

Men's Educational Group Appointments in Rural Nicaragua

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Abstract

Men's preventive health and wellness is largely neglected in rural Nicaragua, where a machismo culture prevents men from seeking health care. To address this issue, a men's educational group appointment model was initiated at a rural health post to increase awareness about hypertension, and to train community health leaders to measure blood pressure. Men's hypertension workshops were conducted with patient knowledge pretesting, didactic teaching, and posttesting. Pretesting and posttesting performances were recorded, blood pressures were screened, and community leaders were trained to perform sphygmomanometry. An increase in hypertension-related knowledge was observed after every workshop and community health leaders demonstrated proficiency in sphygmomanometry. In addition, several at-risk patients were identified and follow-up care arranged. Men's educational group appointments, shown to be effective in the United States in increasing patient knowledge and satisfaction, appear to function similarly in a resource-constrained environment and may be an effective mechanism for reaching underserved men in Nicaragua.

Keywords

health awareness, community outreach, social determinants of health, hypertension

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Introduction

The state of men's health is particularly poor in Nicaragua, one of the most impoverished countries in Latin America, second only to Haiti (The World Bank, 2014). The after-effects of civil war, dictatorship, and natural disasters have contributed to its lag behind other countries. On both the world poverty index and human development index, Nicaragua ranks below its neighbors, and 53rd poorest worldwide (The World Bank, 2014). Two of three individuals struggle to survive on approximately US\$1 per day ("Rural Poverty in Nicaragua," n.d.). Unsuitable water supply and lack of electricity are common and access to health care is poor.

Nicaraguan males have shorter life expectancy (71 years) than females (77 years). For Nicaraguan males, the probability of dying between ages 15 and 60 is twice that of women, likely because of avoidance of health care and unhealthy behavior (World Health Organization, 2013). The *machismo* culture, which refers to strong male pride, has been identified as a factor in deterring Hispanic men from seeking health care because of not wanting to appear weak or unmanly (Getrich et al., 2012; Springer & Mouzon,

2011). Because men in rural Nicaragua tend to avoid health care, they are at increased risk for one of the most devastating health problems in Nicaragua, hypertension, which ranks ninth among leading causes of death (World Health Organization, 2015). The problem is compounded since individuals with hypertension are usually asymptomatic, so the problem goes largely undiagnosed and untreated.

While global health initiatives have long sought effective means of improving health through educational programs, and Nicaragua is a country whose male population may benefit from the rollout of effective health-related teaching initiatives, the best approach to executing educational programs remains unclear. The success of programs that introduce peer leadership to improve behavior and overall health in developing countries has been

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established in many arenas, including HIV prevention, breastfeeding, and domestic violence (Medley, Kennedy, O'Reilly, & Sweat, 2009; Pérez-Escamilla, Curry, Minhas, Taylor, & Bradley, 2012; Serrata, Hernandez-Martinez, & Macias, 2016), and was thought to be a potential model for pilot implementation in Nicaragua.

In the United States, gender-specific programs have been initiated which capitalize on the benefits of group dynamics, in efforts to educate men about preventive health (Campbell & Gosselin, 2007). Such programs leverage the fact that group dynamics can be effective in behavior change programs, such as weight loss and abstinence from alcohol (Hogan, Linden, & Najarian, 2002; Vederhus & Kristensen, 2006). In one men's educational group appointment (MEGA) model, high patient satisfaction was reported; patients reported increased education compared with traditional appointments, and felt more at ease attending an appointment in a group (Campbell & Gosselin, 2007; Campbell, Shaw, & Gosselin, 2009). The problem of hypertension in Nicaraguan men was felt to be a prime target for initiation of a group-based, male-oriented, peer leadership teaching initiative.

The objective of the current research was to introduce MEGA workshops focusing on hypertension at a rural community health post in Nicaragua, and examine the effectiveness of teaching on participant knowledge. A primary goal of this endeavor was to educate patients and community health leaders about causes and health consequences of hypertension. The participants' learning was gauged by comparing testing performance before and after didactic teaching. Participants' blood pressures were also measured, and follow-up care was offered for those with hypertension. Finally, community health leaders were taught to perform sphygmomanometry, and given sphygmomanometers and stethoscopes to take back to their villages. The experience initiating MEGA workshops in rural Nicaragua is described.

