

Comparing Underserved Population Outcomes Using Remote Monitoring And/Or Diabetes Education

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BACKGROUND

Leveraging technology improves healthcare access and equity for underserved and under-resourced populations with diabetes¹, considering the lack of Diabetes Self-Management Education and Support (DSMES) Programs in 62% of nonmetropolitan US counties². New coverage codes for Remote Patient Monitoring (RPM) and enhanced access to virtual DSMES programs offered in English and Spanish promote outcomes³ and program sustainability, critical to providing access for those with diabetes in rural communities.

My Diabetes Tutor, Inc. (MDT) is an ADCES (DEAP) - accredited DSMES program providing both in-person and virtual diabetes services. In November 2022, MDT introduced RPM for individuals wearing, or wanting to wear a continuous glucose monitor (CGM), and who opted into the program by signing a consent form. The initiative was prompted by the introduction of new RPM billing codes⁴.

OBJECTIVE

Explore clinical and behavioral outcomes of three virtual population groups with diabetes who speak English and/or Spanish for those who enrolled in:

- 1) Both RPM & DSMES, with behavior change integration, in collaboration with a Certified Diabetes Care and Education Specialist (CDCES), and clinical management, in collaboration with the endocrinologist or provider;
- 2) RPM only, assessing self-care behavior impact on health indicators; and
- 3) DSMES program completers (written materials offered in English and Spanish).

Comprehensive curriculum materials available in English and Spanish languages. Here's a sample:



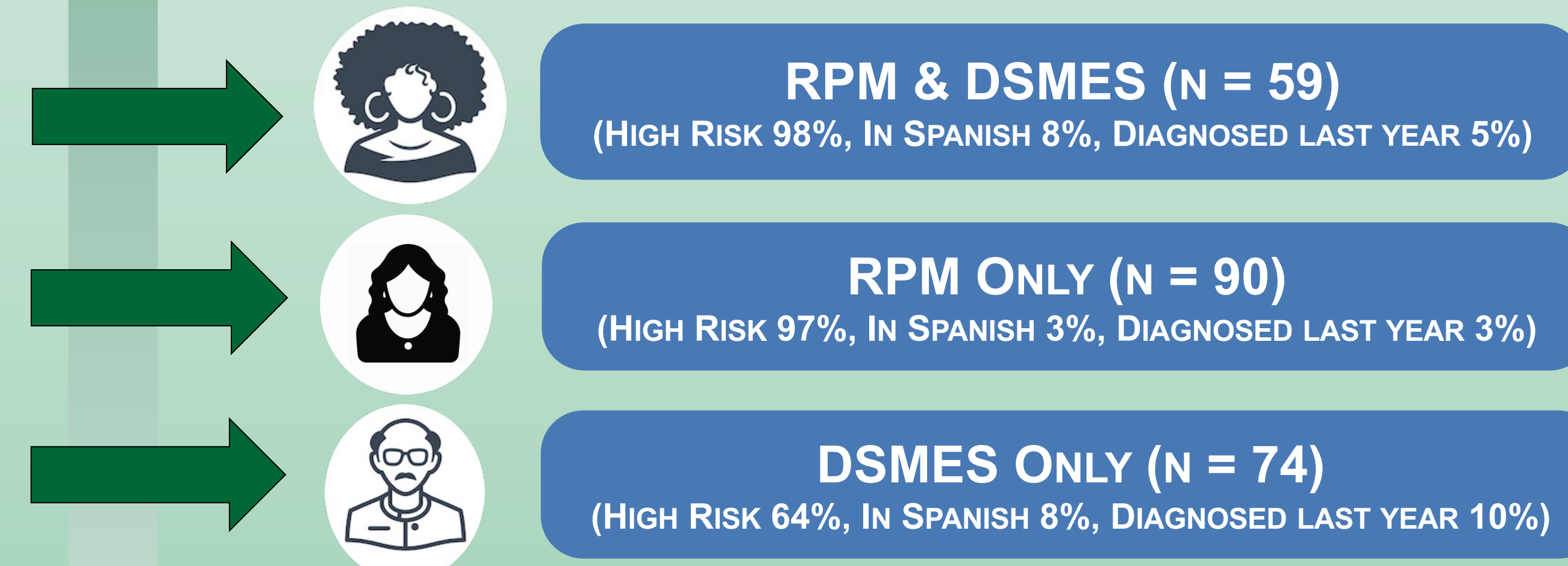
FINANCIAL DISCLOSURES

P. Sahasranam, F. Gavini, T. Garnero, J. Thompson, S.S. Baxter, H. Zelenka, K.S. Aulakh, M.S. Boparai: None.

METHODS

RPM program participants had monthly CDCES sessions to evaluate their CGM AGP report/blood glucose trends. Participants also consulted with an endocrinologist or healthcare provider within 14 days for any recommended treatment adjustments. Participants were encouraged to attend the DSMES program as needed, aligning with the four critical times for the provision and modification of DSMES⁵. Inclusion criteria: individuals must be enrolled in each of the three groups for a minimum duration of three to six months. MDT obtains consent to utilize de-identified health data.

Data from CharmHealth, our electronic health record and a specific type of CGM were analyzed, examining demographics, behavioral and clinical outcomes, and distance to an accredited DSMES program. Additionally, percentage of individuals in each category classified as "high risk" based on the Approach to Individualization of Glycemic Targets⁶ were calculated. High-risk individuals met at least one of the following criteria: age 65 or older, cognitive impairment, limited physical mobility, limited life expectancy, frequent hypoglycemia, diabetes diagnosed for over 10 years, advanced atherosclerosis, history of bypass surgery or stents, or multiple cardiovascular disease factors.

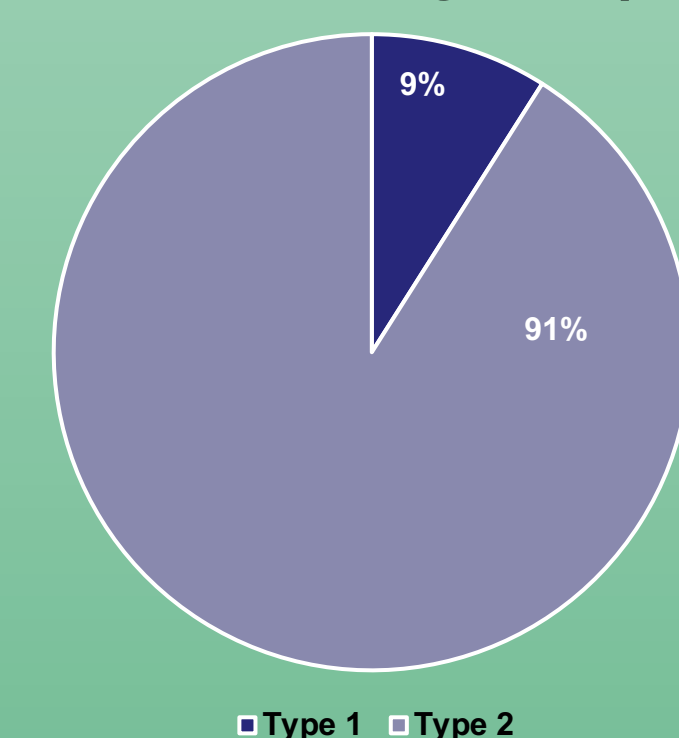


DEMOGRAPHICS

Shared Characteristics Across All Three Groups

Race/Ethnicity (%)
 Alaskan Native/Amer.Indian (1%)
 Asian (5%)
 Black or African American (6%)
 Hispanic or Latino (22%)
 White (34%)
 Other or Declined (32%)

Diabetes Type (%)



