

HEALS Hypertension Control Program: Training Church Members as Program Leaders

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Abstract: *Introduction:* Health disparities related to cardiovascular diseases (CVDs) including stroke have remained higher in the African-Americans (AAs) than in other populations. HEALS is a faith-based hypertension (HTN) control program modified according to AA community needs, and delivered by the church-lay members called church health advisors (CHAs). This study examined the feasibility and acceptability of training CHAs as HEALS program leaders.

Design: Four CHAs completed a 10-hour HEALS program training workshop at the Church, conducted by the nutrition experts. Workshop was evaluated by CHAs on their level of satisfaction, clarity of contents covered and comfort in delivery of the program to the church congregation.

Results: The overall six main HEALS curriculum components were completed. Workshop was highly evaluated by CHAs on length of training, balance between content and skills development, and level of satisfaction with program delivery.

Conclusion: Church-based culturally modified health promotion interventions conducted by the community lay members may be a way to reduce health disparities in ethnic minorities.

Keywords: African-american, blood pressure, church-based, hypertension.

INTRODUCTION

Health disparities related to cardiovascular diseases (CVDs) including coronary artery disease (CAD) and stroke have remained higher in the African-Americans (AAs) than in other populations. AAs living in the stroke belt region of the US are at an even higher risk for CVDs including stroke. Compared with Whites, AAs have a 1.3-times greater rate of nonfatal stroke, a 1.8-times greater rate of fatal stroke, a 1.5-times greater rate of CAD, and a 4.2-times greater rate of end-stage kidney disease [1, 2]. Modifiable risk factors are important targets for reducing the overall burden of stroke, with hypertension (HTN) being the most important risk factor [1].

Nationally, HTN is the largest treatable contributor to stroke and the second largest contributor to CAD. It is also the second leading cause of end-stage renal disease and contributes significantly to congestive heart failure. Many AAs, however, remain unaware of their blood pressure (BP) status [3]. It is common, asymptomatic, readily detectable, and easily treatable. Additionally, it burdens our economy substantially [1].

Besides medications, lifestyle interventions are also effective in lowering BP. The “Dietary Approach to Stop Hypertension” (DASH) diet has been shown to lower systolic BP (SBP) by 6-14 mmHg, equivalent to one anti-hypertensive agent effect [4]. However, in the PREMIER trial, DASH with lifestyle modifications was less effective in AAs with regard to BP lowering effects [5].

AA Church has been a community resource that can help address areas of health disparity for AAs. Given the strong identification with religion as a social support mechanism, and its importance in everyday lives of AAs, health interventions that incorporate spiritual and cultural contextualization have been effective [6-8]. Health promotion interventions conducted in faith communities provide a promising opportunity to enhance emotional, physical and spiritual health. The spirituality and its relationship to overall well-being are highly correlated and research suggests a positive relationship between the two [9, 10].

For several years, there has been a trend to have lay health leaders, rather than healthcare professionals, successfully deliver health promotion community-based participatory research (CBPR) programs in hard-to-reach communities [11, 12]. There are several strengths to using lay health advisors (supported by experts and church pastors) in delivering CBPR programs: i) they are acceptable to hard-to-reach community residents, ii) they provide a ready

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support network, iii) they serve as efficacious peer models, iv) they promote community ownership, and v) they are cost-effective [13, 14].

HEALS is a faith-based multi-level CBPR intervention to control and prevent HTN among high risk AAs. The sizeable AA communities in the Jacksonville Metro area make it an ideal population in which to implement a HTN control and prevention program. Considering the need in the community, and before implementing the HEALS programs widely, we pilot-tested the feasibility of the program at the Central Metropolitan CME church, Jacksonville, FL. If successful, HEALS program may be utilized to reduce the incidence and consequences of HTN in large communities with potentially huge impact on public health by implementation in community settings such as church venues.

Among several church-based tasks completed for HEALS, one of the most crucial step was training of church lay members called Church Health Advisors (CHAs) as program leaders. To date, there is a lack of research on training non-professionals to deliver a lifestyle modification intervention for HTN control in a community setting. To address this gap, HEALS program translated PREMIER (including DASH) principles, involving weight loss, exercise, and healthy diet to reduce blood pressure into a group-based study in a church setting by training peers (vs health care professionals) from the AA community to conduct a culturally tailored intervention in an environment that has the potential to support sustained lifestyle improvements. In order to deliver 12 weeks HEALS program to church members by their own church members, training is important. The objective of current study is to share the experience of training church lay health educators as HEAL program leaders' s who will deliver a 12-weeks program under the supervision of the research team and DASH & PREMIER experts.

