

Meade Activity Center Program Evaluation Report

2012-2013

for
Meade Activity Center, Inc.,
the Foundation for a Healthy Kentucky's
Kentucky Healthy Futures Initiative (KHFI)
and
the Corporation for National and Community Service's (CNCS)
Social Innovation Fund



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INTRODUCTION

Rural residency is a leading health indicator linked to health inequity, and suggests that communities create social and physical environments to improve public health.¹ People living in rural areas, as compared to those living in suburban^{2,3} and urban areas⁴, are more likely to be obese and to be less active, have less access to preventive health services, and quality health care;^{12,16} and have a higher risk of many lifestyle diseases, including heart disease, high blood pressure, type II diabetes, obesity and cancer.⁵ Furthermore, many lifestyle diseases such as high blood pressure, type II diabetes, cancer, and heart disease are associated with overweight and obesity.^{6,7}

In order to achieve good health, the Surgeon General and numerous health experts recommend that adults and children be physically active.^{8,9} Developing healthy habits at a young age, as well as providing children with the knowledge, attitude, skills, and opportunities to be physically active, are crucial when promoting health and preventing disease.¹⁰ Overweight or obese children who lived in rural areas are more likely than children who live in urban areas to be white, poor, female, and live a sedentary lifestyle (i.e. use a computer for non-school related activities (e.g. gaming) for more than 3 hours per day and watch television for more than 3 hours per day).²

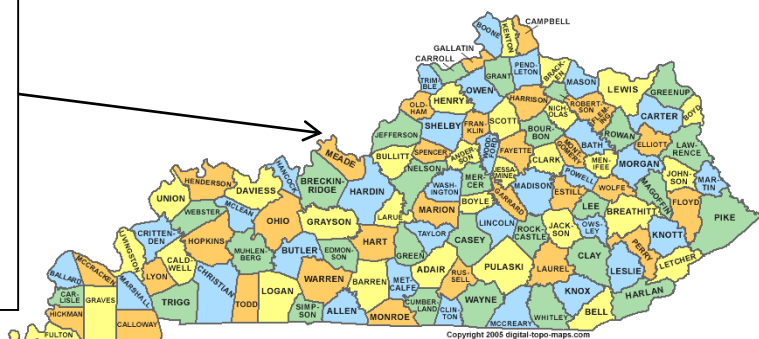
Children should participate in a variety of age-appropriate and fun moderate to vigorous intensity physical activities for at least 60 minutes every day.^{1,10-15} They should not only be educated on the quantity and quality of physical activity but be given equal opportunities to participate in physical activity programs, regardless of their income or access to consistent transportation^{16,21} For children in rural areas, having access to a variety of physical activity opportunities is a strong predictor of physical activity.^{17, 18}

Setting

Meade County is a rural county in Kentucky with a population of 29,237 residents.¹⁹ In Meade County, 49% of students attending public schools are eligible for free or reduced-priced meals.²⁰ Furthermore, less than one-quarter (24.2%) of adolescents consumed two or more fruits per day and only 10.9% consumed three or more vegetables per day.²¹ Recreational facilities are non-existent within Meade County boundaries and opportunities to be physically active in schools, through physical education programs and sports teams, are minimal.

SNAPSHOT: MEADE COUNTY*

Population: 29,237
Population < 18 years: 7,689
Median Household Income: \$42,922
Poverty Rate: 18.2%
Unemployment Rate: 13.2%
Adult obesity prevalence: 33%
Adult DM-II prevalence: 11.1%



* Kentucky County Health Care Profiles: Meade County. Community and Economic Development Initiative of Kentucky at the University of Kentucky College of Agriculture. <http://www.ca.uky.edu/CEDIK>

Intervention: The Meade Activity Center (MAC) Project

In the fall of 2008, parents and community leaders of Meade County assembled to discuss the lack of a public swimming facility for their children. From that meeting, the residents determined that a broad range of community needs existed, among them, increasing access to recreational facilities and health-related

programming in Meade County. Addressing the lack of physical activity facilities and resources in the community became the primary goal for these community members, thus forming the Meade Activity Center, Inc. in that same year. The MAC board of directors hired an executive director and immediately began offering youth sports and physical activities, community events, and summer camps. The primary focus of these concerned citizens lives on today. The current focus of the MAC Project is to



create physical activity opportunities and places that will address the gaps in availability of access to services due to income disparity at the individual and county levels. The MAC goals are to teach cognitive and behavioral skills, cultivate social support, strengthen organizational support, and enhance community access to physical activity opportunities thus ensuring that Meade County residents can live physically active lives.

Creating word-of-mouth and distributing fliers throughout the school district have been

sufficient advertising for recruiting children to participate in MAC Project programs. Advertising for programming occurs through distributing MAC program guides to all elementary schools and the middle school and high school, churches, and frequently visited businesses (e.g. grocery stores) in the district prior to a registration period. Most activities last approximately 1 hour per session, exceptions are summer day camps, which last approximately 6 hours per day. There are five rounds of 6-week

THE MEADE ACTIVITY CENTER VISION:

To create a community focused on improving the lives of children, families, adults, and seniors of all income levels, races and creeds by promoting healthy lifestyles, social familiarity, and economic prosperity.

program sessions per year - Fall 1, Fall 2, Winter, Spring, and Summer. During each session, approximately 10 different activities are offered. Additionally, an after-school CATCH Kids Club met twice per week throughout the school year. The CATCH Kids Club curriculum teaches children and reinforces the skills necessary to make healthy nutrition and physical activity choices during the program and in their lives. The program provides the curricula, equipment, and coaches' training and is offered as a free MAC program to any elementary school aged child. All MAC programs are offered in borrowed locations throughout Meade County such as elementary schools, high schools, as well as on the Meade Activity Center land.

Purpose

The purposes of this study are to determine if the implementation of physical activity programming improves the health behaviors and outcomes of children who would not have otherwise had access to physical activity opportunities and places in a rural community, and to determine the extent to which a community coalition is effective at achieving its mission of improving its' communities' health. The individual, social, and organizational levels of the Social Ecological Model,²⁷ the individual, behavioral, and social and environmental aspects of the Social Cognitive Theory,²²⁻²⁴ and the coalition characteristics, structures, and processes of the Community Coalition Action Theory²⁵ will serve as the theoretical foundations from which individual health behaviors and outcomes and the effectiveness of a communities' coalition functioning will be measured.

