



CSAAH Publication Community Brief

A Culturally Tailored Community Health Worker Intervention Leads to Improvement in Patient-Centered Outcomes for Immigrant Patients With Type 2 Diabetes

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WHAT IS THE PURPOSE OF THIS STUDY?

- To carry out a culturally tailored type 2 diabetes management program for Bangladeshi immigrants in New York City: the Diabetes Research, Education, and Action for Minorities (DREAM) project.

WHAT IS THE PROBLEM?

- Studies have found that South Asians in the U.S. generally have high rates of diabetes.^{1,2}
- Bangladeshis are one of the fastest growing immigrant groups in the U.S. However, population-based estimates of type 2 diabetes prevalence in U.S. Bangladeshi populations do not exist.
- Community-based studies in Bangladeshi immigrants in NYC suggest there is a high prevalence of type 2 diabetes in this community:
 - In NYC, immigrant Bangladeshi communities have high rates of limited English proficiency compared to other Asian subgroups, are among the poorest of Asian subgroups, and report lower rates of high school completion and annual household income compared to citywide numbers.³
- There is the need to account for cultural, linguistic, and social contexts of type 2 diabetes in this population experiencing health disparities.

WHAT IS THE INTERVENTION?

- Participants were recruited into the two-group randomized, controlled trial. Eligibility was determined based on self-identifying as Bangladeshi, being between 21-75 years of age, living in the NYC metropolitan area, and having a clinical diagnosis of type 2 diabetes, as measured through A1C level.
 - A1C is a blood test that looks at a person's average blood glucose levels over the past 3 months.
- The 6-month program consisted of in-language health education sessions, review of medical records, and routine and follow-up clinical tests measuring participants' height, weight, and blood pressure readings. Trained bilingual community health workers (CHWs) from the Bangladeshi community led the program.

¹Rajpathak SN, Gupta LS, Waddell EN, et al. Elevated risk of type 2 diabetes and metabolic syndrome among Asians and south Asians: results from the 2004 New York City HANES. *Ethn Dis* 2010;20:225–230.

²Kanaya AM, Wassell CL, Mathur D, et al. Prevalence and correlates of diabetes in South Asian Indians in the United States: findings from the Metabolic Syndrome and Atherosclerosis in South Asians Living in America study and the Multi-Ethnic Study of Atherosclerosis. *Metab Syndr Relat Disord* 2010;8:157–164.

³Asian American Federation Profile of New York City's Bangladeshi Americans: 2013 Edition (<https://bit.ly/1Qo8kFn>)



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- Culturally and linguistically-adapted group education session content included: An overview of type 2 diabetes, education on nutrition and the importance of healthy eating, strategies for increasing physical activity, complications related to type 2 diabetes and preventive self-care, and stress management and family support.
 - The group that did not receive the full program only received the overview of type 2 diabetes training session.
- The main result measured was glycemic (blood sugar) control, measured through A1C. A1C and additional outcomes, low-density lipoprotein cholesterol (LDL), high-density lipoprotein cholesterol (HDL), total cholesterol, and triglycerides, were taken from a participant's medical records. Height, weight, and blood pressure readings were collected by community health workers.

WHAT ARE THE FINDINGS?

The following measurements were collected at 6 months' follow-up:

- **A1C Levels**
 - Bangladeshi individuals who fully completed [were not lost to follow-up] the DREAM program were significantly more likely to have *lower A1C levels* and more likely to *achieve stable A1C levels* than individuals who did not receive the full DREAM program.
 - Females who fully participated in the DREAM program were more likely to show significant *decreases in A1C levels* than females who did not. Males who fully participated in the DREAM program were more likely to show significant *stability in A1C levels* than males who did not.
- **Cholesterol levels, weight and BMI, and blood pressure**
 - Cholesterol levels, weight and BMI, and blood pressure readings decreased in individuals who fully participated the DREAM program. Weight and BMI decreased in participants who fully participated in the program as well as in those who did not fully participate.
 - Differences in the average LDL, HDL, or triglyceride levels of participants who received the program and those who did not were not significant.
- **Knowledge**
 - Bangladeshi individuals who participated in the DREAM program saw significant shifts in knowledge and management of type 2 diabetes. This included time spent on weekly physical activity, confidence regarding physical activity, and type 2 diabetes self-management (i.e. testing blood glucose). Participants in this group saw nearly all of these areas as significant across time.
 - Those who did not receive the DREAM program components saw a significant decrease in their amount of vigorous weekly physical activity.

Acknowledgements

The NYU Center for the Study of Asian American Health (CSAAH) was established in 2003 and is supported by the National Institute on Minority Health and Health Disparities of the National Institutes of Health under Award Number U54MD000538. The findings and conclusions in this report are those of the authors and do not necessarily represent the official views of the National Institutes of Health.



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WHO SHOULD CARE MOST?

- Researchers and policymakers interested in developing culturally and linguistically specific programs for type 2 diabetes prevention and management in communities experiencing health disparities, especially Bangladeshi immigrant communities in the U.S.
- Healthcare facilities, community organizations, researchers, health care providers, and policy workers working with Asian American communities in the U.S. and across the New York City metropolitan area.
- Health advocates working in Asian American communities.

HOW DOES THIS PUBLICATION ADVANCE SCIENTIFIC RESEARCH?

- This study adds to the lack of research publications that focus on type 2 diabetes in Bangladeshi immigrant communities in the U.S.
- This study highlights the value of a culturally tailored, community health worker-led diabetes management program as an effective health education strategy to address type 2 diabetes in Bangladeshi immigrant communities in NYC.
- These findings may inform future studies and targeted diabetes interventions among Bangladeshi immigrant communities in the U.S.

CITATION

- Islam, N.S., Wyatt, L.C., Taher, M.D., Riley, L., Tandon, S.D., Tanner, M., Mukherji, B.R. and Trinh-Shevrin, C. 2018. A Culturally Tailored Community Health Worker Intervention Leads to Improvement in Patient-Centered Outcomes for Immigrant Patients With Type 2 Diabetes. *Clinical Diabetes*, 36(2), pp. 100-111. PMC5898170.

LINKS

- PubMed Link: <https://bit.ly/2Gwqndm>
- CSAAH Community Briefs: <https://bit.ly/2UppmYo>

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