DEVELOPMENT OF HEALS

Details about HEALS program development are provided elsewhere [15]. Briefly, HEALS is a faith-based HTN control and prevention intervention, developed using CBPR approaches and input from members of AAs churches during a multi-step process. The basis of the HEALS is the PREMIER study [10] and faith-based strategies of Fit Body and Soul study [13] were used to add spirituality components in the program [12]. Members of the original DASH and PREMIER study and community advisory board (CAB) members were involved in the development of the program. A group-based, culturally appropriate 12-month program was developed for the church participants in the study (Table 1: HEALS conceptual model). Church pastors selected the spiritual themes and scriptures to frame the three main components of the intervention --weight loss, increased PA, behavioral change, and wrote messages to be included in the manual. The spirituality was seen as a source of emotional support, a positive influence on health, and contributing to life satisfaction. Overall feedback from the advisory panel and focus groups regarding this multi-level, spirituality-

based, behavioral lifestyle intervention for AA congregations was generally consistent, showing strong preferences for design and content. In order to achieve outcomes and goals (Table 1), the multi-level HEALS intervention was designed to be delivered using three different approaches: Church level (led by pastor); group level (led by CHAs) and individual level approach (led by CHAs) [15].

METHODS

The study was approved by the University of Florida, College of Medicine Jacksonville (UF COM-J), Institutional Review Board (IRB), and was conducted in a church located in the inner urban core of Jacksonville metropolitan area, FL. The model used for developing and conducting the CHAs training program is based on the principles of adult learning [16]. The process of adult learning is facilitated by instructions that are goal oriented and personally relevant to the learner. The selection of the church for this study was facilitated by the CAB members.

ESTABLISHMENT OF HEALTH DISPARITY COMMUNITY ADVISORY BOARD (CAB)

The UF COM-J and the Center for Health Equity and Quality Research (CHEQR) under the leadership of Dr. Dodani (Study PI) established CAB, funded by the CHEQR (<http://www.hscj.ufl.edu/research/jaxhero/HEALS.aspx>). The CAB has more than 90% representation of AA communities including (i) local organizations serving low-income ethnic minority groups; (ii) leaders from health education institutions; (iii) churches; and (iv) non-profit organizations. The primary functions of the CAB are to: 1) identify health issues from the perspective of community members; 2) promote communication among community leaders and researchers; 3) promote partnership and ownership by community members in research projects that involve, and have an impact on, the overall health of the AA community; and 4) bring together community leaders and researchers to design, implement, and evaluate culturally sensitive, practical research projects.

SELECTION OF THE CHURCH

On the recommendation of CAB, pastors from two AA churches expressed interest in having their respective church communities become involved in HEALS program. Both the churches were located in the urban core of Jacksonville, in an impoverished and predominately AA community. Due to limited funds and considering this is a feasibility study, Central Metropolitan CME was randomly selected. Dr. Dodani approached Rev. Marquise Hardrick of Central Metropolitan Church to discuss and pilot test HEALS program in his church to improve health of the congregation.

RECRUITMENT OF CHAs

The minimum criteria for CHAs selection were; (a) being the member of Central Metropolitan Central Methodist Episcopal (CME) church; (b) being ≥ 25 years old; (c) being

Table 1. Conceptual model of **H**ea**l**thy **E**ating **A**nd **L**iving **S**piritually program (HEALS).

