THE TELEHEALTH DIABETES PREVENTION PROGRAM: AN INNOVATIVE PROGRAM FOR RURAL PATIENTS IN MONTANA

Authors: Elizabeth Ciemins, PhD, MPH, MA; Barbara Holloway, RN, BSN, CDE; Betty Mullette, RN, MSN, CDE; Willene Brese, RD, LN; Diane Kersten, MSW, Patricia Coon, MD

Purpose: To determine if telehealth technology can effectively deliver the Diabetes Prevention Program, a national program to prevent type 2 diabetes and cardiovascular disease among high-risk patients, to rural/frontier patients and to compare lifestyle change outcomes between rural telehealth and urban in-person participants.

Background: Sixty-eight percent of Americans and 62% of Montanans are overweight or obese putting them at risk for diabetes, cardiovascular disease (CVD) and associated morbidity and mortality. Adults with diabetes develop CVD at an earlier age and are 2-4 times more likely to suffer a stroke. Modest reductions in weight (5-10% body weight) can delay or prevent type 2 diabetes and favorably impact vascular risk factors (hypertension, dyslipidemia). Lifestyle interventions, i.e., changing dietary habits, reducing body weight, increasing physical activity, and ceasing to smoke, are effective in preventing CVD and diabetes.

Methods: Participants receiving the Diabetes Prevention Program face-to-face in an urban setting were compared with those receiving the program via telehealth technology in rural communities. Participants from one urban (n=49) and eight rural communities (n=32) participated in the program. Eligibility requirements included a diagnosis of pre-diabetes, hypertension, dyslipidemia, or a diabetes family history. Pre- and post-program comparisons were made on average baseline body weight loss, dietary and physical activity goals met, diabetes risk factors (HbA1C, Lipids, fasting blood glucose, blood pressure), and quality of life. A difference of the differences analysis was conducted.

Results: Telehealth and urban participants demonstrated comparable improvement in outcomes. Thirty-two telehealth participants lost an average of 6.8% of baseline body weight compared with 6.7% (n=49) for urban participants (p=.90). Daily fat gram goals were met on average 84.3% of the time for telehealth participants compared with 76.2% for urban (p=0.34); weekly physical activity goals (>150 minutes) were met on average 66.9% and 66.8% of the time for telehealth and urban participants, respectively (p=0.96). Participant attrition was similar between groups (p=0.14). Fasting blood glucose, triglycerides, and LDL improved significantly at similar rates between the two groups (p=1.11-0.31), while blood pressure improved significantly for the telehealth group only (p<0.001). Telehealth participants reported improved quality of life (p<0.05) from the first to last program session in the areas of self-worth, physical activity enjoyment, social engagement, and approach to food.

Implications for Research, Rural health, and Rural Practice: Providing a well-established and proven face-to-face program to participants living in rural and frontier communities using telehealth technology has great implications for policy, health care delivery and practice. The provision of such programs to participants living in rural and frontier communities makes geography irrelevant and greatly increases access to desperately needed programs for patients at high risk for developing diabetes and related complications. Health care policy needs to be shaped to recognize the needs of patients living in rural and frontier communities and support innovative ways to provide necessary health care services.

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