Codesign of a cardiovascular disease prevention text message bank for older adults

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Abstract

Objective: Develop and validate a text message bank to support healthier lifestyle behaviors in older adults at risk for cardiovascular disease utilizing a codesign approach.

Methods: Initially, the researchers, based on literature, developed a bank of 68 SMS text messages focusing on healthy eating (24 messages), physical activity (24 messages), and motivational feedback (20 messages), based on a scoping review of the literature on promoting behavioral change to engage in healthy lifestyle behaviors. In the next step, a panel of five experts analyzed every subset of SMS text messages. Further validation was conducted by nine older adults (60 years). The user demographics, telephone literacy, understanding, and appeal for every SMS text message were evaluated using a 31-item questionnaire.

Results: Participants provided an acceptable understanding of the critical concept found in the 49 SMS text message (physical activity $M = 1.73 \pm 0.18$; diet $M = 1.73 \pm 0.26$; motivation $M = 1.85 \pm 0.25$; range 0–2). The average ratings for physical activity (i.e., likability), healthy eating, and motivation were 8.62 ± 0.64, 8.57 ± 0.76, and 8.40 ± 0.83, respectively (range 0–10).

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Conclusion: Co-designers were able to identify the technological and content requirements for each text message and infographic to enhance understanding and appeal.

Practice implications: A feasibility study will need to be conducted as a next step to testing the effectiveness of text messages in a mobile-based intervention to promote healthy behaviors in older adults at high CVD risk.

1. Introduction

Nearly half (48%) of American adults live with cardiovascular diseases (CVD), resulting in more than $329.7 billion in direct expenses or reduced productivity [1]. According to the 2018 Statistical Update of the American Heart Association (AHA), most adults   60 years of age do not meet the recommended criteria for optimum cardiovascular health. The AHA recommends several lifestyle changes to reduce CVD risk reduction, including smoking cessation, physical activity, improved nutrition, lower body mass index, and improved medication adherence [1]. While lifestyle interventions to reduce CVD risk are known, they are not commonly used in clinical practice [2]. Similarly, as patients struggle to meet the challenges posed by changing their lifestyle, medication adherence and treatment goals are unmet for reducing CVD risk factors. Therefore, strategies to promote self-management and improve the efficiency of treatment and follow-up programs are essential [2,3].

Unhealthy behaviors and poorly managed medical conditions are significant factors that place older adults at increased risk for poor health outcomes. Poor-quality diet and sedentary lifestyle behaviors are well-established behavioral risk factors for CVD, cancer, and diabetes mellitus [1]. Although healthy lifestyle changes can reduce morbidity and mortality [4], only 12.2% and 9.3% of US adults meet the daily fruit and vegetable intake recommendations, respectively [5]. Also, only 51% of adults report at least 150 min of leisure-time physical activity per week, recommended by the Center for Disease Control (CDC). Moreover, 24% of adults report having no physical activity [6]. Approximately 85% of older adults are at risk for disability due to poor diet and sedentary lifestyles. Thus, we should find innovative ways to improve nutrition and physical activity and promote healthy behaviors in older adults at risk for CVD.

Strategies to reduce CVD risk management barriers in older adults include information about risks and motivational support to enhance self-care [7]. They also need user-friendly tools to access resources on-demand that support motivation to adopt self-care and encourage sustained use [8,9]. One strategy that may facilitate such support is the integration of a mobile phone to complement health care delivery. Globally, mobile phones have become an acceptable tool for communication and access to information bringing together communication and computing technology [10]. The Pew Research Center estimated that American smartphone ownership grew from 35% to 77% between 2010 and 2016, and tablet ownership increased from 3% to 51% [11]. The same commentary reported eight out of ten older Americans own smartphones, and four out of ten own a tablet [11]. These figures confirm that older people believe in this technology and make it a compelling way for this generation to communicate. Mobile health (i.e., mHealth) initiatives may promote healthy lifestyles that promote timely access to and support of appropriate health information

and provide context-specific feedback and action prompts. More precisely, technological innovations in healthcare, including the use of the Short Text Message Service (SMS) for patient follow-up and disease management, show improvements in preventive health habits, symptom tracking, adherence to medications, appointment attendance, and satisfaction with chronic health services [7,9,12,13]. It is a cost-effective tool to engage patients [14]. The potential benefits of contacting large numbers of patients through text messages make this an enticing route to delivering health education [15,16].