Conceptual Protocol of HEALS lifestyle Intervention modified from DASH and PREMIER study				
Wk	*MajorTheme	Group Session (expert-led CHCs)	Tailored Intervention with individuals (led by CHAs)	Church-level support (by Pastor)
1	Welcome to HEALS Lifestyle Program- <u>Goals and Objectives</u>	Build group commitment; set group goals (SBP reduction by at least 4 mmHg, DBP by at least 2 mm Hg, weight loss by at least 10 lbs and improved nutrition and diet); introduce self-monitoring of food intake.	Build individual commitment; record/reinforce reasons for joining; review benefits; reinforce self-monitoring of food intake.	Kickoff event at least 1 wk prior to intervention start. Pastor presents overview and study goals to the whole congregation.
2	<u>New eating style</u> , ↓ calories, Na & and fat, strike a balance Role of PA	Introduce self-monitoring of fat intake; taste it-cooking demonstration of DASH culturally MODIFIED foods, instruct on how to read food labels; provide fat counters.	Introduce home self-monitoring of weight (i.e., assign fat g goal based on initial weight). Assess success in ↓calories. Problem solving. Endorsing habit changes	Pastor endorsement of culturally modified DASH diet plans with low fat and sodium contents and more F&V during weekly sermon.
3	HEALS menus low in calories. <u>Seeing is believing</u>	Introduce three ways to eat less fat: eat high-fat foods less often, eat smaller portions, and substitute low-fat foods and low-fat cooking methods with high F&V intake.	Practice self-monitoring skills (i.e. measuring foods, estimating food portion size). Assess success in ↓calories. Problem solving. Endorsing habit changes.	Pastor endorsement during weekly sermon.
4	<u>Taste-test, lifestyle patterns, cooking demonstrations.</u> Ways of finding lower Na products in the grocery	Introduce using the USDA Food Guide Pyramid as a model for healthy eating and recommend low-fat, low-calorie substitutes at each food pyramid level. Teach reading food calorie labels.	Emphasize importance of regular meals and eating slowly, review self-reports and cooking/eating activities in past week. Mapping your day for eating and PA	≥1 activity during the 12 wk period. Church activities may include cooking demos & taste tests, inviting guest speakers, supermarket shopping demos, and/or pastor endorsement during Sunday sermons.
5	<u>Tip the Calorie Balance.</u> Who shops for your food? Healthy shopping	Introduce modified DASH menus at least two one healthy meal per days to build to all three meals and snacks. Healthy breakfast, Keep a watch on eating healthy outside and buying healthy. Begin self-monitoring.	Begin self-reports of food intake and PA; reinforce positive behaviors; assist to problem solve as needed (i.e., addressing personal likes and dislikes about PA). Maintain food & fitness diaries	≥1 policy change during the 12wk period (e.g. setting guidelines about the types of food to be served at church functions and/or changing snacks served to children in church).
6	<u>Taking Charge of what's around you.</u> <u>Meal management.</u>	Lighter lunches. Assist participants to find time to include PA short bouts (10-15 minutes to begin with) and healthy lifestyle activities; teach basic principles of exercising safely.	Review self-reports of food intake and PA; reinforce positive behaviors; develop action plan. maintain food & fitness diaries	Pastor to promote project through announcements on display boards, newsletters, church bulletins, etc.
7	<u>DASH into dinners.</u> Problem solving	Teach the fundamentals of energy balance and what it takes to reduce BP and weight.	Review self-reports; provide a reduced calorie, structured meal plan that is tailored for the individual; develop action plan.	Ongoing activity, policy, promotion (as described above).
8	<u>Four Keys to Healthy Eating Out</u>	Introduce the principle of stimulus control; identify cues in the environment that lead to unhealthy food and activity choices and discuss ways to change them.	Review self-reports; identify cues in individual's environment and develop action plan. Mapping your day for eating and PA	Ongoing activity, policy, promotion (as described above).
9	<u>Talk Back to Negative Thoughts</u>	Present the 5-step model of problem solving; describe the problems as links in a behavior chain; brainstorm possible solutions; pick one solution to try, make a positive action plan and evaluate success solutions.	Review self-reports; apply the problem solving model to eating and physical activity problems; develop and action plan. Mapping your day for eating and PA	Ongoing activity, policy, promotion (as described above).

Table 1. Contd....

