

## Medical College of Georgia

### Fit Body & Soul: A Behavioral Lifestyle Program to Prevent Diabetes in African American Communities- A Pilot Study

T2D is a leading cause of early death in the United States (US), and is becoming one of the most common chronic diseases worldwide. Moreover, prevalence is disproportionately high among racial and ethnic minority populations<sup>8</sup>. For example, ~2.7 million African American (AA) adults aged 20 years or older (11.4%) have diabetes, with rates reaching 25% for those aged 65-74, as compared to 7% in the general population<sup>1-8</sup>. This is in addition to the estimated ~1 million additional AAs who are pre-diabetic<sup>1</sup>. Also, AA are at higher risk for T2D because of the higher rates of obesity and physical inactivity, rates that are twice as high as the overall US population.<sup>9-15</sup>

Because of their disproportionately greater risk of T2D, AAs are a logical target for high-risk research (i.e., the study of subjects at high risk for T2D). AA churches make an ideal setting for such programs. AA churches have historically been a leader in health screening and disease treatment in the AA community. Many previous programs in AA churches have been successful including screening for hypertension, and for cancer prevention, and treatment programs such as smoking cessation and cardiovascular risk reduction.<sup>16-8</sup>

Published reports of applications of the famous Diabetes Prevention Program (DPP) or of the 16-session lifestyle intervention in clinical or community settings are generally lacking.<sup>19</sup>

The purposes of this feasibility pilot study were to; (a) Integrate two evidenced-based lifestyle interventions (Body & Soul and DPP) into a socio-culturally, ethnically preferred intervention (Fit Body & Soul) for use in AA churches in the Southeastern US to promote weight loss, and improve PA (completed); (b) Evaluate recruitment of participants (completed); and (c) Implement the newly adapted Fit Body and Soul intervention in one church to assess church interventionists' comfort in delivery the sessions (In-progress).

#### Integrate two evidenced-based lifestyle interventions – Body & Soul and DPP – into an intervention (Fit Body and Soul): Development of the “Fit Body and Soul” intervention

**Focus Group Meetings.** For this pilot study, the Gospel Water branch Methodist church was selected. This church is located in Evans, Georgia and has 600 members. We did not select a church from Richmond County, which will be the site for our proposed study to avoid contamination. We selected this church for several reasons: (i) members having similar socio-economic and demographic characteristics as members of Richmond county churches; (ii) a high level of interest in the project, (iii) existence of a health ministry in the church, and (iv) our existing relationship with the pastor and church health ministers. This church has a well-developed health ministry with 12 women health ministers. The church pastor was asked to nominate at least 3-4 health ministers who are at least 25 years old, belong to the medical profession, have effective communication skills, and are willing to make a 6 months commitment to the study. Four were recruited. They will receive training, be part of the church advisory panel, deliver the sessions of the intervention and be called church health advisors (CHAs). Because of their time commitment, CHAs are provided with a small stipend to offset their out of pocket expenses and to serve as an incentive for participating in the study.

The focus group meetings were held prior to the start of the project. The church pastor and 4 CHAs with the PI discussed the project concept, set an outline of activities, and marked dates for all activities. The pastor was very supportive and provided information about the project at the Sunday gathering after the services. This team was then responsible for planning and implementing the program in the church. The Church was provided with \$1,000 compensation for arranging all project-related activities in the church. Focus group meetings helped determine the number, length and timing of the church intervention sessions. It was decided that the participants would not be compensated but would receive project T-shirts. This study was approved by the MCG's Institutional Review Board.

**Workshop To Adopt The 12-Session Fit Body And Soul Intervention:** A church advisory panel was formed who provided input and feedback for the purpose of modifying the intervention materials, which we are calling Fit Body and Soul. The basis of the Fit Body and Soul Intervention was the 12-session Group Lifestyle Balance (GLB) Intervention which in turn was modified from the original DPP program. The DPP lifestyle intervention program was 16 sessions and individually based whereas the GLB was condensed to 12 sessions and group based. Members of the original DPP lifestyle team developed and tested the GLB and are now part of the team that will oversee the behavior lifestyle part of the Fit Body and Soul (see description of GLB below). The panel consisted of 10 members that included 1 pastor and 4 CHAs from the Gospel Water branch Methodist Church, and five health ministers from 4 other churches (Good Shepherd Church, Broadway Church, Mt. Calvary Church and Good Hope Church). The team of experts consisted of members from the

Diabetes Prevention Support Center (DPSC) from the University of Pittsburgh (Drs Andréa Kriska and Kaye Kramer), a member from the Body and Soul study (Dr Alexis Williams), a nutritionist and diabetes expert from MCG (Dr Katherine Davis) and key members of the research team (Dr Dodani, the study coordinator and two doctoral students). The church advisory Panel suggested "Fit Body and Soul" as the name of the intervention. The church pastor advised using "Fit" instead of "Healthy" to make the program more church-based and acceptable to the AA community. This group of church leaders and experts modified the 12 sessions of the DPP, using the experiences of the Body and Soul study and input from the advisory panel. They developed a 12-session faith- and culture-based manual for use by participants in the study. The 12-session Fit Body and Soul intervention was formed within a spiritual framework. Working with the advisory panel of church leaders, we facilitated the development of the content and design of the manual. Panel members selected the spiritual themes and scripture used to frame the 3 themes 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 3 focus groups regarding this multi-level spiritually based behavioral lifestyle intervention for AA congregations was generally consistent, showing strong preferences for design and content. We believe that this spiritually based approach is one way to make lifestyle interventions for preventing diabetes more culturally appropriate for AA communities.