Typically, studies have used text messages to provide patient support, reminders, and information [7,9,12]. As a result, the evidence points out the importance of tailoring the content of the messages [17,18]. However, most studies usually focus on the intervention's effectiveness; there is a lack of data on the nature and validity of the content of the messages [15,18]. Likewise, most mHealth interventions are limited to data transfers (e.g., patients transmit health data, and healthcare providers send standardized feedback) that cannot provide personalized education and advice [19,20]. More significantly, new mHealth solutions also fail to include or specifically address older adults as the potential end-users and to acknowledge their information needs and acceptability and usability concerns in the context of aging [8,21]. Changes associated with aging (e.g., reduced cognitive, perceptual, and psychomotor abilities) and experiences of usability (e.g., learnability, efficiency) will likely impact the acceptance and adoption of mHealth by older adults at risk for CVD [22]. It includes consumer modification to ensure an adequate comprehension and appeal of mHealth technologies to anticipated end-users (i.e., older adults). This study aims to develop and validate a text message bank to support healthier lifestyle behaviors in older adults at risk for cardiovascular disease utilizing a codesign approach.

2. Methods

The "Get Fitness Intensive Therapy" (i.e., *Get FIT*) trial is a feasibility study designed to provide advice on health care to older adults at risk of CVD via SMS to improve health status, increase physical activity and promote healthy eating [23]. The current study's objective is to develop and validate a text message database that will be delivered to participants throughout their three-month participation in the *Get FIT* trial using the codesign approach proposed by Abroms and colleagues [18]. Codesign is often used as a paragliding term for participatory or co-creation of an initiative, intervention, or service that allows a wide range of stakeholders (e.g., health care providers, end - users) to make a creative contribution and ensure that the results meet their needs. The following sections explain how stakeholders become involved in the SMS text message database testing, refinement, and initial prototyping.

2.1. Phase 1: development of the message bank

The authors reviewed the literature to gain insights related to the target audience (older adults) and target health behaviors (healthy eating and physical activity) to develop the collection of messages [18]. Next, the authors developed a text message bank that included three datasets of educational, motivational, and goal improvement feedback messages targeting diet, physical activity, and motivation/ adherence.

The nutrition and physical activity messages structure were designed to create a customizable feedback message to be sent to participants. The messages contained a high level of personalization in that they allowed the health coach (i.e., an individual with prior experience in healthy lifestyle counseling and a bachelor's degree) to insert the participant's first name and provide updates on goal progress (e.g., three out of four fruit servings eaten today). The original message bank included one message with a positive tone and another with a constructive tone, both based on the same content. The health coach could then choose which of the two messages to send based on the participant's progress in that area. As the *Get FIT+* intervention lasts three months (12 weeks), a minimum of 24 customizable messages was required for both nutrition and physical activity so that no message would be sent to the same participant more than once. The design was to send three text messages each week (one with nutritional content, one with physical activity content, and one with motivational/adherence content). Messages would be sent around the same time each day at a time of the participant's choosing. Nutrition and physical activity messages included customizable goal feedback. Several also included an image file with an infographic from the AHA, National Institute on Aging under the National Institute of Health (NIH), or CDC (as available) to support the message's content.

The research team created the motivation/affirmation messages to support and improve learning and track progress. Twenty customized notifications were generated based on the frequency in which the participant used the activity tracker and the smartphone app.

This process resulted in a message bank with a total of 68 messages (Table 1). All messages were kept brief (maximum 59 characters), although modern SMS allows longer messages to be segmented and rebuilt into several messages. The text messages were adapted to an 8th-grade reading level using MS Word's Flesch-Kincaid Grade Level [24]. Likewise, the number of topics per message was limited to one or two. The infographics were provided as-is in the initial series of messages sent to reviewers. Messages were first written in English, then translated into Spanish and verified by another native Spanish speaker.