Conceptual Protocol of HEALS lifestyle Intervention modified from DASH and PREMIER study				
Wk	*MajorTheme	Group Session (expert-led CHCs)	Tailored Intervention with individuals (led by CHAs)	Church-level support (by Pastor)
10	The Slippery Slope of Lifestyle Changes- local places for PA	Introduce four basic skills for managing eating away from home; anticipate and planning ahead, positive assertion, stimulus control, and making healthy food choices.	Review self-reports: develop action plan. Mapping your day for eating and PA. maintain food & fitness diaries	Ongoing activity, policy, promotion (as described above).
11	<u>Jump Start your Activity Plan</u>	Practice identifying common patterns of self-defeating, negative thoughts and learn to counter these thoughts with positive statements.	Review self-reports; individualize positive thoughts; develop action plan. Mapping your day for eating and PA. Maintain food & fitness diaries	Ongoing activity, policy, promotion (as described above)
12	Ways to Stay Motivated. Reward on completing core intervention. <u>Focus on maintaining health behaviors</u>	Stress that slips are normal and learning to recover quickly is the key to success. Teach participants to recognize personal triggers for slips, their reactions to slips, and what it takes to get back on track. Share experiences of a party or dealing with difficult situations.	Review self-reports; discuss personal triggers; develop action plan. Mapping your day for eating and PA. maintain food & fitness diaries	Ongoing activity, policy, promotion (as described above).

* 90 mins session every week for 12 weeks. Na= sodium, F&V= fruits and vegetables; PA= physical activity; SBP= systolic blood pressure; DBP= diastolic blood pressure; Frequent self-monitoring of food intake and PA, along with frequent weighing were part of the PREMIER project and will be strongly encouraged in HEALS program.

able to read and write at an eighth-grade level; (d) having transportation to attend training; (e) being able and willing to commit to 10-hour training; and (f) being willing to serve as HEALS CHA and deliver weekly sessions for 12 weeks (3-month core curriculum of HEALS program). In light of the required commitment and training, CHAs were provided with a small stipend for attending training workshop. There were no requirements for prior training in health education or health care, but the importance of CHAs being viewed as role models among program participants was emphasized. Rev. Hardrick suggested four CHAs for the training who eventually became the HEALS program leaders. The training was also attended by the Pastor. The mean age of CHAs was 58 years (± 20.8). Most CHAs had college education. Two of the CHAs are retired and remaining two was employed as healthcare workers (registered nurses). The CHAs are heavily involved within the church community and well-respected by each member of the congregation.

STUDY RESULTS

The study results are divided based on the training provided to the CHAs and the workshop evaluation completed by all CHAs who completed the training workshop.

A. RESULTS OF TRAINING WORKSHOP

Table 2 provides the workshop format and activities completed during the training. The key objective of the training was to familiarize CHAs with 12-session HEALS program core curriculum. All CHAs were required to participate in the workshop, which was conducted on a

Sunday. Two registered dietitians including one PhD nutritionist conducted the training. The training manual was developed with the intention of recognizing and supporting CHAs existing skills and experiences. The language used during the training was simple and easy to understand (8th grade level) with no use of medical jargon words. The training also emphasized action methods such as role play and simulation (Table 2).

In the first session, program goals & objectives and timeline were presented. The overall six main HEALS curriculum components were presented that are: 1) main content area (e.g., meal patterns, calories and sodium, identifying alternative types of moderate PA, and weight loss); 2) behavioral skills training; 3) self-monitoring activity; 4) review of progress since last session; 5) social support-group sharing; and 6) goal setting and action plans. The importance of the spiritual themes and scripture around the 3 themes of the intervention –weight loss, increased PA, behavioral change was emphasized during the training. CHAs responsibilities and the roles of UF COM-J team personnel were clarified, which served to further strengthen a collaborative community-institutional partnership. This positioned the UF COM-J team in a supporting role while allowing the CHAs to lead the program with some autonomy and yet within the framework of study protocol (Table 2). In this negotiation of roles, each CHA had significant input on a number of issues including program content, scheduling, participant recruitment activities and materials. One of the important goals of maintaining PA and record keeping in food and fitness diaries in every session was clarified repeatedly. First session also highlighted the overall philosophy and nature of multi-level (three level) HEALS

Table 2. Training workshop structure and topics.

