barriers that may be expected
during implementation and how they may be addressed \(^{43}\). The barriers and enablers
identified in this study (Table 2) provide useful data for constructing an implementation
plan for interventions to stimulate culturally appropriate care.

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Reference List