Method

The MEGA workshops were planned in collaboration with a local nonprofit health organization. Sessions occurred at a rural health post in El Hormiguero, located in an impoverished area, the North Atlantic Autonomous Region. The post provides health care to communities containing populations of 200 to 600 individuals.

Targeted participants included men who had traveled to receive care, and those who had accompanied their spouses and children during the journey, either on foot or horseback. Patients were recruited by a community coordinator familiar with the local resistant attitude toward health care. The coordinator collaborated with community health leaders to persuade men to participate in the workshops. Consenting patients and their respective



Figure 1. A group of men being escorted to a MEGA workshop.

Note. MEGA = men's educational group appointment.

community leaders were brought to an adjacent teaching room equipped with electricity (Figure 1).

The MEGA team composed of an internist, medical assistant, translator, and coordinator. The first year, a nutritionist joined the team. After attendants were welcomed and thanked for their participation, they were given a 5 to 6 question pretest in Spanish to assess knowledge about hypertension (Figure 2). One additional question, regarding the importance of hypertension treatment was included the second year. Questions focused on behavioral causes and health consequences of hypertension. Answers were recorded by show of hands (Figure 3). The pretest was followed by a brief presentation reviewing hypertension. Images of pathology specimens demonstrating hypertensive end organ damage involving the heart, brain, and kidneys were shown, and questions were encouraged. Then, the group was administered a posttest, and their collective answers were compared with initial responses.

Next, participants' blood pressure was taken and recorded on a wallet-sized blood pressure card, for individuals to keep. Handheld aneroid sphygmomanometers (Welch Allyn Gold Series DS66 REF 5098-30 and MDF 848XPD11) with manual insufflation bulbs were utilized. The sphygmomanometers were selected based on accuracy, durability, long calibration times, and ease of use without the need for electricity or batteries. Functional, durable, cost effective stethoscopes (Prestige Medical Ultra-Sensitive Dualhead Latex Free) were used. Blood pressure readings were taken according to American Heart Association's (AHA) guidelines, which included patients sitting for 5 minutes with their arms at heart level before the readings (Pickering et al., 2005). Blood pressures were taken for each patient twice by an experienced

1. Everyone who has elevated blood pressure is aware that they have it.
True or False

2. High Blood Pressure can cause all of the following:
-Heart Disease
-Stroke
-Kidney Disease
-Eye Disease
True or False

3. All of the following can cause high blood pressure:
-No exercise
-Obesity
-Salty foods
-More than 2 alcoholic drinks per day
-Older age
True or False

4. Blood pressure is recorded as 2 numbers.
True or False

*5(A). What is elevated blood pressure? (2015)
A) 120/80 or higher
B) 130/80 or higher
C) 135/80 or higher
D) 140/90 or higher in adults younger than 60 years or 150/90 or higher in adults 60 years and older

*5(B). What is elevated blood pressure? (2016)
A) 120/80
B) 130/70
C) 140/90 or higher

†6) Treatment of high blood pressure with medication does not help people live longer. (2016)
True or False

* Question 5 was revised in 2016
† Question 6 was added in 2016

Figure 2. Pretest and posttest questions administered during MEGA sessions.

Note. MEGA = men's educational group appointment.

clinician, and repeated to assure accuracy, as determined by less than five points discrepancy between readings.

Participants with hypertension had their blood pressure checked twice in addition to the initial readings. Those with persistent elevated readings were instructed to follow up with their community leaders for appropriate treatment. During the MEGA team's first visit, a Spanish-speaking nutritionist reviewed dietary causes of hypertension while participants waited to have their blood pressure checked.

To conclude the sessions, community health leaders were taught in Spanish how to perform sphygmomanometry. A laminated reference card listing a 10-step protocol, adapted from AHA guidelines, was used to facilitate teaching. Community leaders practiced until they demonstrated proficiency and accuracy, defined as correlation within five points of the



Figure 3. Participants raise their hands to convey answers.

medical assistant's recording. Then, they were given laminated 10-step reference cards, two stethoscopes, and a sphygmomanometer to take back to their communities.