Training Sessions	Activities
Session One 8.30-9.30 AM	Introduction to HEALS- multi-level CHA led 12 weeks program HEALS objectives & Goals Emphasis on six main program components Importance of weekly dietary and physical activity goals
Session Two & Three 9.30-11 AM	Importance of Hypertension (Blood Pressure) in African American community Brief description of DASH Diet and PREMIER Study Role of lifestyle measures for hypertension control including DASH diet Strike a balance- Role of regular physical activity Record keeping Weekly dietary and physical activity goals
Session Four, Five & Six 11.30-2 PM	Learning Lifestyle Patterns and facing challenges Pattern for fruit , vegetables and diary intake Building healthy breakfast Meal management-lighter lunch Grocery shopping strategies to eat healthier Tips for grocery shopping Weekly dietary and physical activity goals
Session Seven, Eight & Nine 2-3.30 PM	DASH into Dinner- Learn about food preparation Learn to modify recipes to fit the HEALS guideline snacking patterns Learn about portion sizes Demonstration of portion sizes including measuring tools Weekly dietary and physical activity goals
Session Ten, Eleven & Twelve 3.30-5 PM	Eating out- calorie, fat, and sodium levels of common restaurant meals and discuss healthier food options Methods to stay in control when away from home Self-monitoring-Stay on track Tackling triggers Individual sessions focus Maintaining progress, successes on BP and weight control Maintaining dietary and physical activity goals for life

program and importance of setting goals for each level i.e. group level (led by CHAs), individual level (led by CHAs), and church level (led by church pastor). CHAs were provided with copies of HEALS program manual which included learning objectives, bible scriptures added within each session and participants goals for each session for 12 weeks program.

Session two and three primarily provided in-depth understanding of issues of high HTN prevalence and poor control in AAs. In addition, role of DASH diet and importance of PREMIER study findings were also shared. In addition, guided list of calories, fat, and sodium, and highlight fruits and vegetables, low fat diary and low saturated fat choices were also presented to the CHAs. The information was obtained and modified from the PREMIER intervention arm C [5].

Sessions four, five and six of HEALS program, trainers provided in-depth importance of preparing healthy breakfast and light lunches. Identifying grocery-shopping strategies that can help the group meet HEALS goals was emphasized. In addition, ways to finding what healthy food options are available was also discussed. The goal is to have CHAs teach the participants how to effectively manage their dietary behavior, in addition to maintaining their personal exercise program when confronted with the full spectrum of daily environmental challenges. That is, rather than have the CHAs attempt to control the participants' behavior, the basic strategy is to train the participants to manage their own behavior to achieve and maintain diet and lifestyle change. The essential components of successful self-management include setting reasonable short-term goals, formulating specific plans of action to achieve those goals, developing

reinforcement and social support for carrying out each major element of the plan, keeping a record to assess progress, and regularly evaluating and modifying plans using the self-management records.

Session seven, eight and nine focused on DASH dinners, healthy snacking and portion size control. Learning to control portion sizes that include several parts i.e. knowing portion sizes was extensively taught with role play. Moreover, hands-on exercises included the demonstration of portion sizes with emphasis on eating smaller portions was included. Discussion on planning ways to add fruits, vegetables, and dairy foods in snacks and lower calories, fat, and sodium was also highlighted.

Last three sessions focused on eating-out healthy by making healthy choices. Examples of certain cues or prompts were mentioned by CHAs that can help initiate a behavior. Take-out, home delivery, or frozen dinners may be foods that are convenient to turn to, when don't have time to cook dinner. Options of healthy evening meals were discussed with emphasis on reducing the frequency of eating out. Discussion on (a) what type of evening meals are eaten at home; (b) what quick meal options they currently use; (c) what are the barriers to cooking evening meals; and (d) ways to eat healthy foods even when there is no time or interest in cooking were brought up. Rewards to successfully managing meals and ultimately calories, fat, sodium, fruits, and vegetables were presented to CHAs. Several options of how group can break the negative links and add positive links were mentioned.

Lastly, objectives of the multi-level HEALS lifestyle intervention were re-emphasized with special focus on individual level support (Led by CHAs). CHAs were taught ways of contacting individual participants (at least once a week after group session) with a goal of focusing on social support, specific behavior change goals, problem solving, and motivation during challenging situations. Hands-on training on anthropometric measurements i.e. weight, height, waist circumference and BP (both by manual and digital instruments) was also given by the research team staff.