2.2. Phase 2: content validation of the SMS

2.2.1. Setting and participants
—For the validation phase, the messages were reviewed and examined by an expert panel (N = 5) consisting of nurses with experience working with older adults in the community, and specializations in intensive care, CVD management, gerontology, diabetes, and nursing education. Two panelists were Spanish native speakers. All panelists completed their reviews and offered feedback in English. The bank of 68 text messages was also reviewed and validated by nine older adults who met the *Get FIT* inclusion criteria and were potential recipients of text messages. The 68 messages were split into two subgroups, each with 34 messages (12 nutrition, 12 physical activities, and ten reasons/consistencies) and a mix of positive and constructive feedback messages to provide feedback in various ways.

2.2.2. Data collection tools and procedures
—The five expert reviewers were sent an electronic file with the messages and instructions on how to provide their feedback via comments. Suggestions from the experts were collected to improve the individual messages,

considering that the validated messages would become part of a cohesive set. Minor changes to the wording of the messages were made based on the initial expert feedback (i.e., "this word ['consuming'] sounds too technical; use 'eat' instead"). Suggestions were also made as to the order in which the messages would be delivered to the participants. The panel proposed that notifications with key educational content or program updates should be delivered at the outset, accompanied by more specific objective input and educational content as the program progressed. These modifications were not made to determine whether the order of the messages was also described as an area of concern or enhancement by the nine potential end-users.

The nine potential end-users were selected based on the parent study's inclusion criteria and include age   60 years, from low-income, predominantly minority communities who are at risk cardiovascular disease as determined by their Framingham risk assessment scores, spoke, and read English or Spanish, and willingness to review the text messages. Participants were interviewed face-to-face by a research associate, individually or in pairs of two. The text messages were printed and given to reviewers in a packet, with one text message per page, a separate page with the accompanying infographic if there was one, followed by a page with the six message feedback questions. The nine co-designers handwrote their comments and shared them with a research associate; these discussions were audio-recorded. On average, the process took one and a half to two hours to complete.

2.2.3.   Analysis—The nine potential end-users who agreed to review the text messages also completed a 26 items questionnaire to collect user demographics (six items), phone literacy (six items), and current phone usage (13 checklist items and one open-ended question). The message feedback questionnaire was built upon one used by another text-message validation study found in the literature [15]. It included elements for evaluating the comprehension and appeal of each message that was uploaded. Two open-ended questions were asked to test the user's understanding of each post. First, the critics had to repeat the message on their own terms. The second question asked what (if anything) the reader did not understand. Message appeal rating scores for each message were reported on a Likert Scale where one represented "do not like the message at all," and 10 "like it a lot." Two open-ended questions about the message appeal were also asked. The first asked what the reader liked about the message, and the other asked what they did not like. The final open-ended question queried suggestions for improvement. The mean appeal rating score for each message was achieved by averaging all scores for that message. The two open-ended item responses were recorded verbatim.

Two members of the research team scored the reviewers' understanding of each message by analyzing the response to the first item. If the response indicated they did not understand the message at all, it was given a score of "0"; if they understood some, but not all, of the message, it was given "1"; if they understood the entire message, it was given a score of "2". For responses that were left blank or for which the end-user wrote "?" or gave an incomplete answer (one-word written, incomplete sentence or phrase), the researchers attempted to assess understanding based on the responses to the other five items (words not understood, what was liked/not liked, suggestions for improvement). The open-ended understanding responses were recorded verbatim.

3. Results

Table 2 presents the complete demographic data for the nine representatives from the target population. Four of the nine participants provided feedback in Spanish, while the remaining five provided feedback in English. Table 3 shows full data on phone literacy and use.

3.1. Message understanding

Each message's understanding scores were averaged. Responses to the open-ended question assessing understanding were recorded. Understanding scores are presented by group in Table 4. Overall, the messages received high scores for understanding (physical activity $M = 1.73 \pm 0.18$; nutrition $M = 1.73 \pm 0.26$; adherence/motivation $M = 1.85 \pm 0.25$; range 0–2), indicating the end-users understood the content of the messages well.