METHODS

Study Design

This study employed mixed-methods approaches to evaluate effectiveness of the children's programming with comparisons of an intervention (exposed) and a comparison (unexposed) group. Additionally, longitudinal intervention participation was collected. A single case study design of the coalition effectiveness was employed in Year 1 and sustained impact design data will be tracked over time. Cross-sectional data collection methods included survey administration, semi-structured interviews and focus groups, as well as meeting and event observations. While a single case study design may not be generalizable to other populations, in Meade County, determining the efficacy and fidelity of programming and infrastructure sustainability serve tremendous purposes. Three primary research questions guided the MAC Project:

1. Did the MAC Project provide programming to Meade County children who otherwise did not have access to physical activity programming or places;
2. To what extent did the MAC Project's children's programming improve children's behaviors and outcomes; and,
3. To what extent was the MAC Project Coalition effective?

In addition to these research questions, the extent to which the MAC Project was implemented as intended was measured. Ongoing process evaluation continues regarding the strengths and areas of improvement for MAC programming, coalition effectiveness, and MAC sustainability.

Instrumentation

Children's health behaviors were measured by using the Children's Health Survey (CHS) which included items modified from the Youth Risk Behavior Surveillance Survey and Children's Physical Activity Correlates Survey.^{26,27} Children's height and weight were converted to a body mass index (BMI) score and the number of 20-meter laps run in a gymnasium were converted to a cardiovascular fitness score. Both BMI and cardiovascular fitness measures followed the Fitnessgram protocol which is a physical fitness assessment series of instruments and criteria for children.²⁸

Other measures collected for children were completed through the DAXCO program software in which demographic information was gathered by a MAC administrative assistant upon children's enrollment in any MAC Programs. The frequency of children's participation in MAC programming was collected by MAC Coaches on attendance rosters at each session.

The Coalition Effectiveness Inventory (CEI)²⁵ survey questions were used to evaluate the coalition's characteristics, structures, and processes. Additionally, coalition members and other key stakeholders were interviewed by the researcher to determine the strengths and areas for improvement of MAC programming and MAC goals.

Participants

Prior to participant recruitment or study involvement, the researcher's Institutional Review Board approved all study protocols. Informed consent was obtained by all adult participants and parental/guardian consent and child assent for the survey were obtained for children. No adult or child was excluded from any MAC Project programming due to not participating in the study. Further, neither participants nor program implementers were notified as to whether any MAC participants or coalition members were a part of the study or not to ensure equal treatment and non-bias in treatment fidelity.

During year one, January 2012 through May 2012, all children who enrolled in the CATCH Kids Club after-school program in 5 public schools were invited to participate in the study. A total of 68 of the 75 children (90% response rate) provided parental informed consent and child assent to participate in the CHS survey and fitness testing portions of the study.

Also during year one, in June 2012, purposive sampling techniques were employed to select the setting and participants for the coalition effectiveness portion of the study. Twenty-five coalition members, included board members, past board members, programming volunteers, and other influential key stakeholders (as determined by the MAC Executive Director) were invited to participate in the survey study. The response rate for the survey was 60% ($n = 15$). Additionally, 13 of the 15 survey respondents agreed to participate in the interview process with the researcher.



Image 2: Swim lessons at the restored MAC pool

the CHS survey portion of the study. To create a matched comparison of children exposed and unexposed to MAC programming, the researcher incorporated two sources of data. The Meade County Public Schools agreed to incorporate fitness testing into their regularly scheduled physical education curriculum in all six elementary schools district-wide. These data were gathered through Fitnessgram fitness testing protocols purchased by the MAC and housed in the public schools. The researcher collaborated with the MAC coalition members and Meade County Public Schools' Information Technology personnel to retrieve matched fitness data ($n = 54$) from the schools' Fitnessgram database. Matching of exposed to unexposed children of

Beginning in August 2012, the scope of the evaluation expanded to assess health behaviors and outcomes of all children who participated in MAC programs, not just children's enrolled in the CATCH Kids Club after-school program. Unfortunately, a disappointingly small sample (5.5%) of the 766 children who were enrolled in the MAC database provided parental informed consent and child assent needed to participate in

MAC Project programming were determined by selecting children (de-identified) within the public schools who did not participate in MAC Project programming and who had similar demographic characteristics (i.e. grade, gender, and body mass index) of children in the MAC Project programming.

Procedures

During year one (January 2012-May 2102), all children who participated in the CATCH Kids Club after-school programming were invited to participate in the CHS and fitness portions of study. Prior to data collection (December 2011), the researcher met with the CATCH Kids Club Coaches, Executive Director, and a coalition members to train them on the parental/guardian and child assent processes, and the CHS and fitness testing data collection procedures. Data were collected by the CATCH Kids Club Coaches at baseline (January 2012) and post-test (May 2012) then given to the researcher.

Beginning in August 2012, all children who participated in any MAC Project programming were invited to participate in the CHS portion of the study. In August and again in May 2013, an invitation letter was mailed from the MAC Executive Director, the Children's Health Survey (CHS), two parental/guardian informed consent forms, two child assent forms, and a pre-stamped, MAC-addressed envelope to all children's home addresses ($n = 766$, ages 5-18 years) who were previously or currently enrolled in any MAC programming. Parents/guardians were instructed to sign the parental/guardian informed consent form, ask their child to sign the child assent form, ask their child to complete the CHS, and mail the three items to the MAC. Only surveys that were returned accompanied by signed parental informed consent forms and child assent forms were used for data analysis

During the summer of year two, prior to fitness data collection, the researcher met with all Meade County Public School physical education teachers, the MAC executive director, and several coalition members to train all personnel on Fitnessgram fitness testing procedures. Beginning in the fall of year two (September 2012), district-wide ($n = 6$ elementary schools) fitness data (cardiorespiratory fitness and body mass index) were collected by each school's physical education teacher from all school children ($n = 1771$ children) as part of their regularly scheduled physical education curriculum. The researcher retrieved all MAC Project participants' fitness data and compared it to non-MAC Project participants' fitness data using a between-group study design ($n = 54$). Further, for those children who were in the original cohort of the CATCH Kids Club after-school program, subsequent years' (year two) changes in which they participated in any MAC Project program over time were evaluated. Also during year two, attendance rosters were kept by program. At the end of each session (five sessions per year and approximately 10 programs per session) all data were manually entered into an "attendance" database developed by the External Evaluator.