Statistical Analysis

Analysis sought to determine whether group knowledge improved as a result of the teaching intervention. The proportion of correct responses for each question was compared preintervention and postintervention using the paired samples Wilcoxon Signed Rank test (two-sided). Data were analyzed for normality using the Shapiro–Wilk test. Statistical significance (α) was set at .05 for all tests.

Results

Eight MEGA sessions were held over 2 weeks during February, 2015 and February, 2016. Workshops typically lasted 90 minutes. A range of 5 to 15 patients, and 1 to 2 community leaders participated in each session, for a total of 79 participants. The age of participants ranged from 19 to 60 years (median age 40 years).

Test Statistics

The initial proportion of correct responses by question demonstrated a median of 58% (range 27% to 75%); following the teaching intervention, a significant rise to a median of 96% (range 66% to 100%) was detected ($p = .018$; Figure 4). The proportion of correct responses improved for every question (Table 1). Participants performed extremely well on test Questions 2, 3, 4, 5(B), and 6. The most significant improvement in performance was noted for Question 6, which stressed the importance of blood pressure treatment; 24 (52%) participants correctly answered the question on the pretest compared with 46 (100%) on the posttest.

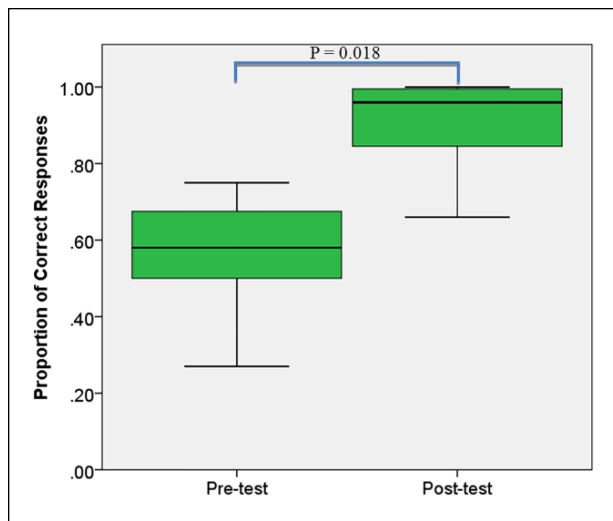


Figure 4. Proportion of correct responses to test questions before and after the teaching intervention.

Table 1. Comparison of Pretest Versus Posttest Percentage Correct Answers.

Question	N (total responses)	Pretest	Posttest
1	79	48	66
2	79	75	96
3	79	70	99
4	79	58	96
5(A)	33	27	73
5(B)	46	65	100
6	46	52	100

For Question 1, participants had difficulty understanding the concept that elevated blood pressure is often a silent disease, and so patients may be unaware they have it. This concept was discussed at length until all participants voiced an understanding. For Question 5(A), the group struggled with the Eighth Joint National Committee recommendation of utilizing two age-dependent blood pressure cutoffs to define hypertension (James et al., 2014). This question was revised during the second year using the AHA and the American College of Cardiology newly published joint recommendation (Rosendorff et al., 2015), which defines hypertension as greater than or equal to 140/90. This modification proved constructive; 30 (65%) versus 9 (27%) and 46 (100%) versus 24 (73%) individuals correctly answered Question 5(B) on the pretest and posttest, respectively, in the second year.

Blood Pressure Readings. Blood pressure readings of all participants are displayed in Figure 5. Nine (11%) individuals had elevated blood pressure readings. Eight

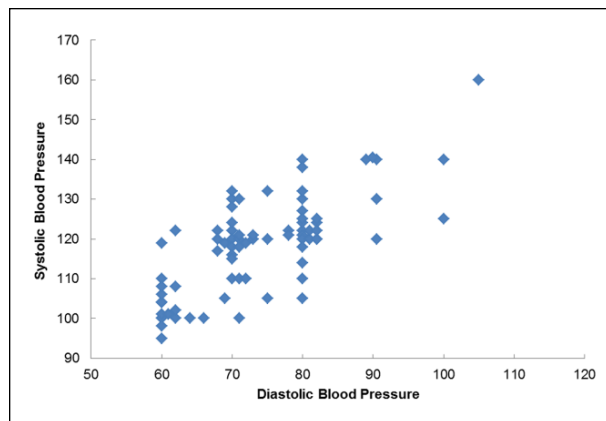


Figure 5. Blood pressure readings from MEGA workshops 2015 and 2016.