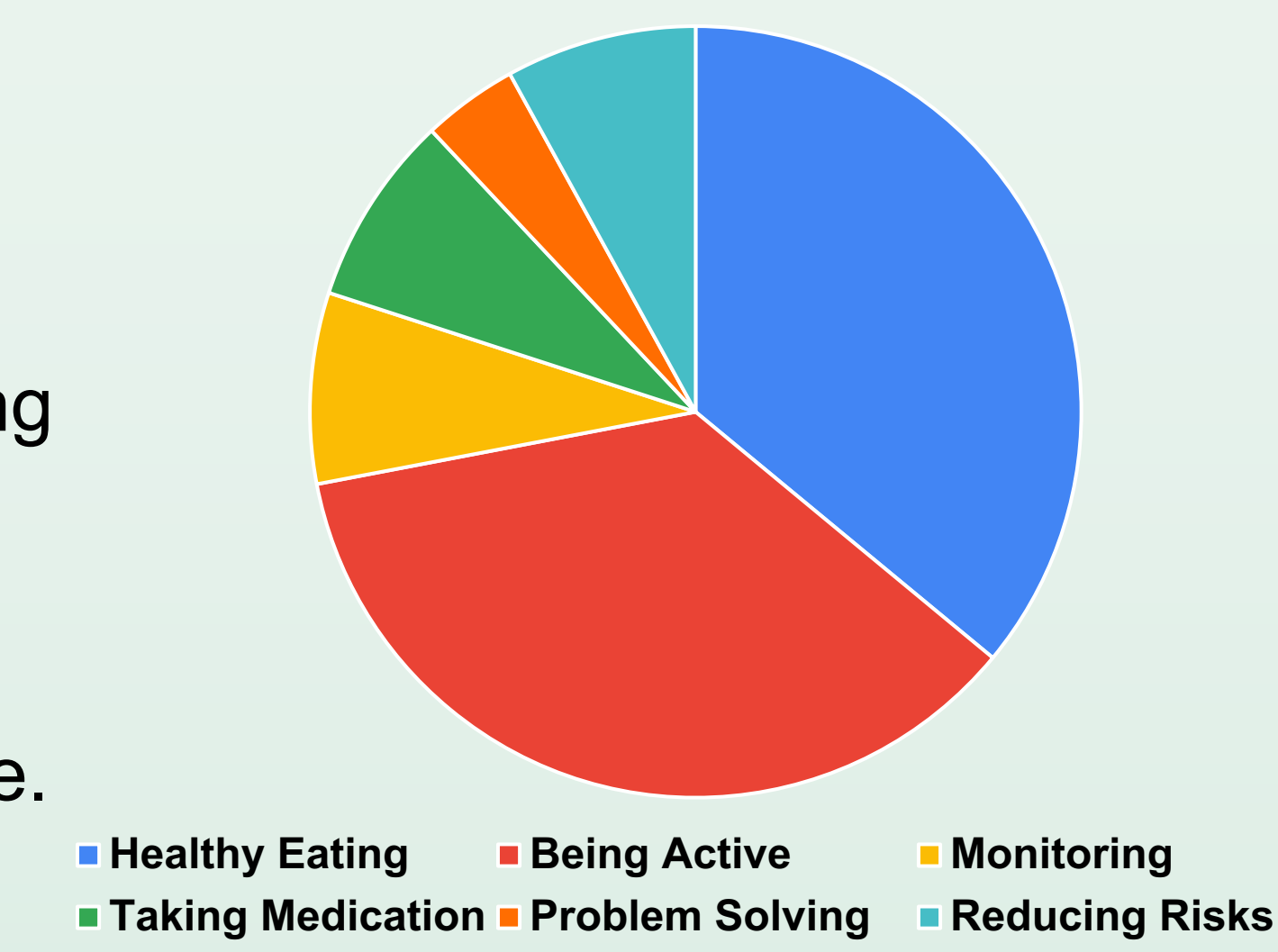
Ages (%)



