**­­­Title:** Raising Inspirational Sons of Excellence (RISE): Development and Early Findings of the RISE Project

**Authors:**

Holly Huye, PhD, RD **(Corresponding Author)** – Associate Professor, The University of Southern Mississippi

 The University of Southern Mississippi

 118 College Drive #5142

 Hattiesburg, MS 39466

 Email: Holly.Huye@usm.edu

 Ph: 601-266-6023

Brian Street, MSW – Founder and CEO, Your Legacy Begins Now

Jennifer L. Lemacks, PhD, RD – Associate Professor, The University of Southern Mississippi

LaShaundrea Crook, Assistant Director, The University of Southern Mississippi

Brandon Ford, MS – RISE Project Coordinator, The University of Southern Mississippi

Andre Payne – Head Basketball Coach, Mississippi Valley State University

Claude Elam – County President, Carroll County Men in Black and Blue Fighting Prostate Cancer

Sammy Foster – County President, Leflore County Men in Black and Blue Fighting Prostate Cancer

Sammie McCaskill – County President, Montgomery County Men in Black and Blue Fighting Prostate Cancer

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**Abstract**

The Lower Mississippi Delta (LMD) of Mississippi is a rural area with high rates of chronic disease, poverty, low educational attainment and has a large African American population. The purpose of this project was to examine the feasibility of a nutrition and social behavioral management program delivered to underserved male youth in the LMD. This innovative education program based on social cognitive theory addressed not only dietary behaviors, but also focused on developing a growth mind-set and life skills as well as etiquette education. This university collaboration included community health advisors (CHAs) who were responsible for participant recruitment, securing intervention sites and mentorship of college athletes. College athletes were trained as interventionists to deliver the program and mentor participants. The purpose of this paper is to detail the development of the RISE project and report baseline results for self-efficacy and social support for dietary behaviors, self-esteem, dietary behavior change intention, and dietary intake. Twelve CHAs and 10 college athletes participated as mentors in the program. Fifty African American boys were enrolled at baseline between 9 and 12 years old with the majority of household yearly income < $40,000. Baseline results indicated participants had low intentions of consuming healthy foods and lacked social support from friends and role models to encourage healthy eating behaviors. Participants did not meet USDA recommendations for whole grains, non-starchy vegetables, added sugars and energy. The environmental outlook for youth in the LMD and baseline findings support the need for intervention in this vulnerable population.

**Key Words:** Nutrition Education, African American Youth, Mentorship**,** Lower Mississippi Delta

**Introduction**

Populations in the rural south have a disproportionate rate of chronic diseases including coronary heart disease, type 2 diabetes mellitus, and obesity [1]. The Lower Mississippi Delta (LMD) of Mississippi is one such rural area with the highest chronic disease prevalence in the United States. The LMD area has high rates of poverty, low educational attainment and a large African American population [2]. These socio-demographics as well as cultural influences of the region have resulted in unfavorable dietary patterns and unhealthy weight gain among LMD residents. Overweight and obesity prevalence among elementary school children (grades K-5) in Mississippi in 2015 was 40.4% (17.8% and 22.6%, respectively) [3], indicating a serious need ­to intervene at this impressionable age. Moreover, overweight and obesity prevalence among middle school and high school youth was 46.1% and 46.7%, respectively. These weight patterns are concerning due to evidence that supports the likelihood childhood overweight and obesity prevalence will persist into adulthood. Lifestyle behaviors that likely contributed to unhealthy weight status in Mississippi high school youth included a lack of consumption during the past seven days before the survey of fruit (11.7%), vegetables (10.9%), or breakfast (19.8%); drinking a sugar-sweetened beverage one or more times per day (29.4%); and no engagement in physical activity (22.9%) [4]. These lifestyle factors support the need for intervention in younger boys to impede future health concerns related to chronic disease. While many studies in the LMD have focused on adults, few studies have used children and adolescents as the primary target sample to address lifestyle behaviors that promote healthy eating and physical activity. Not only do lifestyle behaviors need to be addressed in LMD youth, but young African American males, specifically, need mentorship to reach their full potential in this impoverished area where 48% of children live in single parent families [2].

**Mentoring Young African American Males**

Young African American males are living in communities that have limited access to resources and have disproportionately high rates of incarceration, and low educational attainment when compared to young African American women and men of other races in the Unites States [5]*.* Rates of unemployed African American males aged 20 to 34 in the United States are nearly double the rates of Whites, Asian, and Hispanic or Latino males [6]. Research has shown that young men, including male teens, who lack employment and economic resources, are more likely to engage in precarious means of generating income such as selling drugs or theft [7, 8, 9].