In July 2012, an invitation letter from the Executive Director, the Coalition Effectiveness Inventory (CEI), and informed consent forms were mailed to the home addresses of all coalition members ($n = 20$) and other influential key stakeholders ($n = 5$). Participants were asked to complete and mail the survey, along with their signed informed consent form, back to the Meade Activity Center within two weeks. Since Meade County is a relatively small community in which

many of the coalition members and key stakeholders “run into” each other, the Executive Director reminded the participants to complete their surveys and mail them and reassured them that he would not see the individuals results or know if they completed the surveys or not. The researcher collected the surveys from the Meade Activity Center.

In addition, the researchers used conducted qualitative interviews using a semi-structured interview guide consisting of questions adapted from the CEI about the participant’s perception of the current stage of the coalition, strengths and weaknesses of the coalition, and their thoughts on the future of the coalition.



Image 3: First Tee golf program emphasizing sportsmanship and problem-solving skills.

Approximately two weeks after the surveys were mailed to the coalition members and key stakeholders, a community volunteer, along with the researchers, began calling participants to recruit their participation in an interview and/or focus group. The community volunteer was valuable in recruiting participants since she knew each of them and could reassure them that their participation in the study would remain confidential to the researchers only. Four one-on-one interviews and three group interviews ($n = 2, 3, \text{ and } 4$) were conducted by the principal investigator and trained graduate research assistants for a total of 13 participants. Interviews and focus groups

were designed to take 30 to 60 minutes and to further garnering participant’s perception of the coalition effectiveness as well as the strengths and weaknesses of the MAC. The interviews were recorded and transcribed immediately upon completion of the meeting.

Data Analysis

For all of the quantitative data described in each of the research questions, each item on the surveys or fitness score tests, including items left blank, were coded and the data were entered into an Excel spreadsheet. Blank items were coded as “.” to represent missing data. When an item was missing, the mean of answered items were the imputed value for the missing response. Quantitative data were imported into Statistical Package for the Social Sciences (SPSS®) version 20.0 (SPSS, Inc.) for analyses. A significance value of $\alpha = .05$ was set for analyses in this study.

For year one (January 2012-May 2012) 59 out of 69 children (85%) who completed the CATCH Kids Club program, were analyzed. Paired sample t-tests were employed to analyze baseline and post-intervention physical activity self-efficacy, physical activity levels, sedentary time, and nutrition behaviors. The percent of participants who responded “yes” to the May 2012 CHS item “Are you physically active because you participated in Meade Activity Center

Programs?” compared to “no” was calculated. Descriptive statistics illustrated the demographic, access, and health behavior items.

In year two, August 2012 through May 2013, a repeated measures ANOVA was employed for all children enrolled in any MAC program to determine changes in behaviors and health outcomes. An independent sample t-test comparing number of opportunities for physical activity for not-low SES compared to low SES was conducted. Pearson product moment correlation was employed to determine if there was a relationship between socioeconomic status and whether children perceived that they were physically active because of the MAC.

Also in year two, 54 MAC participants were matched with 54 non-MAC participants on age, gender and a fall 2012 measure of BMI (within .50). Additionally, 46 MAC participants were matched with 46 non-MAC participants on age, gender, and a fall 2012 Pacer score. A paired sample t-test of the matched pairs was conducted with MAC participants’ scores with non-MAC participants’ scores ($n = 54$ pairs).

The frequency of participation in MAC sessions, cardiovascular fitness levels, school TV time, school Gaming/Video time, and after-school physical activity were converted to ordinal data in year two. Participation was categorized into 5 equidistant levels. After-school physical activity time was converted to ≥ 60 minutes or < 60 minutes and television viewing time and computer/video time were converted to < 120 minutes or ≥ 120 minutes. Cross tabs and Spearman’s correlations were generated to determine the association between number of individual program sessions children attended and their physical activity and sedentary behaviors.

For the qualitative portion of the data, audio from each coalition member or key stakeholder interview was recorded, de-identified, and transcribed verbatim. The researcher used deductive coding techniques, and adopted codes based on constructs from the CEI²⁵ to code data related to constructs within the Community Coalition Action Theory, Social Ecological Model. Further, emergent themes regarding the fidelity of the implementation of programming that surfaced outside of these theories were analyzed by the researcher.



Image 4: A sign of the Times: The home of the future Meade Activity Center in Brandenburg, Kentucky

Intervention and Data Collection Implementation

To determine the fidelity to which the MAC Project was implemented as intended, a variety of observational, content analysis, and informal and semi-structured interview were conducted by the researcher. Since physical activity programming and coalition development were new innovations implemented in this rural community, significant time, training, and financial resources were dedicated to start-up operations, staffing, equipment, and curricula. For example, in order to collect and store participant information, DAXCO Operations & Accounting systems were purchased during year one. MAC staff has continued efforts to work with DAXCO support to create the necessary reports to determine quarterly enrollment reports including participant numbers and financial assistance figures. While DAXCO has been an excellent system for managing membership data, one limitation of the system is that it does not allow for the tracking of individual-level participation data. For example, a query could be “run” to list the number of programs in which a child has enrolled (i.e. golf in Spring 2012, swim camp and horseback riding camp in Summer 2012, and CATCH After-school Kids Club and flippers in the winter session of year one, 2012), but it did not have the capabilities to record the child’s frequency or dates of participation.

To address this need to capture individual-level participation data, the External Evaluator created “attendance sheets” for each of the youth sport coaches and instructors to take attendance during every session. At the end of each session (five sessions per year), the coaches and instructors mail their “attendance sheets” to the Executive Director, who then gives them to the External Evaluator. The External Evaluator manually entered each child’s frequency of participation in programs into an Excel database.

With this increase in individual-level longitudinal data coming from three different systems, Fitnessgram, DAXKO, and Excel spreadsheets, the data management system (i.e. Excel) was maxed out. To address this influx of data, a data analyst was hired through a local university by the researcher to “merge” all data and house the data in one system. The hiring of a new personnel and creation of a new system will allow data analysis to flow more efficiently in future years.