RESULTS: BEHAVIOR CHANGE

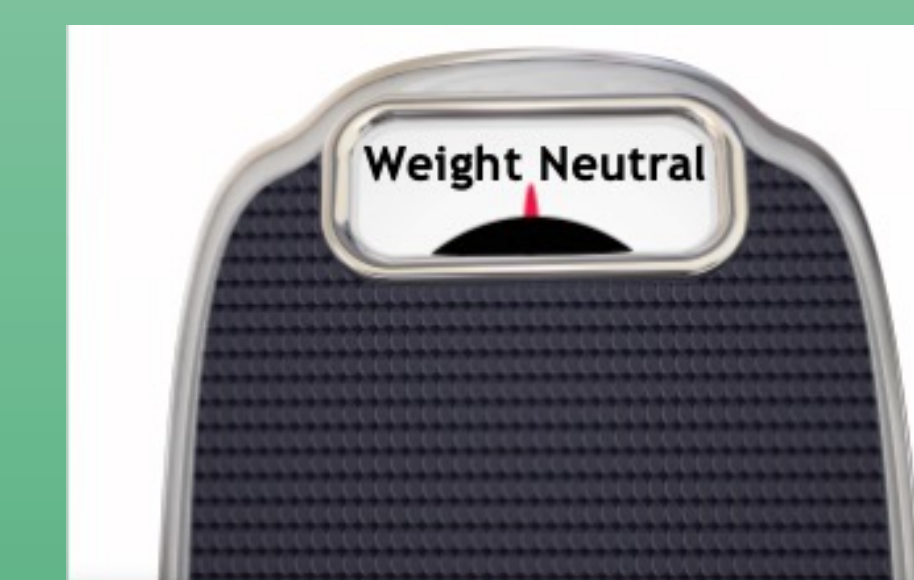
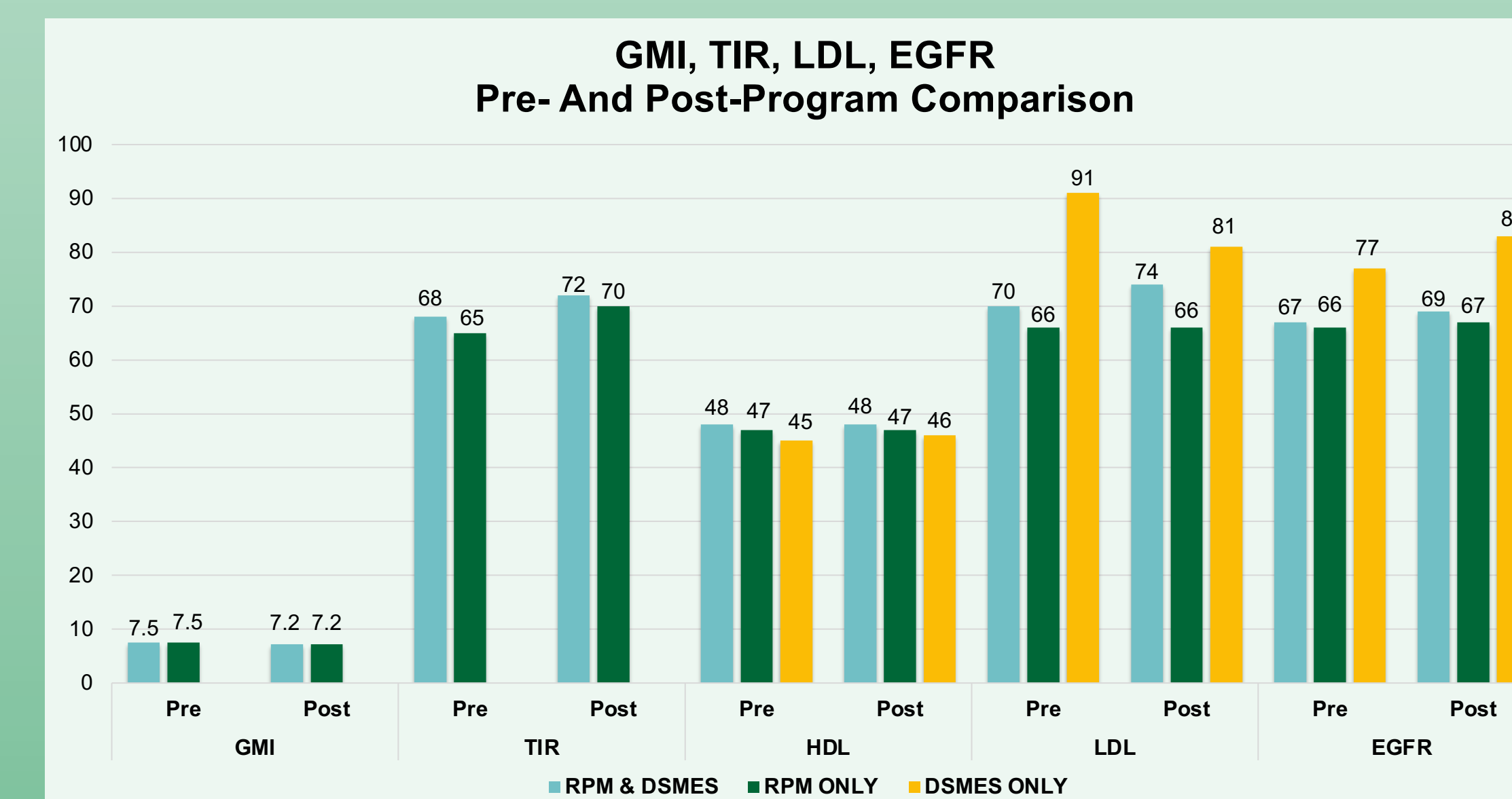
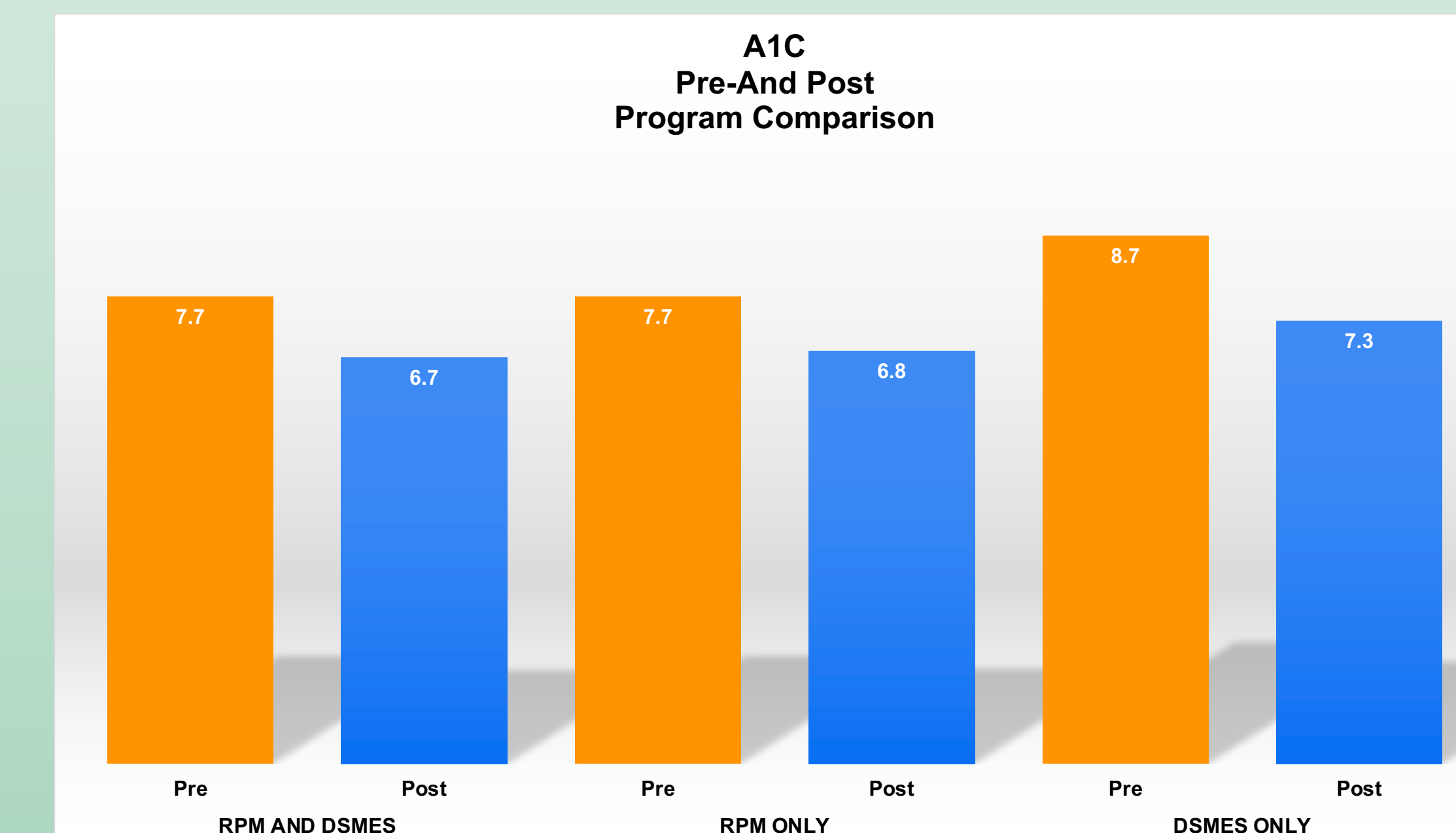
The majority chose Healthy Eating and Being Active goals (36% each), followed by Monitoring, Taking Medication, and Reducing Risks (8% each), and Problem Solving (4%). Goal improved 70-100% over baseline on average. *Healthy Coping not selected.*