Two participants indicated they did not understand the word "escalfado(s)," which was intended to mean "poached." The word "comprometida" (intended meaning "committed") also received two responses indicating the word was not fully understood. The messages containing these words were rewritten, omitting the words "comprometida" and "escalfado." One participant mentioned an image/infographic accompanying the text was difficult to understand. This infographic contained information on processed foods with more than six concepts. The infographic was edited to contain three concepts. One participant said they did not understand the term "woohoo" (intended to be a congratulatory phrase). This was replaced with another congratulatory phrase ("awesome"). One participant did not understand the phrase "bandas de resistencia," which intended to describe resistance bands used for exercise. This phrase was left in the final text message bank for further feedback. One participant reported "met goal-for what activity or food?" indicating further information was needed to convey the desired content. Another participant expressed confusion about the feedback that they had recorded food intake for three consecutive days, stating, "shouldn't [we] be recording every day." This message was similar in content to another message that received a higher understanding and appeal score and was omitted in favor of the higher scoring message. One message in the motivation/adherence subgroup was omitted with a 1.25 mean understanding score.

3.2. Message appeal

Each message's appeal scores were averaged across each of the domains, resulting in a mean appeal score for each message (Table 4). The messages received high appeal scores (physical activity mean, 8.62 ± 0.64; nutrition mean: 8.57 ± 0.76; motivation/adherence mean, 8.40 ± 0.83; range 1–10), indicating the messages were appealing ("likable") to the participants. Some responses were missing (nutrition/diet n = 1, physical activity n = 3, compliance/motivation n = 7), and the mean was imputed for analysis.

Among the motivation and adherence messages, the feedback varied. Some users felt some messages were unnecessary (e.g., "Happy Birthday"). Others reported appreciating having an update on their progress through the study or felt the holiday wishes added a personal tone. The motivation/adherence messages were last provided, so it is likely at that stage that reviewers felt "survey fatigue." Participants used words or phrases to convey

their appreciation for the messages' supportive or positive tone, specific goal feedback, educational content/new information, and suggestions.

The researchers made an effort to use language in the messages that were not harsh, critical, or punitive. Messages were written to provide guidance, education, and suggested tips on how to improve. Still, end users reported one message", seemed' preachy"' and "starting to get a little naggy." Given this feedback, the decision was made to provide objective goal feedback accompanied by suggestions, tips, motivation, or educational content in each message. Examples of several original messages and their rephrasing after feedback are presented in Table 5.

3.3. Infographics

A majority of participants liked the image files, which accompanied some of the text messages. These images were from AHA, CDC, and NIA-NIH infographics that supported the content of the message they were paired with. All are available in the public domain (due to limited availability in English and Spanish, the researchers translated those that were only available in English). Some users felt the images contained information that was not relevant to the content of the messages (i.e., the message was about fruit, the image included information about fruits and vegetables) and wanted the image to be "split" across two messages (one fruit, one vegetable).

The research team reviewed the final set of messages considering the experts' input and the nine end-users reviewers. After careful consideration, the team reached a consensus on the list of messages that would comprise each domain's final set. (See Table 5 for the final set of text messages). Some of the 68 messages were shortened, reworded, or eliminated; some infographics were restructured into two separate images or eliminated, and additional infographics were sought out. The frequency of the final set of messages was to be three messages per week, Monday, Wednesday, and Friday (week-ends omitted), with a choice of time (9 am, 12 pm, or 5 pm).

4.   Discussion and conclusion

4.1.   Discussion

Various conceptualization shares the notion of intervention development phases or stages. Everything we attempted to achieve in the current study included stage 0 and stage 1 in the staged-change model to generate a new intervention [25]. When we created the original database for our text messages, we checked the text messages using both an expert panel and a group of people representing the intended end-users (i.e., older adults at risk for cardiovascular disease based on their Framingham Risk Assessment Score). The goal was to change, adapt, and optimize the existing text message database composed of 68 text messages.