As a mode of social support, mentoring relationships can have a positive impact on the well-being and achievement of young African American males, introducing a positive male influence where none had previously been [10]. Ultimately, mentoring connects a young person to personal growth and development, and social and economic opportunity, yet one in three young people will grow up without this critical asset [11]. Programs for at-risk youth with a mentorship component have yielded positive outcomes. A meta-analysis of mentorship programs concluded theory-based programs using evidence-based practices resulted in positive youth benefits. [12]. Recent program evaluation results included emotionally supportive relationships, reduced delinquency, and encouraging academic outcomes [13, 14, 15]. Furthermore, one mentoring program resulted in a decrease of calories consumed from high fat foods among overweight/obese, high-risk children [16].

**Social Support and Dietary Patterns**

While the relationship between social support and healthy dietary patterns (i.e., higher intakes of fruits and vegetables) has been examined in adults [17], results are inconsistent among adolescents/children [18]. While one study reported a strong relationship between parental support and fruit/vegetable intake among racially diverse girls, other studies [19] reported an association between friend support for healthy eating for racially diverse rural youth [20] and low socioeconomic status boys [21]. Further investigation of social support and healthy dietary patterns is certainly warranted among young African American males with predominantly single parent and low-income households.

Behavior change programs must take in consideration the environment in which the target population lives. Intervention components and activities must be culturally appropriate at multiple levels including social attitudes, dietary and physical activity behaviors, and for the purposes of this study, attitudes toward self-worth and growth mind-set. The authors’ previous research experiences in the LMD and with underserved populations equipped them with the knowledge and skills to develop and implement the RISE (Raising Inspirational Sons of Excellence) project.

**Overview of the RISE Project**

The RISE project was developed to address the dietary and mentorship needs of underserved boys in the fifth grade in three counties in the LMD. The RISE project was a university collaboration with the Fanny Lou Hamer Cancer Foundation; the Men in Black and Blue (MIBB) Fighting Prostate Cancer, a volunteer group of community health advisors (CHA) in a tri-county area of the MS Delta that was established to fight prostate cancer through prevention and screening education; and the Mississippi Valley State University basketball team (MVSU-BT). The intervention included a multi-generational mentoring component in which older men in the MIBB mentored the MVSU basketball players who in turn delivered the educational component of the program and served as mentors to the youth participants. The aims of this paper are to 1) detail the methods of the RISE project and 2) report the baseline demographic characteristics of study participants and results.

**Program Development**

This RISE project supports a culturally appropriate mentor and nutrition program, including healthy eating principles and social behavioral practices. The program aimed to educate participants on dangers of high-fat and high-sugar foods and beverages, benefits of physical activity, and age-appropriate social behaviors. Additionally, this program included an introspective component that focused on participants’ perceptions of self-worth. Sixteen interactive education sessions were developed with corresponding monthly parent newsletters, home challenges, and field trips. Each session included a healthy snack break and time to socialize or free play with the MVSU-BT.

**Theoretical Framework**

The RISE project was developed using the social cognitive theory (SCT) [22], which supports increasing an individual's self-efficacy and social support to attain healthy dietary and social behaviors. The conceptual framework of the program included the MIBB and the MVSU-BT serving as role models and creating a like-minded peer group to support the likelihood that participants will make healthier lifestyle choices and engage in appropriate social behaviors (Figure). Activities and strategies were developed to create a supportive environment to increase participants’ self-efficacy related to dietary choices and social behavioral practices. Lastly, the program encouraged a growth mind-set in participants so they could perceive future success and increase self-worth. A key construct of the SCT is reciprocal determinism, which is the interaction between people, their behaviors, and their environment. Education components targeted participants’ knowledge and attitudes to promote behavior change. Field trips and special events introduced new environments to participants to shape their perceptions.