Note. MEGA = men’s educational group appointment.

(10%) of these men were unaware of ever having elevated blood pressure. The highest reading was 160/105, which was noted in an overweight 40-year-old man with a known history of hypertension who had run out of his blood pressure medication. An overweight 56-year-old man and a thin appearing 25-year-old man had readings of 140/100 and 125/100, respectively. These three (4%) individuals were sent to the health post following the workshop for further management.

Six (8%) participants, all in their early 40s, had borderline elevated readings, defined as having a systolic pressure of 140 and/or diastolic pressure of 90. These individuals were brought to the attention of their community health leaders to have their blood pressure rechecked over the next month. If their readings did not improve despite behavioral modification, they were instructed to return to the post for further management.

Discussion

Conducting MEGA workshops in rural Nicaragua provided an environment in which men appeared to feel comfortable participating, in spite of belonging to a culture where *machismo* often precludes men from seeking health care. This finding was commensurate with some investigations in the United States (Campbell et al., 2009; Campbell & Gosselin, 2007). During earlier visits to Nicaragua, it was observed that many men, who had made the journey with their families to the health post, not receive any care themselves. Instead, they waited outside the clinic as a group until their family members had been evaluated. These men were deliberately targeted, and educators were pleasantly surprised by their willingness to attend workshops. It was observed that publicly encouraging a group of men to participate promoted attendance. The MEGA model appears to empower men to seek health care.

The MEGA workshops provided an educational venue on an important health issue that is a leading cause of death in Nicaragua. Participants acquired a better understanding of hypertension, based on their improved post-test performance. One weakness of the methodology used is that testing answers may have been affected by hand raising visible to others. The MEGA sessions also gave individuals the opportunity to have their blood pressure checked, and to receive follow-up care if necessary.

Nine (11%) participants were noted to have elevated blood pressure, a number significantly lower than the country's estimated 33% (World Health Organization, 2015). This finding may result from the relatively young average age of participants (median age 40 years). Hypertension is more prevalent in older individuals. One explanation for the cohort's younger age is that the long-distance travel required to attend the clinic likely precluded older individuals from traveling to the health post. This important revelation was the key impetus to educate community leaders to proficiently measure blood pressure, and provide them with stethoscopes and sphygmomanometers to utilize in their communities. It has been demonstrated that community health workers and unpaid volunteers can be trained to measure blood pressure accurately (Adams, Burke, & Beilin, 2002; Amarchand, Sharma, & Krishnan, 2013).

Important questions remain. Will the information learned in MEGA workshops translate into a sustained heightened awareness of hypertension which may ultimately help reduce the prevalence of hypertension in this rural area? Will community leaders use the sphygmomanometers and if so, refer patients with elevated readings to the health post for treatment? Will individuals identified with hypertension seek follow-up care? These questions could be targeted in future visits.

Significant limitations to the current report include uncertainty regarding long-term retention of knowledge gained during the workshops, barriers to access to care for those patients with hypertension, potential noncompliance with medical regimens, and the fact that education about common issues in men's health is an enormous undertaking. Isolated workshops, while possibly effective, do not provide an effective strategy for mass education. However, it is demonstrated here that Nicaraguan men, who typically would not have received health care, participated in MEGA workshops, acquired information about hypertension, and became aware of their own blood pressure readings. This finding may serve as a platform to roll out additional educational efforts more broadly across Nicaragua and other developing countries in which gender-based health care inequality exists. Finally, it would be interesting to compare the peer leadership model described herein with results of other peer leadership interventions. However, these types of direct comparisons to date have been

difficult to make, based on the paucity of outcomes data available for men's health.

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