Our experience in creating and testing text messages in our database has reinforced the importance of having a good design process. Perhaps one of the most critical factors is to be flexible and responsive to input and feedback from the program's planned end-users, as Partridge et al. [26] showed in their study. If a recipient does not like the text messages, they

are less likely to react to or engage in the recommended behaviors. The participants' input was instrumental as we created and evaluated a database of text messages. The messages' high comprehension and appeal scores reflected the usability and acceptability of the text messages. The accessible feedback led to the refinement of word choice and phrases used in each message and enhanced the participants' enhanced value. This process guided the authors' decisions and modified the text, wording, and phrasing of the original message bank [27].

Our findings indicate that the creation and validation of the text message database for this study is essential to ensure that the content of the messages is accurate and understandable, and appealing to targeted end-users. However, we would like to note that the sample of potential end-users invited to participate in the text back refinement may have received information on cardiovascular disease prevention from healthcare professionals that could have affected awareness and appeal. Ideally, research that incorporates a codesign model should consider potential end-user's basic knowledge of text message topics to gauge their impact on outcomes.

The next step in designing mHealth-based interventions is to launch the program for feasibility testing and pilot test the program. A range of easy-to-use SMS platforms allows an opportunity to set up a system using a web-based interface that allows text message scheduling and keywords and branching logic (targeted message and content scheduling) to be created [28]. Some are free or low-cost services such as TextIt and Ez Texting and are particularly well suited for SMS text use.

One of the concerns raised by our expert panel was the potential privacy violation when messages are sent to participants. One suggestion from the expert panel members was that specific feedback would be provided to text message recipients as the advice would be customized and tailored to their health conditions. However, text messages are not encrypted and therefore pose a risk to personal health information. Therefore, we have agreed explicitly that personal health information should not be included in our text messages to satisfy the Health Insurance Portability and Accountability Act of 1996 (HIPAA) guidelines and other healthcare privacy criteria as already stated by other authors [18]. This is something that we must take into account in further feedback from pilot study participants. Similarly, to protect participants' privacy, we need to ensure that possible participants understand the potential risk of sharing personal health information via SMS text. Information on privacy violations will be explained in understandable terms, and the potential participants should be shown examples of the text messages during the informed consent process.

4.2. Conclusion

Our study underscore the importance of having adequate time and input from co-designers to tackle the iterative aspect of designing, validating, and refining a text message database for older adults at elevated risk for CVD. The potential benefits of engaging with older adults to reduce their CVD risk through text message behavioral change are an exciting, cost-effective idea. Co-designers were able to identify the technical and content requirements for each text message and the associated infographics. By integrating feedback

from co-designers in the refinement of the text message database, researchers hope to improve messaging, comprehension, and appeal and optimize the time and frequency of delivery of messages.

4.3. Practice implications

Overall, codesigning a text message bank with users, researchers, developers, and experts resulted in a more intuitive interface that is age-appropriate for end-users. Our findings also provide insights into technology adoption that can direct the design, instruction, and implementation of products for older adults. The test bank messages were designed to make it easier to promote healthy lifestyle habits in older adults by offering updates and input tailored to their particular needs, preferences, and skills. The use of the text bank in future studies is expected to promote self-management and meaningful practices. Understanding the factors that affect older adults' intervention adoption is important, considering the evidence of the benefits of mobile-based therapies, which range from improved adherence to a lower prevalence of depressive states and higher levels of social support, lower feelings of isolation, and a higher perceived quality of life.

The next step in designing mHealth-based interventions is to launch the program for feasibility testing and pilot test the initial prototype. There is a range of easy-to-use SMS platforms that provide an opportunity to set up a system using a web-based interface that allows text message scheduling based on lifestyle behaviors. Future research to assess the acceptability and usability of these systems is warranted before proceeding with a larger randomized clinical trial.

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Table 1

Original text message bank.