**Education Program Components**

The RISE education program is a holistic program that teaches youth to “*Eat Right”* – enabling them to *“Think Right”* – and ultimately to “*Do Right”*. The education program included three components. The first component of the education program – *Eat Right, Think Right* – was nutrition-focused. Education sessions were adapted from the *Balance My Day* curriculum supported by Healthy Kids Challenge (HKC) [23]. The HKC is a nationally recognized program created by registered, licensed dietitians. The Balance My Day curriculum provides 20-minute lessons for children in third through fifth grades. Every lesson includes a “Move and Learn” activity to enhance learning and to increase physical activity. Learning activities were based on the theoretical constructs of social cognitive theory and taught participants skills to build healthy habits for better health and academic success. Topics included healthy breakfast, snacking, healthy beverages, appropriate portion sizes, fruit and vegetable consumption, energy balance, and drinking adequate amounts of water for active play.

The second component of the education program – *Do Right* – was focused on growth mind-set and developing life skills for future success. The *Do You* curriculum was developed from the *From Suspect to Prospect* *Mentoring and Leadership Development* curriculum. The From Suspect to Prospectcurriculum was developed by a Master’s Level Social Work professional (B.S.), which focused on transforming young men who were products of underserved environments to become successful in life. The Do Youcurriculum was modified from the From Suspect to Prospectcurriculum for age-appropriateness. The curriculum provided 20-minute lessons that included cognitive restructuring activities through group dialogue with a mentor. Alternative perceptions were provided to demonstrate a growth mind-set and to enhance self-efficacy by reversing negative thought patterns and replacing them with healthy and positive thought patterns.

The third component of the education program, also *Do Right*, was etiquette education on typical practices for young men that enhance their respectability and improve their reputation in their environments. This component was either incorporated into the Do Youor the Balance My Day lessons depending on the topic. Topics included hand-shaking and proper greetings, posture and how to carry yourself, how to tie a tie, and dining etiquette and manners. Table 1 outlines education session titles and goals.

**Participants and Methods**

**Recruitment**

The target population was African American boys ages 10 to 11 years old in the fifth grade. The MIBB were responsible for recruiting within a three-county area in the LMD. Participants were recruited from schools, churches, and community centers. The MIBB were trained in coaching and listening skills [24] and received nutrition management coaching. They served as mentors, role models and nutrition coaches for the MVSU-BT who served as mentors, role models and nutrition coaches for the fifth grade boys.

**Study Design**

The intervention was an 8-month pre-/post-study design with measures at baseline, mid-, and post-intervention. Data were collected between August 2017 and May 2018. The Institutional Review Board at the University of Southern Mississippi approved the study methods. All participants gave written informed consent (including parental consent and minor assent) at enrollment data collection events.

Education sessions were delivered twice a week every other week. The MIBB attended education sessions to offer guidance and support to the MVSU-BT. There were a total of three field trips and a basketball tournament between the three counties. Newsletters were mailed to the participants’ home. Preparation sessions occurred the week before the education sessions between the field coordinator, the MIBB, and the MVSU-BT. The focus of the preparation sessions was to train the MVSU-BT on the content and delivery of each education session, review detailed lesson plans and the materials, and obtain feedback on previous sessions.

**Data Collection**

Participants were enrolled in the program at a RISE information meeting for each county. Upon consent, baseline data were collected from participants who completed three self-administered questionnaires. Parents or guardians completed a baseline questionnaire to capture standard demographic information, including county of residence, relationship to the child, household income, education level, marital status, transportation access, employment status, and participation in meal/food assistance programs. Child participants completed the remaining scales.

*Measures*

The Block Kids Food Screener was used for dietary assessment [25]. Self-efficacy for dietary behaviors was measured using a six-point Likert-type scale (0=strongly disagree to 5=strongly agree) in response to nine-items (i.e., *I believe I have the knowledge and ability to choose/prepare healthy snacks.*) [26]. Intentions to adopt healthy behaviors were measured using a four-point Likert-type scale (0=not at all true of me to 3=very true of me) in response to five items (i.e., *In the next three months, do you intend to eat at least 4 servings of vegetables/salad each day?*) [26]. Perceived social support by friends and role models for eating behaviors was measured using a five-point Likert-type scale (0=never to 4=very often) in response to seven items each for friends and role models (i.e. *How often do/does your friends/role model give you ideas on how to eat healthier foods?*) [27]. Self-esteem was measured using a five-point Likert-type scale (1=never to 5=very often) in response to five items (i.e., *How have you been feeling about yourself in the past week? …I was proud of myself.*) [28, 29].

*Statistical Analysis*

Mean scores were computed for each psychosocial construct, including intentions, self-efficacy, and social support from friends and role models for healthy eating, and self-esteem. The self-efficacy for healthy eating scale required two items to be reverse coded prior to analysis. Descriptive data for all variables were reported. IBM SPSS Statistics 25.0 software was utilized to analyze data.

