

# Knowledge, Attitudes, Beliefs, and Behaviors (KABB) of Diabetes

## Among Afro-Caribbeans Near Brooklyn, New York

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### INTRODUCTION

- Literature has found that some minority groups with diabetes have a negative perception of medical professionals when a health problem occurs. This trend is particularly problematic with the diabetes epidemic in the U.S.
- African Americans are more than 2 times as likely to die from diabetes than are Whites, and diabetes prevalence has increased exponentially in New York City (NYC) where a majority of Afro-Caribbeans live.
- A large majority of NYC residents, over 500,000, knowingly live with diabetes and approximately 200,000 live with the disease and unaware.
- Complications associated with diabetes, especially those leading to adverse cardiovascular events, are the primary causes of death in NYC.
- Health care costs caused by diabetes and its complications total \$481 million annually.

### PURPOSE

- The objective of this quantitative study was to investigate the knowledge, attitudes, beliefs, and behaviors (KABB) associated with type 2 diabetes among Afro-Caribbeans with type 2 diabetes living near Brooklyn, New York.
- The study focused on KABBs specific to the development of complications of type 2 diabetes and investigated whether negative perceptions of medical professionals existed and whether Afro-Caribbeans would attend a type 2 diabetes class or workshop if their churches offered it.
- Research Question 1: What knowledge, attitudes, beliefs, and behaviors (KABB) determine whether survey participants feel they should be screened for type 2 diabetes?
- Research Question 2: Is there a statistically significant relationship between KABBs and the development of complications from type 2 diabetes in the population surveyed?
- Research Question 3: Would survey participants attend a workshop like the Project POWER program if their churches were to offer it?

### METHODS

- This study used the social ecological model (SEM) and cultural consensus model (CCM) as frameworks to address the research questions posed.
- The SEM provides information on the social influences on health behaviors and the multiple levels of influence, which involve individual, community, and social context factors.
- The CCM is a set of analytical techniques and models used for shared information pooling among informants. The model was used in this study to provide a quantitative analysis and provide objective ways to find answers to questions about culture among Afro-Caribbeans.
- From January 2014 through April 2014, 67 informed consent forms, including an explanation of the study with participant criteria, and KABB questionnaires were distributed via face-to-face meetings at churches in NYC and Long Island.
- A 114-item questionnaire, adapted from reliable and validated national health surveys, was administered to participants aged 35 to 90 to collect demographic, health, and cultural belief information.
- This study used trusted church leaders (pastors) to gain access to participants and data were collected during Sunday morning services or mailed to my home address.
- A total of 39 participants returned completed questionnaires, resulting in a response rate of 58%. The sample size of 39 was reduced to 28 to include participants that met study criteria. A cultural consensus analysis of the 28 eligible participants was used to infer trustworthy answers to cultural questions.
- Data were analyzed using ANTHROPAC 4.98 and SPSS 21. Statistical tests included cultural consensus analysis, Pearson's Correlations Coefficient, descriptive statistics and binomial test procedures.