Week/Group	Positive (P)/ Constructive (C)	Message
Nutrition		
Week 1	P	[NAME],_day you met your goal of eating X vegetables. Awesome! [Infographic: AHA Fruits/Vegs Portions]
	C	[NAME], Yesterday, you ate _ servings of veggies. Try to add one more serving today. [Infographic: AHA Fruits/Vegs Portions]
Week 2	P	[NAME], way to go! You met your calorie goal by consuming [X] calories _day. Many drinks can be high in calories. Check out this info sheet: [Infographic: AHA Sip Smarter]
	C	[NAME], _day, you consumed XXXXX calories. That's more than your goal of XXXXX calories. Be aware that many drinks can be high in calories. Check out this info sheet: [Infographic: AHA Sip Smarter]
Week 3	P	[NAME], you're doing well! You stuck to your sugar goal by eating < _g of sugar. Keep it up! [Infographic: AHA Life is Sweet]
	C	[NAME], _day you ate _g of sugar. That's more than the recommendation (<25 g). You can do it! [Infographic: AHA Life is Sweet]
Week 4	P	[NAME], _day you met your goal of eating X fruit servings. Awesome! [Infographic: AHA Superfoods]
	c	[NAME], you are one step away from meeting your goal of eating X fruits. Today try adding a new superfood. [Infographic: AHA Superfoods]
Week 5	p	[NAME], you rock! _day you ate < _g of fat. AHA recommends 11–13 g per day. Foods that are steamed, broiled, baked, grilled, poached, or roasted are lower in fat. [Infographic: AHA Fats]
	c	[NAME], yesterday you ate X g of fat; AHA recommends 11–13 g per day. Dont's fry-give healthy cooking a try! Baking, steaming, grilling, roasting, braising, sauteing, and stir-frying are all healthier ways. [Infographic: AHA Fats]
Week 6	p	[NAME], way to stay on track! Check out this guide to eat smart: [Infographic: AHA Eat Smart]
	c	[NAME], check out this guide to help you eat smart and stay on track: [Infographic: AHA Eat Smart]
Week 7	p	[NAME], way to eat those veggies! _day you met your goal of 5–6 servings of veggies. Keep it up:) [Infographic: AHA Eat Smart]
	c	[NAME], you are one step away from meeting your goal of eating X servings of veggies. Today try a healthy, hearty salad. [Infographic: Healthier salad]
Week 8	p	[NAME], you're making healthy choices! By eating X calories _day, you are committed to your goal of X! Continue to avoid processed foods. [Infographic: AHA Processed foods]
	c	[NAME], _day you were over your calorie goal by X. Calories are usually higher in processed foods. Check this out:[Infographic: AHA Processed Food]
Week 9	p	[NAME], you are committed! You ate X g of sugar _day. That's X days in a row that you've met your goal. Stay strong! [Infographic: AHA Cut out Added Sugar]
	c	[NAME], you ate more than X g of sugar _day. Try to cut out added sugars. [Infographic: AHA Cut out added sugar]
Week 10	p	[NAME], fantastic! You ate X servings of fruit _day! Woohoo! [Infographic: AHA Eat more color]
	c	[NAME], Yesterday, you ate _ servings of fruits. Try to add one more serving today. [Infographic: AHA Eat more color]
Week 11	p	[NAME], you rock! _day you consumed < _g of fat. Here are some tips for managing how much fat you eat: use 1% or skim milk instead of 2% or whole; use cooking spray or olive oil instead of butter; choose the fruit cup as a side instead of french fries.
	c	[NAME], you've got this! Today's goal: _g of fat (or less). Try a healthy swap! Use 1% or skim milk instead of 2% or whole; cooking spray or olive oil instead of butter; choose a fruit cup as a side instead of french fries.