In many ways year one two data cannot be compared side-by-side, as a direct comparative may be misleading. Initially, children enrolled in CATCH Kids Club programming was proposed for data collection opposed to year two, when all children in MAC programming were used for data collection. With this said, year one and year two results are provided where appropriate. When the original MAC Project began, CHS and fitness testing were required of only the children who were enrolled in CATCH After-school Kids Club. As the MAC Project grew, fitness testing now is conducted within the public school system and is required of all children (including children involved in MAC programming) and surveys were mailed to all MAC children’s home address. There was a reduction in useable data from the CHS, BMI, and cardiovascular testing because of a lack of signed informed consent forms. Also, many sets of data were incomplete because the student was absent on either the pretest or post-test data collection dates.

RESULTS

Children's Demographics

The breakdown of male and female participants in MAC programming is very encouraging. Traditionally in rural counties, although there is equal number of sports for boys and girls, the number of boys and girls who can participate in the sports is different. For example, a boys' football team can accommodate up to 50 boys while a girls' cheerleading team can only accommodate 15 girls. The MAC programming has closed this gender discrepancy gap that rural counties tend to experience. The latest enrollment records (June 2013) indicate that 141 boys (44%) and 176 girls (56%) participated in MAC programs during the summer day camps.

Although efforts are made by the MAC to offer programs to a racially/ethnically diverse group of children, Meade county census records indicated that the majority of the residents are white (92%). Thus, the make-up of participants in MAC programming is largely white. In fact, of the 214 registration forms where applicants disclosed their race/ethnicity, 202 listed white (94%), seven Asian (3.3%), three African American (1.4%), and two Hispanic (<1%) as the race/ethnicity categories. Interestingly, 35% of registrants (113/327) did not report a race/ethnicity. Further exploration into the race/ethnicity categories on the registration forms or reasons as to why participants did not indicate their race/ethnicity may help programming to understand their reach and promotion. Further, barriers that may be present to engaging diverse children may emerge and be addressed.

The MAC is committed to assuring that programs were accessible to children regardless of socioeconomic status. MAC offered and publicized a scholarship program for families in need. While general program fees range from \$30-\$50 per 6-week session, the CATCH Kids Club after-school program that is offered in all of the elementary schools is free for all children and meets twice per week during the entire school year. Participants have access to reduced fees by filling out a short application. A sliding scale for fees is based upon the household income and number of children and adults living in the home. For example, a family of four, (i.e. two adults and two children or one adult with three children) with an annual household income of \$22,350 may receive 75% reduction in programming fees. So a child who wishes to play basketball would only pay \$7.50 for the entire 6-week session. Further, scholarships are also available for children who cannot afford the sliding scale fees. An administrative assistant in the MAC office works closely with families to ensure that all who want to participate in programming are not deterred because of fees. Renewal of financial aid is required annually. According to an administrative assistant, approximately 25% of the children who participate in MAC programs receive some percentage of financial assistance. In the Executive Director's latest report to the Foundation for a Healthy Kentucky, 24 families received financial assistance for programming that began in Summer 2013.

According to the Executive Director, "the MAC has full intention to work with other area agencies again such as the health department, University of Kentucky Cooperative Extension Office, and school personnel. The MAC will evaluate registrations and make a concerted effort to ensure that students who are most in need of the program will receive first priority in the registration process."

Program Reach

The scope and amount of MAC programming increased dramatically from the first to the second year (Figure 1). As data collection began in Spring 2012, the MAC offered nine different interventions for kids. Programming increased by adding week-long summer camps ($n = 17$). When the regular classes began again in Fall 2012, the MAC offered six different activity programs, the initial Fall session (Fall "1") offered the fewest number of programs since was in the beginning of the academic school year. This may be because parents are focused on their child's school routine and many of MACs coaching staff are teachers, and their available time is also limited as the school year begins. MAC felt that limiting program offerings was the most respectful strategy given its close partnerships with local schools. Once school routines are established, the MAC began offering more and more programs to meet the demand for greater diversity in program offerings. Comparing programs year to year where there is overlap, shows this increase. Where there were nine programs offered in Spring 2012, that number increased by 56% to 14 programs in Spring 2013. A similar increase occurred between Summer 2012 and Summer 2013 when program offerings increased from 14 to 17 programs, representing a 21% increase over the previous year. By August 2012, interventions were rolled out to the entire school district and included summer camps, Sports Saturdays, along with the CATCH Kids Club after-school program. In general, Fall 2, Spring, and Summer sessions are the most popular, and therefore MAC offers more variety and quantity of youth programs during these times.

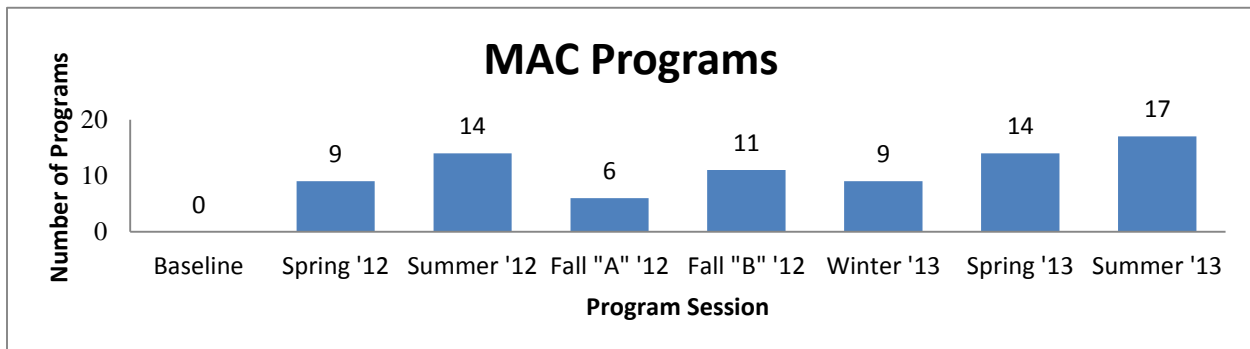


Figure 1. MAC Programming

What originally started as an emphasis on after-school programming has grown into year-round programming. Not only is the number of programs increasing, but the level of participation is increasing as well. The original cohort of children who participated in the CATCH Kids Club after-school program in January 2012 was 75 children. To date, over 800 unique children have participated in at least one program, and approximately 300 children are enrolled for participation in each session in a variety of MAC programs. Program records for youth programs documented quarterly participation as follows, these numbers contain duplicates quarter-to-quarter (Figure 2).

