TITLE: Characteristics of Effective Text Messages from the Patient’s Perspective for Improving Diabetes Self-Care among African-Americans in Medically Underserved Areas

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ABSTRACT BODY:

Background: Recent research suggests that text messaging is a low-cost and effective approach for engaging patients in chronic disease self-care activities. Our team’s prior research demonstrates that text messaging is viewed by Mid-South African-American diabetic patients as a top strategy for engaging patients in self-care, and that patients are interested in educational, motivational, and goal-setting messages focused on healthy eating, physical activity, and medication adherence. While most studies with diabetic patients have used simple reminder messages to improve self-care activities, few studies have assessed the effectiveness of specific health-related text messages from the patient’s perspective. This study sought to identify characteristics of text messages perceived to be most effective by patients in motivating and supporting diabetes self-care for African-Americans living in medically underserved areas.

Methods: This qualitative study used patient focus groups of diabetic patients living in predominantly African-American medically underserved areas in the Mid-South to evaluate characteristics of sample text messages drawn from a first-generation text message library of educational, motivational, and goal-setting messages focused on healthy eating, physical activity, and medication adherence. Draft messages were developed based on earlier patient input in keeping with the Elaboration Likelihood Model and Self-Determination Theory for use in the planned Patient-Centered Outcomes Research Institute-funded Management Of Diabetes in Everyday Life (MODEL) intervention. Two focus group sessions of participants representative of the target population were conducted in August and September 2016. Participants reviewed approximately 15 representative draft messages in each of 3 health goal categories (i.e. healthy eating, physical activity, and medication adherence), and each category contained draft messages from all three frames (i.e. educational, motivational, or goal-setting). Participants were asked to give oral and written feedback on preferred message characteristics, understandability, perceived effectiveness in motivating, and sensitivity to patient needs. Investigators reviewed focus group notes and written feedback, identified themes, and modified draft messages in an iterative fashion after each session.

Results: The two focus groups involved 9 (2 males, 7 females; 89% African-American) and 7 (1 male, 6 females; 86% African-American) participants with diabetes or with a family member with diabetes living in medically underserved areas. The major themes identified included preference for messages with positive tone, simple language to promote understandability, specific actionable messages to promote effectiveness in motivating, and everyday activity focus to relate messages to patient needs. Participants particularly emphasized the importance of positive message tone and preferred each message to start with an encouraging statement. They particularly disliked messages perceived as condescending (e.g. “Sounds like you are getting it, but…”) or which emphasized potential failure in self-care. Participants strongly advocated for messages with short simple sentences in lay language rather than sophisticated medical terms (e.g. “sugar” instead of “carbohydrate” or “glucose” and “too low blood sugar” instead of “hypoglycemia”). Participants appreciated actionable messages with specific instructions for achieving their health goals across all three categories (e.g. “check for sugar content in the ingredients list” instead of “cut down on your sugar intake” in healthy eating; “Try walking 500 more steps today” in physical activity; and “Taking your medicine X as directed by your doctor will help lower blood sugar and improve your overall health” in medication adherence). Participants also preferred messages with an everyday activity focus to assist the target population in relating...
recommended actions to their daily activities (e.g. “eat half of a banana” instead of “consume X grams of fiber”).

**Conclusions:** This study demonstrates that African-American diabetic patients living in medically underserved areas perceive text messages to be more effective in motivating and supporting diabetes self-care when they are characterized by positive tone, simple language, specific actionable content, and everyday activity focus. These findings are consistent with other studies showing that effective communication with vulnerable populations requires sensitivity to cultural needs and differences in vernacular. Our experience indicates that patients are an invaluable source of information when it comes to understanding and managing barriers to chronic disease self-care in everyday life. Patient participation is essential for crafting patient-centered text messages targeted to change everyday health behaviors. The methods used may be applied to future studies aimed at improving self-care behaviors in patients with diabetes or other chronic conditions.

**Accuracy:** Yes

**Policy Verification:** I affirm

**Agreement:** Sohul Shuvo: I attest information is complete and truthful.;Sohul Ahmed Shuvo:Sohul:Shuvo | Justin Gatwood: I attest information is complete and truthful.;Justin Gatwood:Justin:Gatwood | Jacob Crossfield: I attest information is complete and truthful.;Jacob:Jacob:Crossfield | Alan Ross: I attest information is complete and truthful.;Alan:Ross | Carolyn Riordan: I attest information is complete and truthful.;Carolyn Riordan:Carolyn:Riordan | Mace Coday: No Answer. | James Bailey: No Answer.

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