Percentage of Self-Care Behaviors Selected



RESULTS: CLINICAL

Several clinical markers were captured as outlined below: A1C, Glucose Management Indicator (GMI), Time In Range (TIR), high-density lipoprotein (HDL), low-density lipoprotein (LDL), estimated glomerular filtration rate (eGFR), and weight.



All three groups had minor fluctuations in weight and by 6-month program end, remained fairly weight neutral, except for DSMES which had a 4-pound loss.

RESULTS: ACCESS

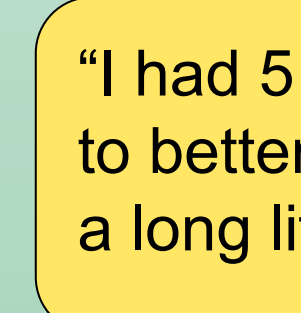
Prior to the launch of MDT in Kings County, CA, a mere 9% had access to in-person DSMES programs within a 25-mile radius, with a notable absence of online alternatives or comprehensive Spanish curriculums. With MDT, the possibility of accessing an in-person DSMES program increased to 50%. The remaining 50% residing beyond the radius can now utilize MDT virtually with phone or internet connections, enhancing health access and equity for underserved and under-resourced populations with diabetes.

RESULTS: PARTICIPANT FEEDBACK

"Before I had the CGM, I felt like I was blindfolded, trying to do my best but going nowhere. I have the MDT team to thank for this because they gave me the resources I needed to be successful." (RPM/DSMES)



"This program helps me a lot. My A1C was 10.5 at the start and now it's 8.5." I was also very tired before and now my energy level is better." (RPM, translated from Spanish)



"I had 5 educational sessions with my educator and learned how to better control my diabetes to prevent complications so I can live a long life and spend quality time with my grandkids!" (DSMES)



CONCLUSION

Delivering online DSMES and/or RPM services to underserved and under-resourced populations with diabetes showcased comparable advantages, encompassing both behavioral and clinical outcomes, and participant satisfaction. Considering the necessity for continuous support beyond a DSMES program, RPM services offer the requisite care for upholding an optimal state of cardiometabolic health while bolstering the prospects of long-term sustainability of the diabetes care and education program.

REFERENCES

1. Berry CA, Dávila Saad A, Blecker S, Billings J, Bouchonville MF, Arora S, Paul MM. Comparison of Care Provided to Underserved Patients With Diabetes by a Telementoring Model of Care to Care Provided by a Specialty Clinic: Endo ECHO Versus an Academic Specialty Clinic. *Sci Diabetes Self Manag Care*. 2023 Jun;49(3): 239-246. doi: 10.1177/26350106231169245. Epub 2023 Apr 27. PMID: 37129282.
2. Rutledge SA, Masalovich S, Blacher RJ, Saunders MM. Diabetes Self-Management Education Programs in Nonmetropolitan Counties - United States, 2016. *MMWR Surveill Summ*. 2017 Apr 28;66(10):1-6. doi: 10.15585/mmwr.ss6610a1. PMID: 28448482; PMCID: PMC5829897.
3. Longwitz, Ashley I, Palokas, Michelle L. Diabetes self-management education for adults with type 2 diabetes via telehealth in conjunction with remote patient monitoring: a best practice implementation project. *JBI Evidence Implementation* 21(2):p 156-166, June 2023. | DOI: 10.1097/XEB.0000000000000360
4. Billing codes & reimbursement for your professional diabetes technology services. ADCES, 2022. (n.d.). [https://www.diabeteseducator.org/danatech/gluco-monitoring/continuous-glucose-monitors-\(cgm\)/billing-codes-reimbursement/](https://www.diabeteseducator.org/danatech/gluco-monitoring/continuous-glucose-monitors-(cgm)/billing-codes-reimbursement/)
5. Margaret A. Powers, Joan K. Bardsley, Marjorie Cypress, Martha M. Funnell, Dixie Harms, Amy Hess-Fischl, Beulet Hooks, Diana Isaacs, Ellen D. Mandel, Melinda D. Maryniuk, Anna Norton, Joanne Rinker, Linda M. Siminerio, Sacha Uelmen; Diabetes Self-management Education and Support in Adults With Type 2 Diabetes: A Consensus Report of the American Diabetes Association, the Association of Diabetes Care & Education Specialists, the Academy of Nutrition and Dietetics, the American Academy of Family Physicians, the American Academy of PAs, the American Association of Nurse Practitioners, and the American Pharmacists Association. *Diabetes Care* 1 July 2020; 43 (7): 1636-1649. <https://doi.org/10.2337/dci20-0023>
6. Inzucchi SE, Bergenstal RM, Buse JB, et al. Management of hyperglycemia in type 2 diabetes, 2015: a patient-centered approach: update to a position statement of the American Diabetes Association and the European Association for the Study of Diabetes. *Diabetes Care* 2015;38:140-149.