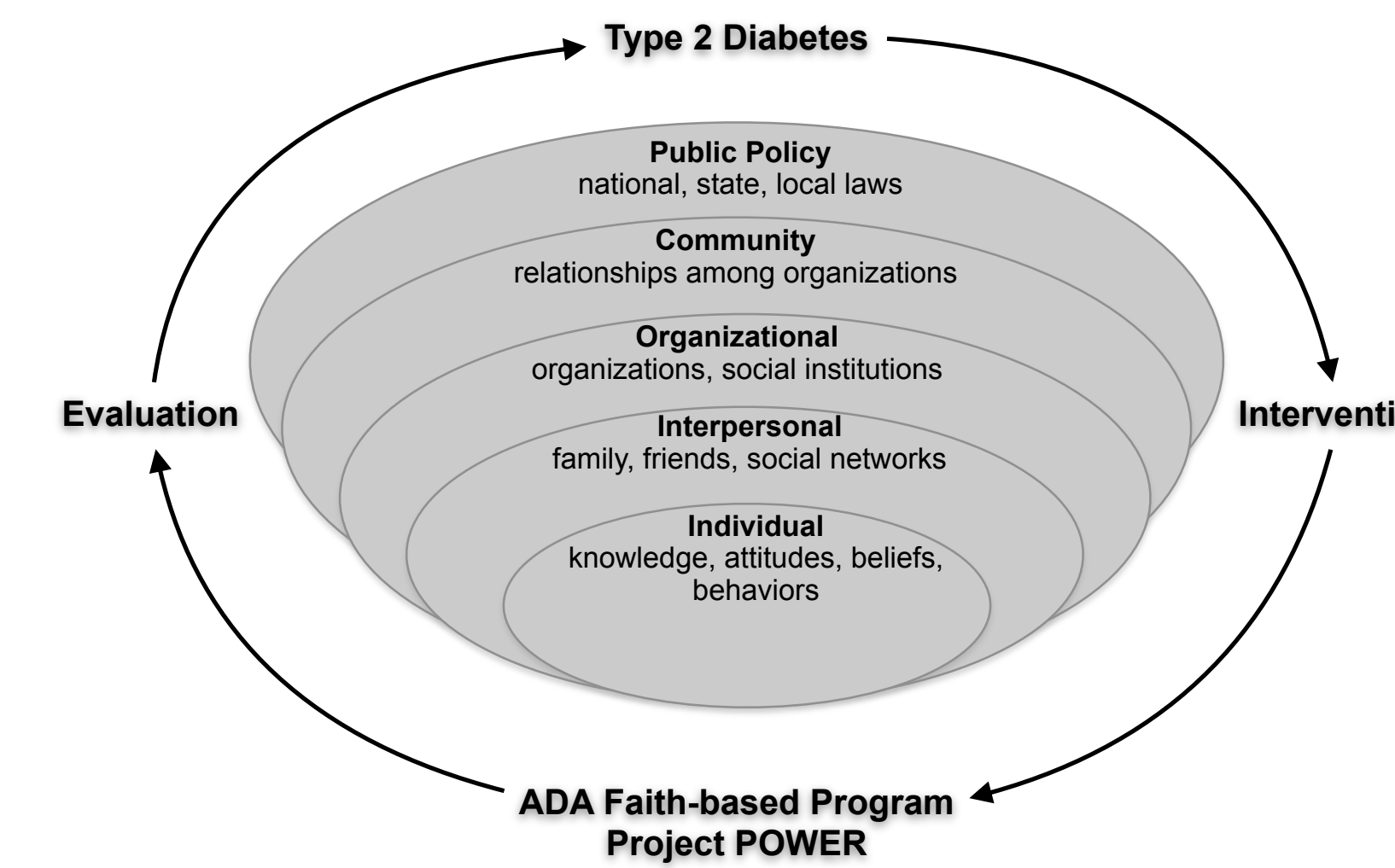


Figure 1. Social ecological model with type 2 diabetes intervention design. From Health behavior and health education: Theory, research and practice. San Francisco, CA: Jossey-Bass, by Sallis, J. F., Owen, N., & Fisher, E. B. (2008). In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.). Copyright 2008 by John Wiley & Sons, Inc.

### RESULTS

- The cultural consensus analysis results, presented in Table 1, demonstrate a shared, single, cultural belief model about the prevention, causes, symptoms, complications, and treatment of type 2 diabetes among the target population. Participants demonstrated an above-average knowledge of type 2 diabetes, with a level of agreement of .52 ( $\pm .192 SD$ ).
- Table 2 presents the binomial test results for Research Question 3 that was run to analyze whether the observed for those who answered "yes" for attending a class or workshop at their churches was significantly different from the hypothesized proportion of .50. The 95% confidence interval was .66 for the lower confidence limit and .96 for the upper confidence limit; further, 85.2% reported that they would attend a diabetes class or workshop at their church if offered.

Factor	Eigenvalue	Ratio between 1 <sup>st</sup> and 2 <sup>nd</sup> Eigenvalue	Variance Explained % by factors	Mean Cultural Knowledge
1	8.524	5.304	75.5	.52 ( $\pm .192 SD$ )
2	1.607		14.2	
3	1.165		10.3	

Table 1. Results of Cultural Consensus Analysis

	Category	N	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)
Attend class or workshop	Group 1 would attend class or workshop	23	.85	.50	.000*
	Group 2 would not attend class or workshop	4	.15		
Total		27	1.00		

\*Correlation is significant at the 0.05 level (2-tailed).

Table 2. Binomial Test Results for Research Question 3

### LIMITATIONS

- The cross-sectional design is limited in scope compared to a longitudinal study that follows a cohort for an extended period of time.
- Pastors with whom I had a relationship with through family members or friends were more willing to allow access to their congregations.
- Pastors scheduled certain times for me to visit, which may have created selection bias.
- Recall bias was a limitation of this study.
- Due to the narrow characteristics and sample size of this study, it is not possible to generalize the results to all people of Afro-Caribbean/African Caribbean descent living in NYC.
- Missing responses to questions were also a limitation to this study.

### CONCLUSIONS

- Participants demonstrated an above average knowledge of type 2 diabetes as a result of the cultural consensus analysis with a level of agreement of .52 ( $\pm .192 SD$ ).
- The lack of knowledge and negative childhood experiences were not the main reasons for not being screened for type 2 diabetes.
- Statistically significant relationships existed between four of the five KABB areas and participants that developed complications from type 2 diabetes.
- Participants' responses to attend a diabetes class or workshop at their church if offered was statistically significant with 85.2% who answered "yes."
- Findings promote social change by educating Afro-Caribbeans about diabetes, and by facilitating partnerships between churches and doctors.
- Future community-based research with churches could help to improve glycemic control and delay the onset of type 2 diabetes.

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