Blood pressure reduction in barbershops

Victor RG, Lynch K, Li N, Blyler C, Muhammad E, Handler J, Brettler J, Rashid M, Hsu B, Foxx-Drew D, Moy N, Reid AE, Elashoff RM. (Smidt Heart Institute at Cedars–Sinai Medical Center, the Department of Biomathematics, David Geffen School of Medicine, University of California, Los Angeles, Kaiser Permanente, Los Angeles, USA.) A cluster-randomized trial of blood pressure reduction in black barbershops. *N Engl J Med* 2018;**378:**1291–301.

SUMMARY

In a cluster-randomized trial of 319 black men with systolic blood pressure >140 mmHg attending 52 black-owned barbershops, the authors assessed the impact of an intervention supervised by a pharmacist (*n*=139) versus an active control approach (*n*=180) on the reduction in systolic blood pressure at 6 months. To be eligible for inclusion, the subjects had to be regularly attending a particular participating barbershop (≥1 haircut every 6 weeks for ≥6 months) and systolic blood pressure >140 mmHg on two screening days. In the first group, trained pharmacists prescribed drug therapy after meeting with the subjects in barbershops, whereas in the control group the subjects were educated by the barbers about blood pressure, and actively encouraged to modify lifestyle and keep regular appointments with the doctor. The pharmacists interacted with the subjects at the barbershops, prescribed medicines and when required changed/intensified therapy keeping the primary healthcare physicians informed of the clinical progress. According to the protocol, the patients were prescribed two drugs, either amlodipine and a long-acting angiotensin-receptor blocker (ARB) or angiotensin-converting enzyme (ACE) inhibitor. If a third or fourth drug was deemed to be required, indapamide (a long-acting thiazide-type diuretic) or an aldosterone antagonist, respectively, was prescribed by the pharmacists. The target goal for blood pressure was kept at 5 mmHg lower (for systolic/diastolic) as compared to the usual out-of-office goal of 135/85 mmHg to take into account variability in measurement.

The baseline systolic blood pressure was similar in the two groups (152.8 *v.* 154.6 mmHg). It fell to 125.8 mmHg in the intervention group (a change of –27 mmHg) as compared to 145.4 mmHg in the control group (a change of –9.3 mmHg). This represented a 21.6 mmHg greater mean reduction in the intervention arm (p<0.001). Secondary outcome measures, such as reduction in diastolic blood pressure (–14.9 mmHg greater) and percentage of subjects receiving antihypertensive drugs at 6 months (100% *v.* 63%, p<0.001), were higher in the intervention group. Those in the intervention group achieved more frequently a target blood pressure of <130/80 mmHg (63.6%) in contrast to 11.7% in the control group (p<0.001). The mean number of blood pressure medications was 2.6 in the interventional group versus 1.4 in the standard therapy group (p<0.001).

Apart from transient acute kidney injury related to indapamide in 3 subjects (that resolved with stopping the drug), no drug-related side-effects were observed.

The authors concluded that among black men with uncontrolled hypertension, who regularly visit barbershops, promotion of a healthy lifestyle by barbers along with drug management supervised by pharmacists led to greater reduction in blood pressure and more frequent achievement of target blood pressure than the control intervention of education on blood pressure at the barbershop.

COMMENT

This trial has important clinical implications for healthcare delivery in developing countries, such as India, which have a large number of patients with hypertension, with suboptimal treatment leading to poor control of blood pressure, and therefore high rates of hypertension-related morbidity and mortality. Important factors responsible for the suboptimal treatment of hypertension in these settings relate to low rates of patient awareness, poor penetration of healthcare services, particularly for those belonging to the lower socioeconomic strata, and therefore low rates of patient–physician interaction. Thus, there is a need for better community and societal outreach of healthcare services to patients with hypertension in these settings.