**Results**

Fifty male children ages 9 to 12 years (*M* = 10.6 years, *SD* = 0.67) were enrolled from three Mississippi Delta counties. Mostly mothers (76%) completed consent and demographic information on behalf of the children, followed by fathers (14%), grandmothers (6%), and legal guardians (4%). Most of the caretakers were employed (72%), and had reliable transportation (94%), at least a high school degree (36%) or some college but no degree (36%), and household yearly incomes between $0 and $19,000 (58%) or $20,000 and $29,000 (24%). Many caretakers reported being single (46%), with some married (28%), and fewer cohabitating (14%), and divorced or separated (10%). Regarding social services, most of the families participated in the free or reduced lunch program (82%) and about half of the families participated in the free or reduced school breakfast program (52%) and the Supplemental Nutrition Assistance Program (44%). County distribution and characteristics of participants are reported in Table 2.

Psychosocial and dietary variable scores are reported in Tables 3 and 4, respectively. While the overall baseline data for self-efficacy indicated participants “slightly disagreed” to “slightly agreed” they found it easy to eat or choose healthy food and beverage options, their intentions to do so in the next three months indicated otherwise, ranking between “not all true of me” to “not very true of me”. Social support from friends or role models was also lacking with “never” or “rarely” receiving encouragement or offering healthy food and beverage options. Baseline dietary intake data indicated that mean fruit/fruit juice, added sugars, and energy intake exceeded dietary recommendations whereas whole grains and non-starchy vegetables fell below recommendations.

**Discussion**

The purpose of this study was to develop a culturally appropriate nutrition and mentorship program for young African American males using social cognitive theory to influence dietary behavior change. Baseline findings are presented of this 8-month study related to dietary intake and psychosocial variables self-efficacy, intentions, social support, and self-esteem. Baseline results of this study align with the most recent statistics of youth in Mississippi regarding their poor dietary behaviors [4] and indicate a need for social support, undergirding the need for such mentor-based programs like RISE.

A key component to the RISE project was the mentorship of the MVSU-BT delivering the sessions. Young African American males in underserved communities lack positive role models [30], and key stakeholders supporting the current study recognized the urgency of this need. Role models provide much needed social support to at-risk youth in underserved communities. Research indicates a relationship between social support and positive health practices in African American adolescents [31]. Positive health practices include nutrition, physical activity, avoidance of substance abuse, and health promotion [32]. With notable health disparities in the LMD, Mississippi African American youth are at risk for chronic disease and risky behaviors if intervention does not occur. Findings in the current study confirm the need for social support in this vulnerable population to influence health behavior changes. Positive role models provide social support, which can impact self-esteem and health practices such as dietary behaviors and physical activity [31]. Additionally, role models can help mentees develop connections that reflect familial relationships [13]. These relationships can have a significant impact when the mentee is from a single-parent household, like 48% of families in Mississippi [2].

According to a systematic review by the American Heart Association [33], research shows a positive relationship between added sugars, specifically sugar-sweetened beverages, and excess weight, resulting in an increased risk of cardiovascular disease. Further cause for concern is the overweight and obesity rates of children (grades K-5) at 40.4% [3]. To address this concern, the RISE project used evidence-based nutrition curriculum focusing on self-efficacy in attaining a healthy, balanced diet. RISE participants reported consuming an average of 1.2 cups of vegetables compared to the 2.5-cup recommendation and considerably less whole grains at 1.1 oz-equivalent on average compared to the recommended 2.5 oz-equivalent per day [34]. Further, participants consumed more fruit juice/juice (1.7 cups) and added sugar (19.9 teaspoons) as compared to the recommendations (1.5 cups, 11.25 teaspoons, respectively). These baseline findings support the need for intervention in this vulnerable population.

There is limited literature with regard to evidence-based nutrition programs that particularly target at-risk minorities and children. This study fills a gap in the literature by providing a framework for an evidenced-based intervention that targets African American youth and addresses complex social behaviors common in this population. A mentorship model with regular interaction with male role models (MVSU-BT) may contribute to successful retention and engagement of African American male youth. Ultimately, results may not be generalizable beyond Mississippi or other Deep South states, due to geographic and cultural limitations of our study. Future research will report study outcomes of the RISE intervention implementation among African American males.

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