WORKSHOP EVALUATION

Main workshop components (HEALS program covered including the understanding of goals of each session) were evaluated by the CHAs and feedback was received on surveys (Pre & post training), that were qualitatively analyzed. Training was evaluated on the content and information provided as well as the level of understanding and satisfaction of CHAs. Overall, the training met their expectations and further prepared them to lead the HEALS program. CHAs "highly" evaluated several aspects of the workshop such as the conduct of the sessions, method of demonstration, time and expectations from CHAs. The overall level of satisfaction with the training and comfortable level was rated "high". They described workshop experience as "reinforcement" of church mission of "Body as a temple and must be taken care of". Further, the format of sessions conducted, content of information provided, and meeting the

workshop goals in a timely fashion were graded as "above expectation" by CHAs. This workshop also provided an opportunity to get a better understanding of the needs for future training. The CHAs conveyed that an opportunity for growth would be to provide additional tools to motivate the group for open discussion and additional information concerning the program and expectations.

DISCUSSION

HEALS program is conceptualized on a socio-ecological model that considers the complex nature of the church community and provides a framework for intervening at multiple levels of influence on health behaviors and practices [17] HEALS program further endorses the need for cultural and spiritual sensitivity in CBPR projects as it relates to the beliefs and mission of the church organization and membership. One overarching dimension of this sensitivity is an understanding and appreciation of the importance of religion and how health is perceived from a holistic perspective. During the formative stages of HEALS and in several focus groups[15,18], church members made it clear that they wanted to use and enhance their existing resources rather than have outside "experts" deliver the interventions, therefore a "train the trainer" model was used. Trained lay health educators, can successfully implement a behavioral CBPR lifestyle program, and our study further support the findings of previous studies [7,11,19,20]. Health education programs that target hard-to-reach communities are often delivered by lay persons from the community who are trained to serve as program leaders. In our case, while CHAs bring a number of strengths to CBPR programs like HEALS, the effectiveness of these lay volunteer-delivered program is, to a large extent, contingent on the training provided to them, that is highly influenced by a number of factors that include but not limited to; (a) the complexity of the targeted health behavior; (b) the specialized skills, attitude and knowledge required in implementing the program; c) prior knowledge or participation in similar kind of CBPR programs; and d) the relative autonomy of CHAs in implementing the program and involvement with program participants.

These CHAs subsequently recruited eligible church members during the kick-off event (described elsewhere) who are enrolled in the HEALS program. CHAs are conducting the program sessions at the Central Metropolitan CME church with the support of researchers and experts. Results of three month core curriculum are in progress. This suggests that the CHAs embedded in community settings are a tenable vehicle for disseminating evidence-based HTN control CBPR interventions with proper training. These findings are consistent with previous studies demonstrating that lay health educator can contribute to improvements in lifestyle behaviors to reduce risk for CVDs and stroke associated with HTN [8, 11, 15-16, 19, 20].

The study has several limitations that merit consideration. All CHAs volunteered were females, as might be expected from the demographics of churches and church membership. The HEALS program evaluation was completed by all four CHAs, however because of small

number, formal analysis was not performed and this may bring in selection bias in the evaluation results. We plan to include structured interviews for program evaluation in the future HEALS related studies. Additionally, spirituality was not measured objectively, as the main purpose of this study is to provide detailed information on training components of the HEALS program and assess level of satisfaction by CHAs in understanding the contents. Last but not least, the adoption of current training method for lay educators has not been fully studied and requires further research.

CONCLUSION AND STUDY IMPLICATIONS

Often the communities that are in greatest need of interventions, such as the HTN control program, are also the same communities that lack the resources to implement these programs. Trained CHAs as members of the community hold substantial promise for the delivery of health promotion interventions into AA church settings after receiving training. Furthermore, churches offers a promising venue for delivery given the huge health disparities related to CVDs in AAs. HEALS is one of the unique studies of its kind, to our knowledge that is using the PREMIER and DASH models. More work is required in this area of research.

CONFLICT OF INTEREST

The authors confirm that this article content has no conflicts of interest.

ACKNOWLEDGEMENTS

We are indebted to Rev. Hardrick of Central Metropolitan CME Church, Mrs. Gladys Brown and the CHAs (Delores Young, Lucy James, Jacquelyn Johnson, and Tanisha Ashley) for their time and dedication to this project. We also sincerely thank to our community advisory panel for their consistent input in the program from program modification to implementation. Lastly, many thanks to Dr. Sahel Arora for his editorial help.

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Received: October 27, 2014

Revised: November 26, 2014

Accepted: November 29, 2014

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