Barber outreach is a known healthcare measure, with a previous trial reporting better blood pressure control at 10 months' follow-up when barbers encouraged subjects with high blood pressure readings to make appointments with physicians than if they only disbursed hypertension-related literature.[1] That study found an absolute intergroup difference of 8.8% in hypertension control rate (p=0.04) with a non-significant change in systolic blood pressure (absolute intergroup difference –2.5 mmHg, p=0.08). Lack of significant reduction in blood pressure in previous trials has often been due to a degree of therapeutic inertia especially in primary healthcare settings, due to the busy clinical schedules and patient overload, with physicians often reluctant to change or intensify drug regimens. This is relevant in countries such as India where patient numbers are large and doctor–patient ratios are far below optimal. Promoting blood pressure awareness and incorporating pharmacist-supervised blood pressure management at barbershops is a simple, low-cost and innovative healthcare strategy that can potentially carry hypertension care to the very doorstep of patients. Rather than visit doctors or pharmacies, the subjects can interact with pharmacists visiting barbershops, who can help prescribe drugs right where subjects get their haircuts. This can greatly simplify the process of healthcare delivery for this major public health problem. The present study shows that it is not imperative for patients to reach a doctor's clinic or a hospital for effective antihypertensive care; instead, the necessary care can be provided through an intermediary, such as a trusted community member (barbers in this case). Of course, other similar community settings or persons can also be thought of as other potential providers.

This approach of healthcare delivery also has the advantage of greater patient involvement, as evidenced in the current trial by higher self-rated health and patient engagement scores in the intervention group. In countries with large patient burden with poor access to physician-supervised care, such strategies which bring medical care and drug delivery closer to a patient's home are likely to be particularly effective.

Involving known and trusted members of a community in providing hypertension-related health information and in delivering drugs is likely to improve patient compliance and blood pressure control. This trial included subjects who were regular patrons of barbershops, thus ensuring that the study subjects engaged frequently with the barbers. It achieved an impressive rate of cohort retention (~95%), indicating that there were few dropouts. This reflects the confidence of the subjects in their community partners. Having both barbers and pharmacists participate actively in the trial further ensured that two levels of interaction and care were provided. It is possible that subjects from poorer socio-economic classes and/or low education status feel more comfortable with community outreach programmes that offer a high degree of peer support.

In previous studies, the degree of reduction in systolic blood

pressure was shown to be much higher when barbers referred subjects directly to hypertension specialists than when they referred them to primary care physicians.[2] The former group of patients was not only more likely to receive a larger number of medications for blood pressure but also different classes of medications. The magnitude of blood pressure reduction in the current trial, i.e. 27 mmHg fall in systolic blood pressure in the intervention arm versus only 9 mmHg in the control group, and nearly 6 times greater likelihood of meeting the currently recommended goals of blood-pressure targets were much higher than what has been previously reported in pharmacist- or nurse-based care interventions.[3,4] If this barbershop intervention can be seamlessly integrated into the community, it can potentially be linked directly to specialty-level hypertension specialists leading to even better control of blood pressure across the population.

An important limitation of the trial was the use of different blood pressure targets in the two groups, i.e. 130/80 mmHg for the barbershop-led intervention versus in-office blood pressure <140/90 mmHg in controls who were treated by primary care physicians. This may have led to exclusion of some subjects with normal office readings and high out-of-office blood pressure (masked hypertension) which is especially common in black patients.

Before planning similar trials in India, one needs to remember that pharmacists in the current study had the authority to directly prescribe drugs in the initial dual-drug based regimen, and to add a third or a fourth drug, if needed. Pharmacists interacted frequently with subjects at the barbershops including monthly face-to-face visits apart from regular telephonic calls or messages. This may have been possible in the study setting, i.e. with a relatively small number of subjects recruited from each barbershop. However, in real-life or population-based studies in India, the number of patients per shop could be much larger, and could pose logistic hurdles. Another question that needs consideration is whether, in real-life, community members who help enrol hypertensive persons should be reimbursed for their efforts (such as distributing literature and conducting interventions) and whether the subjects should receive incentives (for following the advice to seek medical intervention)—as has been done in the barbershop studies.

Such healthcare outreach programmes could also be extended to other people in the society who interact frequently with patients, and encourage them to become community partners. They could then also become health educators, monitor blood pressure and promote follow-up by physicians, with the goal of improving hypertension-related morbidity and mortality. Such groups could include priests, grocery shopowners, etc. This may help such programmes cover a wider variety of socioeconomic groups than was possible in the barbershop trials, which targeted only a predominantly middle-income black clientele.[1] Also, one would need to undertake longer-term follow-up studies (beyond 6 months) for assessing sustainability of such programmes. Modelling studies to assess the cost-effectiveness of this and similar interventions would also be useful before large-scale adoption of these measures; this is particularly important with out-of-pocket expenditure being the major way of funding healthcare and low insurance coverage in India.

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