Gender Differences in Self-Efficacy and Behavior Outcomes among Diabetic Bangladeshis in New York City

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Background/Significance

Studies have demonstrated that South Asians have the highest prevalence of diabetes compared to other Asian subgroups (Rajpathak et al., 2010 & Karter et al., 2013). Self-efficacy is an important factor in diabetes management but in the United States, to our knowledge, there are no previous studies that examine the role of self-efficacy in South-Asian, particularly Bangladeshi, diabetics (Sarkar et. al, 2006). Research conducted in the United Kingdom has illustrated a number of barriers impacting the Bangladeshi population, and in particular, Bangladeshi women, with regards to receiving diabetes care (Rhodes et al., 2003 & Alam et al., 2011). Barriers to care include educational level and limited English language proficiency, as well as a higher burden of familial duties and limited familiarity with using public transport services.

The current study examines gender differences in self-efficacy and diabetes outcomes among two cohorts of Bangladeshi individuals participating in a culturally- and linguistically-appropriate, randomized community health worker (CHW) intervention.

Methods

- Eligible diabetic Bangladeshis randomized into treatment (n= 60; females= 24, males= 36) and control (n= 46; females= 20, males= 26) groups
- Treatment group received monthly, educational seminars on diabetes management and two one-on-one visits from a CHW
- Control group received an introductory seminar
- Surveys collected at baseline, midpoint, and endpoint (6-months)

Analysis

- Self-efficacy measured on a scale-- 5 being the highest score
- Paired sample t-tests performed to reveal changes in self-efficacy overall, by gender, and by study group from baseline to study endpoint
- Changes in clinical outcomes, including HbA1c and weight, by gender, study group and self-efficacy change group analyzed using paired sample t-tests
- Field notes collected by CHWs examined to understand and explain observed trends

Results (Quantitative)

Results show a significant increase in overall self-efficacy among the intervention group. When stratified by gender, results showed significant improvement in self-efficacy among both genders in the treatment group ($p<0.01$). Furthermore, results showed a higher percentage of females with increased self- efficacy at the endpoint compared to males ($p< 0.05$).

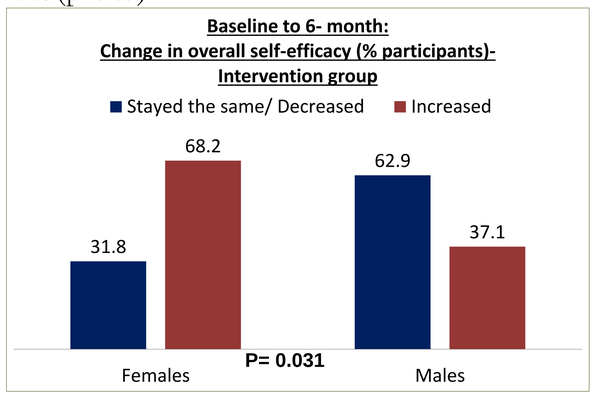

Fig 1: Percentage of participants with change in self-efficacy- Intervention group only

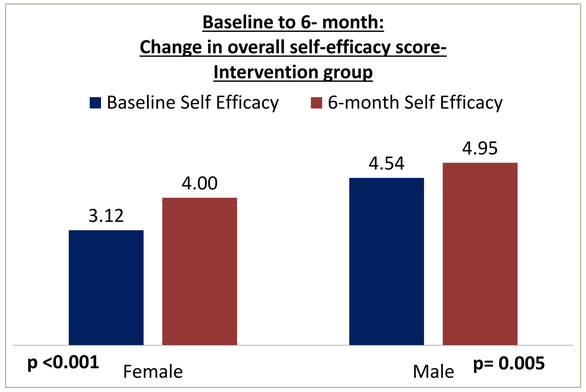

Fig 2: Change in self-efficacy score (Highest score= 5) Intervention group only

Females show a 0.88 point increase in self-efficacy score ($p< 0.001$) compared to males with a 0.41 point increase ($p= 0.005$) from baseline to 6-months. No significant changes in self-efficacy were demonstrated among males or females in the control group. In case of clinical outcomes, no significant differences in HbA1c were seen at 6-Months. But participants in the intervention group in both two self-efficacy change categories demonstrated a modest decrease in weight compared to baseline (not significant).

Intervention				
	Overall self- efficacy change= Decreased/ Stayed the same		Overall self- efficacy change= Increased	
	Baseline weight	6-month weight	Baseline weight	6-month weight
Females	143.00± 20.7	140.86± 22.8	141.93± 23.0	137.29± 23.3
Males	147.50± 16.9	146.00± 16.4	160.46± 25.8	160.58± 26.8

Table 1: Weight (Mean ± SD) from baseline to 6-month, two self-efficacy change groups- Intervention group only

Results (Qualitative)

Qualitative case notes maintained by CHWs revealed specific behaviors and skill sets that were strengthened by participation in the intervention. For example, women, many of whom had resided in NYC for more than 15 years, were taught by the CHWs to use public transportation alone for the first time to travel to doctor's visits.

> "Language problem is always an issue and needs help with getting appt, and to go to doctor too"
>
> "Always needs help to go to the doctor. Can't travel alone"

> "…she never could go out without assistance but now with dream (project's) assistance she is capable to go to the hospital and also visit her brother's home, who never encouraged her to go out her own. They said she will be lost. Right now, she has confidence that even if she is lost, she can find the place as long as she has the written address with her."

Fig 3: Excerpts from CHW case notes with minor edits for clarification

Discussion/Conclusion

Results provide insight into the role of self-efficacy in diabetes outcome management. Possible reasons for no significant change in HbA1c could be the short duration of the study and small sample size. Change in weight might not be related to self- efficacy since we see a decrease (not significant) in weight in both the self-efficacy groups.

Outcomes support the importance of culturally-appropriate health interventions that not only provide education, but also focus on skill-set building through motivational interviewing techniques, especially among Bangladeshi women. Since a significant increase in self-efficacy is observed in both genders in the intervention group, we can hope to see positive changes in other aspects of diabetes management in this group.

Further research is needed to help understand and address cultural and social norms in this community to improve health-care access, especially among diabetic South-Asian women. Potential strategies for building autonomy and encouraging self-reliance among Bangladeshi diabetics also need to be developed.

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