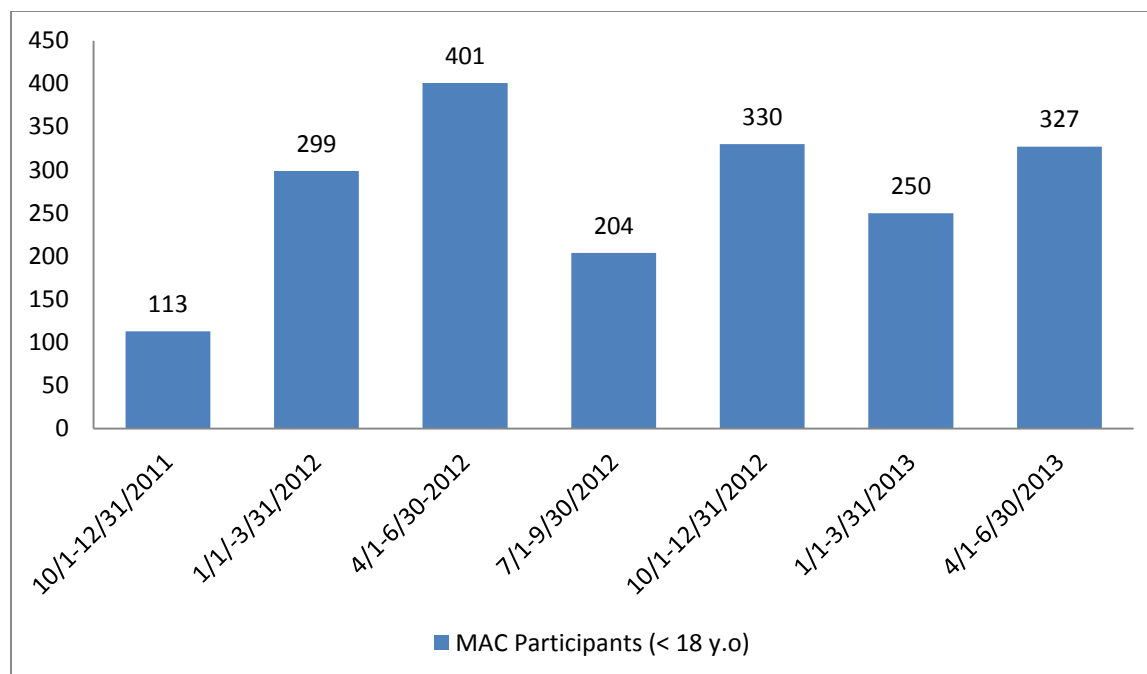


Figure 2. MAC Participation

Children’s Health Behaviors and Health Outcomes

Of the 76 CATCH Kids Club enrolled in the first CATCH session, 68 completed the Children’s Health Survey (CHS) with required parental/guardian consent and child assent. The participants were 64.7% ($n = 44$) female, 85.3% ($n = 58$) white, and 45.6% ($n = 31$) with low SES. The mean age was 10.51 ($SD = 1.23$) and 71% of respondents indicate that they were physically active because of participation in MAC program. Forty-three of the 76 children enrolled in CATCH participated in the pre- and post-testing of the CHS and fitness testing. The results of paired sample t-tests are presented in Table 1. The overall effects of year one CATCH Kids Club after-school program were successful in improving children’s aerobic capacity, increasing their daily physical activity time, as well as improving their belief that they could be physically active afterschool. No change in sedentary behaviors (TV and other screen time) was detected.

Table 1. Children’s Health Behaviors and Outcomes in Year 1

Variables	Baseline		Post-intervention		<i>T</i>	<i>p</i> -value
	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)		
Physical Activity Levels	43	.94 (.78) < 30 min	43	2.0 (1.03) 60-89 min	-6.02	<i>p</i> < .01
Aerobic Capacity (Pacer Laps)	41	12.9 (8.4)	43	17.23 (14.05)	-3.08	<i>p</i> < .01
TV Time	43	2.9 (1.69) 60-89 min	43	2.67 (1.54) 60-89 min	.93	<i>p</i> = .36
Computer/Gaming Time	43	1.84 (1.58)	43	1.56 (1.44)	1.25	<i>p</i> = .22

		< 60 min		< 60 min		
Physical Activity Self-Efficacy	42	3.07 (.75)	42	3.4 (.54)	-2.75	<i>p</i> < .01

In year two, 42 of the 766 MAC participants completed the CHS with required parental/guardian consent and child assent. The participants were 59.5% ($n = 25$) female, 100% ($n = 42$) White, and 16.7% ($n = 7$) with low SES. Low SES children ($n = 7$) were less active than not-low SES children ($n = 35$). There was a statistically significant difference in mean number of sports or physical activity programs participated in for low SES ($M = 1.57$, $SD = 0.79$) and not low SES ($M = 4.23$, $SD = 2.00$), $t(40) = -3.432$, $p = 0.001$. Although it appears that low SES children may not use the MAC programming, this finding should be interpreted with caution. It is important to note that prior to MAC programming, no extracurricular physical activity opportunities existed in Meade County for any children, regardless of their socioeconomic status. It was noticed by the original coalition members in 2008 that the affluent children’s parents were able to drive them to Louisville or Corydon to participate in sports and other physically active camps. Therefore, the CHS question that asks if children were physically active because of the MAC is a more specific indication of the MAC’s reach to “children who would have otherwise not had access to physically activity opportunities.”

Other selected health behaviors and outcomes of low compared to not-low SES children (see Table 2) showed positive changes, although not statistically significant, which may have been due to small sample size. One half (50%) of the children indicated that they were physically active because of their participation in MAC programs. Pearson’s correlation revealed there was no statistical difference between SES and children’s perception of access to MAC physically active programs, $r(40) = 0.064$, $p = 0.688$.