Week/Group	Positive (P)/ Constructive (C)	Message
	p	[NAME], keep it up! Check out this guide to healthy eating: [Infographic: AHA eat clean]
	c	[NAME], check out this guide to help you make healthy choices: [Infographic: AHA Eat Clean]
Exercise/physical activity		
Week 1	p	[NAME], great job yesterday/today/_day! You exercised for XX minutes doing [enter activity]. Keep up the good work & ask someone to join you tomorrow. [Infographic: CDC recs]
	c	[NAME], -day you were active for X minutes; your goal is X minutes. Almost there! Ask someone to join you on a walk today. [Infographic: CDC recs]
Week 2	p	[NAME], yesterday you met your activity goal! Way to go! Try to divide your time into 2 or 3 segments of 10–15 min a day. [Infographic: AHA Move More]
	c	[NAME], you were active X minutes so far this week. Try to divide your time into 2 or 3 segments of 10–15 min a day, so it doesn't feel overwhelming. [Infographic: AHA Move More Info]
Week 3	p	[NAME], you met your activity goal _day! Awesome! Not every day will be perfect; if you miss a day or a workout, don't worry about it. Focus on what you will do tomorrow; every move counts! [Infographic: Make Every Move Count]
	c	[NAME], It looks like you missed yesterday's goal. Not every day is perfect; if you miss a day or a workout, don't worry about it. Focus on what you will do tomorrow; every move counts! [Infographic: Make every Move Count]
Week 4	p	[NAME], you logged X minutes of activity _day! Keep it up! Here are other ways to get active: yard work, lift weights, use resistance bands during TV commercials, go for a walk after dinner, dance to your favorite music.
	c	[NAME], you almost met your activity goal _day! Keep it up! Here are other ways to get active: yard work, lift weights, use resistance bands during TV commercials, go for a walk after dinner, dance to your favorite music.
Week 5	p	[NAME], great job _day- you met your activity goal of X minutes! Remember to stay safe when you're active. Use sunscreen, reflectors, or lights in the evening/at night, wear comfortable shoes, and stay hydrated!
	c	[NAME], _day you logged X minutes of activity minutes; almost there! Remember to stay safe when you're active. Use sunscreen, reflectors, or lights in the evening/at night, wear comfortable shoes, and stay hydrated!
Week 6	p	[NAME], you met yesterday's goal! Great job! Dont's let the weather get in your way. Too cold? Look for activities indoors like walking around an indoor shopping center, a fitness class, or video online in your home. Too hot? Be active in the morning, walk around an indoor shopping center, try swimming, or a walk on the beach.
	c	[NAME], It looks like you missed yesterday's goal. Dont's let the weather get in your way. Too cold? Look for activities indoors like walking around an indoor shopping center, a fitness class, or video online in your home. Too hot? Be active in the morning, walk around an indoor shopping center, try swimming, or a walk on the beach.
Week 7	p	[NAME], yesterday you were active X minutes. Way to go! Think being active has to cost a lot? Many activities are free, like walking/jogging, and hiking. Check out the library, community center, or go online for low-cost or free activities.
	c	[NAME], yesterday you were active X minutes; almost there! Think being active has to cost a lot? Many activities are free, like walking, jogging, and hiking. Check out the library, community center, or go online for low-cost or free activities.
Week 8	p	[NAME], you met your activity goal yesterday! Try to be active at the same time each day to help the routine stick.
	c	[NAME], you almost met your activity goal yesterday. Try to be active at the same time each day to help the routine stick.
Week 9	p	[NAME], _day you were active for X minutes and met your goal. Awesome! If your energy levels get low, try these tips: [Maintain Energy infographic]
	c	[NAME], you need X more minutes of activity to meet your goal this week. You can do it! If your energy levels get low, try these tips: [Maintain Energy infographic]