Recruitment of Participants: Baseline Data: As the result of earlier focus group meetings, church pastors and CHAs, with feedback from the church congregation, set dates for starting the project, recruiting 40 participants, and testing 12 sessions of the newly modified Fit Body and Soul intervention at the Gospel Water branch Methodist Church. Dr Dodani's research team included Stacey Crawford (a well experienced AA study coordinator with >5 y of experience working with AA church communities in church-based and public housing settings). It also included 2 doctoral students: **(a)** Ms Lovoria Williams, masters-prepared Family Nurse Practitioner (FNP) and faculty at MCG, School of Nursing, is completing her doctoral work in nursing practice (DNP). Ms Williams as AA FNP with vast experience with AA church communities is an integral part of several church advisory boards. Ms William will work with Dr Dodani on this study as a part of her DNP capstone project. Dr Dodani will supervise her as a mentor; **(b)** Ms Amber Brown, a PhD student at MCG who is receiving training from the PI and her team on faith-based lifestyle studies in AA communities. She will use this collaboration with Dr. Dodani to develop a dissertation on the evaluation of the Fit and body Soul intervention in AA church settings.

With this experienced and enthusiastic team, the first Kick-off event (recruitment of participants) took place on Sunday, January 13, 2008. Announcements for the kick-off event were made through church bulletins, study fliers on church notice boards and Pastors' messages after Sunday sermons. All 4 CHAs also participated in development and modification of the 12-session of Fit Body and Soul intervention in the church. With the help of the Pastor and church leader support, the main Church room was used for this event and 5 small rooms were used for screening and anthropometric measurements. Dr Dodani and her research team (study coordinator and 2 doctoral students) arranged the logistics and other incentives for the participants (T-shirts). Four CHAs who were trained practicing nurses helped the PI screen participants. Eligibility criteria were: **(a)** parishioner of this AA church; **(b)** aged 20-64 y; **(c)** self-described AA; **(d)** BMI $\geq$ 25; **(e)** those who gave us a letter from their PCP approving their participation and stating that they were fit and eligible to participate in the study. Those who fulfilled all criteria, had PCP approval, and gave written informed consent were entered into the study. All participants were given clear instructions and the study was briefly described. No major problems were encountered during the pilot study. Forty one out of forty five of those screened fulfilled the eligibility criteria of BMI  $\geq$  25.

Results: Mean age was 46  $\pm$  96 years. The majority (85.3%) was female (Table 1). Most (73.2%) had graduate level degrees. Many (48.95%) were obese (i.e. BMI of 30-39 (48.95%; many (32%) had severe obesity (BMI  $\geq$  40; some (19.55%) were overweight. This pattern was also reflected in high waist circumferences (WC), a marker of abdominal adiposity ("central obesity"). Mean WC was 109  $\pm$  14.86 and 115  $\pm$ 12.21in males and females respectively. Blood pressure assessments in the church clinic indicated that most were hypertensive (68%); 40% were newly diagnosed hypertensive. MAQ questionnaire assessments showed that 68% were physically inactive. None were cigarette smokers or diabetic. All diabetes risk factors (hypertension, BMI and waist circumference) were defined using standard criteria In this small sample, BMI was found to be significantly associated with waist circumference (p=0.0001).

This small data set has uncovered a high prevalence of obesity, including central obesity, in an AA population that requires special programs. All participants were entered into the program and will receive the Fit Body and Soul intervention from the trained CHAs who will receive a two-day training session from the Diabetes Prevention Support Center core team from the University of Pittsburgh. Implementation of the newly adapted Fit Body and Soul intervention at Gospel water branch church is in still progress and 5 of the 12 sessions have been delivered by CHAs. The whole program will be completed by the end of April, 2008.



**Table1. Baseline data in the Study participants (n=41)**

Variable	N (%)
Age	46* (9.6) <sup>†</sup>
Gender	
Male	6 (14.63)
Female	35 (85.37)
Education	
Primary	2 (4.88)
High School	8 (19.51)
Graduate	30 (73.17)
WC	
Male	* 115 (12.21) <sup>†</sup>
Female	* 109 (14.86) <sup>†</sup>
High WC	34 (82.93)
Normal	7 (17.07)
BMI	
Over weight	8 (19.51)
Obese	20 (48.78)
Morbid	13 (31.71)
BP	
Hypertension	28 (68.29)
Normal	13 (31.71)
‡Physical Activity	
Sedentary	28 (68.12)

\* Mean, <sup>†</sup>Standard Deviation, € WC= Waist Circumference – men >102 cms & women > 88 cms, ‡ using Modified Activity Questionnaire (MAQ)

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