Table 2. Comparison of Not-low and Low SES Children’s Health Behaviors in Year 2

Variables	Not-low SES		Low SES		<i>T</i>	<i>p</i> -value
	<i>n</i>	<i>M</i> (<i>SD</i>)	<i>n</i>	<i>M</i> (<i>SD</i>)		
Fruit and Vegetables	35	3.71 (2.32)	7	5.43 (3.91)	2.495	$p = .122$
TV Time	35	.89 (.32) <60 min	7	.86 (.37) <60 min	.043	$p = .836$
Computer/Gaming Time	35	.97 (.16) <60 min	7	.86 (.37) <60 min	1.667	$p = .204$
Self-Efficacy	35	3.71 (2.32)	7	5.43 (3.91)	.144	$p = .706$

In the Spring of 2013, results of the matched, paired sample t-test indicated that there were no significant difference, $t(53) = -.73$, $p = .47$, in BMI of MAC participants ($M = 18.91$) compared to non-MAC participants ($M = 18.66$) and that that there was no significant difference $t(45) = -1.37$, $p = .176$, in mean number of laps run by MAC participants ($M = 16.39$) and non-MAC participants ($M = 17.94$).

During year two, children participated in an average of 15 program sessions. A typical program met over 6 sessions, so children participated, on average, in 2 ½ programs. Physical activity and sedentary behavior data retrieved from 14 children who returned the Children’s Health Survey in May 2013 and who had ever been MAC participants.



Image 5: Before the MAC, the closest gymnastics program was in Elizabethtown, 45 minutes’ drive from Brandenburg.

Using Spearman’s correlation tests, no significant relationships between level of MAC participation and physical activity, TV and computer time were detected. See Table 3 to see the number of times children participated in MAC sessions and their participation in physical activity recommendations (60 minutes or more of physical activity) and screen time recommendations (less than 2 hours of TV and less than 2 hours of video/computer gaming).

Table 3: Children’s Participation in MAC Sessions and Health Behaviors

# sessions attended	Total <i>N</i>	60+ min PA	< 120 min TV	< 120 min Video Games
ANY	14	7 (50%)	12 (85.7%)	13 (92.9%)
0-11	8	4 (50%)	6 (75%)	7 (87.5%)
12-23	4	3 (75%)	4 (100%)	4 (100%)
24-35	0	0	0	0
36-44	1	0	1 (100%)	1 (100%)
45+	1	0	1 (100%)	1 (100%)
Spearman Correlation		$r = -.119$ $p = .684$	$r = .341$ $p = .233$	$r = .232$ $p = .425$

Results from the Coalition Survey

During the summer of year one, survey ($n = 15$) and interview/focus group ($n = 13$) results from coalition members and key stakeholders indicated that participants perceived that their community’s lead agency ($M = 1.87, SD = .34$) and board of directors ($M = 1.84, SD = .17$) were effective in their roles of leading the physical activity programming and securing resources for maintaining current and future operations. They expressed satisfaction with hiring an executive director to organize and manage the project and felt that their overall mission, goals, and objectives were clear and manageable. Their perceptions of the effectiveness of the project staff ($M = 1.68, SD = .28$) and coalition membership ($M = 1.48, SD = .44$) in implementing

physical activity programming however were not as favorable. Participants felt that finding qualified and certified staff to implement the physical activity programming was a challenge.

Further qualitative inquiry identified that although the coalition structures ($M = 1.5$, $SD = .39$) and processes ($M = 1.5$, $SD = .37$) were low during this beginning stage of the coalition's formation, the participants felt confident about their progress and ability to improve. Using the Coalition Effectiveness Index as the theoretical framework for deductively coding data, results from the MAC Coalition members and key stakeholders will be discussed in relation to lead agency, staff, leaders, coalition members, coalition structures, and coalition operations and processes effectiveness.

Lead Agency and Convener Group. The majority of respondents discussed the call to action from the community. A few key stakeholders, within the now executive board, conducted a survey of community members and their interest in pursuing the creation of a fitness facility within the rural Meade County. One respondent indicated "The evidence from those calls (i.e., survey) was that the community at large was very much in support of pursuing this type of project... a community recreation center that would encompass weight facility, indoor pool, indoor gymnasium, and a lot of open rooms for classes." After the initial survey indicated a community need, various members of the community dedicated their time and effort to forming an executive board, establishing non-profit status for their organization, and delegating roles in order to make their dream into a reality. The chairman of the board stated "I agreed to serve as chairman because someone actually had to set the direction of where we were going." By stepping into the leadership role, he agreed to convene the coalition and actively pursue funding, as well as recruit other community members to assist him in this task.

Leadership and Staffing. A common theme identified throughout the interviews was the dedication of the volunteers. However, the goals and objectives of the coalition required assistance of paid employees. Interviewees commended the hiring of an experienced executive director with a strong recreational programming background. Additionally the coalition hired administrative staff, and other part-time staff to help run programming. Additional staffing helped to take the burden off of some of the board members, who were previously serving in more of a staff role to get MAC started. Interviewees discussed in anticipation that staff would continue to grow, and take responsibility of aspects of the project that are still being managed directly by the board. One interviewee noted, "Over time the board of directors will become more of an oversight and approval board...more of a classic board of directors."

When asked to describe the members of the executive board and others in the community who played a role in developing the MAC, one participant indicated "I've seen other boards where you have too many bankers or lawyers...this group actually does have diversity in how people think and they appreciate the different ways of thinking." Another participant stated "We felt like it was very important for us to make sure that we had the ability to set up the right type of processes in place to be able to effectively communicate." And lastly, to address long-term sustainability, one coalition member said "By us taking the steps to acquire the facility that we're at now and start pumping programs into the community it has kinda (sic) built the momentum... it also has maybe given us some more credibility with some of our keys stakeholders... they're

starting to see that there's a staff in place and a group of coalition members who understand what it takes to have some longevity and sustainability."

Coalition membership. In forming the coalition, the chairman and community stakeholders looked to form an executive board including individuals with expertise in various areas (e.g., grantwriting, marketing, technology, finance) to help build the infrastructure with a small staff and provide different points of view. Individuals on the committee knew their own strengths and served the coalition in that respect which "kept us from getting burned out by focusing on our responsibility or areas." By focusing on job tasks in which individuals excel, and not becoming bogged down in areas in which individuals do not excel, is a strategy in which coalition members can thrive without becoming burdened with additional tasks in which they are not qualified or interested.

In addition to the diversity in skills of board members, there was an overwhelming sense of dedication identified by interviewees. The stakeholders are hard-working and were willing to dedicate a significant amount of time and effort to achieve the goals set forth. One respondent stated, "The level of time that a few individuals have put in is absolutely incredible." Members of the coalition genuinely care about the community and are all working toward a common goal. Another respondent stated this in regard to the other members of the coalition "They are from here, they've gone off to school and came back to this community and they want to see Meade County grow and become a better place to raise your kids."

While there was an overwhelming amount of support and dedication among the coalition, the respondents also identified some challenges. Many interviewees identified the issue of relying on volunteers. Others mentioned the difficulty in criticizing the quality of work of people who are volunteering their time, or even talking about what could be improved. Some interpreted this as a need to shift more work to paid employees to avoid burn out from volunteers.

Operations and Processes. In regard to operations and processes, various interviewees mentioned having to develop infrastructure for MAC (e.g., personnel policy, financial policies, how to engage with contractors) from scratch. Not only did the coalition have to develop policies, they were also tasked with developing marketing and communication infrastructure to increase awareness of MAC and its programs within the community. One respondent stated, "We felt like it was very important for us to make sure that we had the ability to set up the right type of processes in place to be able to effectively communicate." In order to achieve this goal, the coalition contracted with a communications consultant, so the executive board was not overwhelmed by this task.

Structures. There was less discussion about the formal structures of the coalition. This could be attributed to the trust among coalition members as well as the dedication to the task. Formalized mission and vision statements for the innovation were created, however, the interviewees did not focus on formal procedures within their group. One interview stated, "We don't operate like a typical board...it puts a lot of pressure on the chairman... everyone sees this as his thing. The board feels like they answer to the chairman, but a real board answers to the board." Otherwise, there was little information regarding structures identified throughout the interviews.

Areas of Growth

What originally started as an emphasis on data collection for children enrolled in the CATCH Kids Club afterschool program at all Meade County district elementary schools has grown to collect health behavior and fitness outcomes for all children in Meade County. Specifically, the elementary schools are now fitness testing all K-6 grade children as part of their regularly scheduled physical education curriculum. The partnership MAC has developed with Meade County Public Schools is an excellent example of how communities begin to shift cultures in a variety of ways. The physical education teachers have found new enthusiasm for their physical education curriculum by implementing Fitnessgram. The MAC Executive Director bragged that his recent conversations with the physical education teachers gave him encouragement about the future of the MAC's partnership with the public schools. He said that the PE teachers are integrating all of the aspects of the Fitnessgram program into their curriculum, testing all of their children's physical fitness: muscular strength, muscular endurance, flexibility as well as their cardiovascular fitness and body mass index. They are using the Fitnessgram software program to track their students' progress from year to year and show the children their changes over time. Further, one of the teachers is sending home "report cards" of his students' fitness scores to children's parents. The PE teachers have expressed their thanks to the MAC for housing the Fitnessgram curriculum in their schools.

Programming has expanded to include adults as well. During the summer (2013) in addition to standard programming options, the MAC held two family events that allowed the community to participate at no cost. A water safety course was provided as part of the local Fatherhood Initiative and a MAC Community Night Open House in which approximately 300 people attended. MAC staff was available to discuss program options and financial assistance opportunities. Both events served as a great venue to build awareness and inform attendees about what the MAC provides and how it continues to make facilities, programming, and events available to the entire community.

Senior community members are being integrated into MAC programming as well. During the summer of 2013 the MAC began offering yoga, NIA (dance), and strength training for senior citizens. In the winter of 2012 and 2013, the MAC hosted the Holiday Fitness Series to senior population. In marketing these events, local senior groups from various organizations were encouraged to take part in these events which provided adequate physical activity and a positive support group for those looking to become or continue being physically active.

Members of the MAC's Board of Directors have heavily directed their energies toward long-term sustainability of MAC programming as well as directing their focus on building a permanent facility. They realize that current "borrowed" spaces have reached their maximum capacity and in order to continue to serve the community the capital campaign must produce needed funds. To date, approximately \$500,000 towards new facility construction has been raised. The board of directors hopes to begin construction on the first phase of a facility in the winter of 2014. Conversation has been initiated with city council and county magistrates to discuss the MAC impact and how the city and county could support the endeavor. As stated

previously, the MAC is utilizing funds outside of Grant/Match Dollars to pay for consultation services.

Areas for Improvement

For rural areas like Meade County where residents might have limited experience with research, informed consent protocols, and surveys, such as the mailed Children's Health Surveys may have posed an undue stress or burden to the family. Each packet contained a list of directions from the Meade Activity Center's Executive Director, two parental/guardian informed consent forms written in university-language (one form to sign and return, one to keep), two child assent forms (one to sign and return, one to keep), the 6-page, 55-item Children's Health Survey, and a stamped, addressed return envelope. To the parent/guardian and/or child, the materials in the packet may have seemed like a time-consuming task of filling out all of the paperwork and mailing it back, causing a low return rate. Previous research has also indicated that readability, familiarity, and trust are attributes that are important for study participants in order to participate in research. Year one CHS data was collected by face-to-face interactions by the CATCH Kids Program coaches. Despite having similar survey packets response rate was much higher when the action was initiated from a trusted source.

The results indicating that low income children participated in fewer physical activities than their more affluent peers is concerning. Seven of the 42 children who participated in the survey study indicated they received free or reduced-price lunch, which, in our study is a proxy indicator for low socioeconomic status. Of those seven children, only four indicated they were physically active because they participated in MAC programs. The incredibly low response rate for children who participated in the Children's Health Survey (42 completed out of 766 that were mailed, 5.5%) makes it difficult to draw solid conclusions from this data. The researcher and a community volunteer will attempt to achieve a higher response rate by attending the first few sessions of each program to pass out forms and surveys while parents/guardians are registering their child(ren). By being physically present during data collection (as opposed to mailing the surveys), the researcher and/or community volunteer can explain the purpose of the study, the parental/guardian informed consent form, and the child assent form. Further, the Principal Investigator can ensure all forms are filled out correctly by the parent/guardian and/or child and answer any questions or concerns about the study. We anticipate this change in data collection will increase the response rate and parent/guardian and child's comfort with study participation.

Additionally in future years, resources for more elaborate data collection methods and technologies (e.g. pedometers to objectively measure physical activity) and time spent collecting data may be considered. As the MAC continues to scale the project up to broaden the many programs and services needed to be sustainable, the staffing and administration of the project is critical. For example, in order to prevent participation loss, strategies to encourage continued participation in programming are in place. Currently, the MAC Project Executive Director frequently makes "site visits" to meet with program participants – asking for programming, location, pricing, etc. feedback and suggestions. The executive director tracked all participation frequencies and participant feedback while striving to accommodate participants' request for improvements. MAC has demonstrated needs for expanded use of program staff. As the

operations in programming expand, so too does the need for an additional full-time staff person, or multiple part-time staff to handle administrative needs of particular programs.

DISCUSSION

Since the MAC Project began as a grassroots organization in 2008 and is steadily building its programming and infrastructure toward eventual sustainability. The MAC Project is showing moderate levels of evidence that their programming and infrastructure improve children's health behaviors and coalition effectiveness are improving. Unique findings in this process evaluation study highlight the importance of coalition members' and key stakeholders' vested levels of commitment toward the success of the MAC Project. The drive of those in the leadership positions to accomplish MAC goals may have influenced the results of this study however. For instance, survey respondents felt that the board of directors and lead agency were effective, yet programming and membership were less so. Community organization theories posit that although it takes time to establish staff, structures, and processes, the locality development nature of community organization enhances community buy-in and trust and therefore has greater potential for long-term, sustainable success.

Considering that the Meade Activity Center began with a group of community members who recognized that their fellow low-income families did not have proximate places for their children to engage in physical activities and that they adopted the lofty goal of creating a health equitable community - offering physical activity opportunities for children and adolescents within the county in borrowed spaces until an actual facility could be built. In future studies, more emphasis will be placed on working with community members in collecting complete data sets. The current response rates are inadequate to be able to confidently state whether the MAC programming is reaching the children who would not have otherwise had access to physical activity programming.

Coalition members mentioned the difficulty of changing people's behaviors and the need for people to get involved to see how accessible the programs are and that everybody was supportive of programs for their kids. They also indicated that the MAC programs were compatible with the school offerings—providing a nice complement to what the school already offers. However, many coalition members noted that it's difficult to change people's behaviors and that people who weren't used to spending time and resources on being physically active would be more difficult to engage. That is part of the reason the MAC initially focused on programming for children. As one coalition member stated, "the way to get the adults there is to get the kids there...people are hungry to have things for their kids to do, and while we have them we can try to teach them better nutrition and to be physically active." For children, the options before MAC began offering programming were (1) to travel outside of the county to access programs/services, which was not available to many in the community because of the time and resources required to take advantage of these programs; and (2) school organized sports, which were available in middle and high school for kids who wanted to compete. Other than those options, the coalition didn't feel that there were other formal opportunities for children to be physically active.

Coalition members talked frequently about the importance of getting people involved, and increasing word of mouth once people were involved. To promote use, they discussed the need for a diverse set of programs targeting everyone in the community—and the value of programming that would encourage the entire family to participate. The current MAC facilities

were previously owned by a country club, and many coalition members discussed the need to overcome the community perception that “it’s a country club” and therefore out of their reach. They have offered a sliding scale for programming to increase accessibility to everyone throughout the community. As one coalition member stated, “I think people think this MAC is for certain people, for certain groups, and you can’t convince people differently until they start participating.” They also acknowledged that it’s difficult to begin exercising if you’re out of shape, so recognized the need to make programming and facilities as unthreatening as possible. For example, “People do not know how to get in shape...I haven’t spent much time in a weight room since I was in high school...I wouldn’t know what to do...I know that there are all kinds of people that way in the community, that are entirely intimidated by that process.”

For such an innovative program as the MAC Project, simply offering the programming while measuring the fidelity to which programming is implemented serves as an important step to future MAC project success. At this point, the only full-time MAC Project Staff person consists of an executive director, hired in September 2011. Other MAC Project Staff persons include one part-time administrative assistant and one part-time program coordinator, several hourly-paid coaches and fitness instructors, and numerous volunteers. The limited human resource capacity presents barriers to conducting more rigorous evaluations. In future years, when the MAC Project staff becomes more established and infrastructure (e.g. operations and processes) becomes more efficient, the MAC Project may design an impact evaluation more likely to generate evidence of effectiveness at the “strong” level. The lessons learned from offering programming and community events and establishing infrastructure processes and structures in the first two years can provide future iterations with implementation guidelines that will maximize programming and infrastructure efficacy. The successes or challenges Meade County faces may aid potential replication of community-based physical activity interventions in other rural, low-socioeconomic status counties.

Future Goal: An Actual Meade Activity Center



With broad community support, the Meade Activity Center's goal is to open a fully operational activity center, to be available on a sliding scale to all community members. Children’s physical activity programming has

been met with great enthusiasm since the MAC’s inception. Participation rates have steadily been increasing, from 388 children in the initial year to over 800 children in 2013. All programs

are being offered in temporary community spaces, including local schools, churches, and businesses. Programs fees are calculated on a sliding scale to ensure that all children can participate. The proposed activity center will offer swimming, tennis, golf, hiking trails, and nutrition and health classes. It will provide structured after-school activities to low-income children, offer a broad range of nutrition and physical activity opportunities to low-income families, and provide affordable physical activity opportunities to seniors. When asked “What do you think members of your community think about physical activity” one community member indicated that "The only thing that was available in this community was little league baseball and then youth basketball once the kids hit like fifth grade. So we’ve kind of filled a void as to all the things they’ve traveled to Corydon, Indiana, Elizabethtown, Louisville previously for." This statement addresses the need for Meade County to address the access inequity that is presented to children and families who cannot afford to travel to be physically activity. Expanded sampling in Year 3 should allow researchers to more fully understand the extent to which the MAC has been successful in serving children who would not have otherwise had access to physical activity opportunities.

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