Week/Group	Positive (P)/ Constructive (C)	Message
Week/Group	Positive (P)/ Constructive (C)	Message
Week 10	P	[NAME], _day you were active for X minutes and met your goal. Awesome! Here are some ways to stay active: take the stairs instead of the elevator; park a little farther away from the entrance to get some extra steps in today; get up and move during TV commercials or breaks.
	C	[NAME], _day you were active for X minutes; X more to go this week! Here are some ways to increase your activity: try to take the stairs instead of the elevator; park a little farther away from the entrance to get some extra steps in today; get up and move during TV commercials or breaks.
Week 11	P	[NAME], you have been active X days in a row! Being physically active adds years to your life. Keep it up!
	C	[NAME], you didn't meet your activity goal yesterday. Being physically active adds years to your life. You can do it!
Week 12	P	[NAME], you met your activity goal! When you are active, you sleep better, have more energy, are more flexible, reduce your stress, lower your blood pressure, more self-confidence, and a better mood. Way to go!
	C	[NAME], it's not too late. You can still meet your activity goal. When you are active, you sleep better, have more energy, are more flexible, reduce your stress, lower your blood pressure, gain self-confidence, and a better mood. Go for it!
Compliance/motivation		
Week 1		[NAME], remember to record all the food and drinks you have today.
Week 2		[NAME], you're doing well! You've recorded three days of food in a row!
Week 3		[NAME], you recorded 24 days of food this month! You're entered in this month's lottery!
Week 4		[NAME], oops! You didn't record any food yesterday. Is everything okay? For assistance, contact study staff at X.
Week 5		[NAME], you've recorded three days in a row! You're making progress-keep it up!
Week 6		[NAME], you didn't record any activity yesterday. Is everything okay? If you're having difficulty with anything, contact study staff at X.
Week 7		[NAME], we haven't seen you in a while. Dont's forget to wear your Fitbit every day, so you get credit for all your activity.
Week 8		[NAME], it looks like you missed your activity yesterday. Remember to wear your Fitbit each day and keep it fully charged.
Week 9		Happy birthday, [ENTER PARTICIPANT'S NAME]! We hope you have a great day! - Get FIT research staff @UCI
Week 10		Happy holidays, [ENTER PARTICIPANT'S NAME]! Get FIT research staff @ UCI
Week 11		Happy Independence Day!
Week 12		Happy Memorial Day!

Table 2

Demographic data.

Potential end-users	
Gender	
Male	44.44%
Female	55.56
Age (mean)	64.33
Ethnicity	
Hispanic/Latino/a	44.44%
Not Hispanic/Latino/a	55.56
Language	
Spanish	44.4%
English	55.5

Table 3

Phone literacy & current phone usage results (potential end-users).

Phone literacy	Yes	No	No answer
1) Do you own a cellphone? [If you do not own a phone, proceed to the next sheet].	100%	0%	
2) Is your phone a smartphone (allows you to use the internet, install applications)?	100%	0%	
3) What model/make is your phone (iPhone, Samsung, LG, etc.)?	55% iPhone; 44% Android device		
4) Do you share the phone with another person?	0%	100%	
5) With whom do you share your phone?			100%
6) Is your phone accessible (you can respond to texts/calls) to you for most of the day (> 75%)?	100%	0%	
Current phone usage Do you use your phone to…			
a… send text messages?	100%	0%	
b… receive text messages?	100	0	
c… make calls?	100	0	
d… receive calls?	100	0	
e…send/receive email?	89	11	
f… browse the internet?	100	0	
…use social media applications like.			
g. …Instagram?	44%	55%	
h. …Facebook?	67	33	
i. …Twitter?	0	100	
j. …Health apps (like Weight Watchers, Lose It, Fooducate, etc.)?	33	67	
k. …Fitness apps (like Fitbit, MapMyRun, My Fitness Pal, ActiveX, Sworkit, etc.)?	33	67	
l. …Mental Health apps (Meditation Studio, Calm, Headspace, Happify, etc.)?	11	89	
…. which apps do you use most?			
Fitbit n = 1	Games n = 1		
Newsfeed n = 1	Mapquest n = 1		
Email n = 1	Facebook n = 1		
Google Maps n = 1	My Fitness Pal n = 1		

Table 4

Original text message bank scores.

Week/Group	Positive (P)/Constructive (C)	Messages	Understanding score (0—2)/StD	Appeal score (1—10)/StD	9/12
Nutrition					
Week 1	P	[NAME], _day you met your goal of eating X vegetables. Awesome! [Infographic: AHA Fruits/Vegs Portions]	2/0	7.6/2.51	
Week 2	C	[NAME], Yesterday, you ate _ servings of veggies. Try to add one more serving today. [Infographic: AHA Fruits/Vegs Portions]	1.5/0.58	8.5/2.38	C
	P	[NAME], way to go! You met your calorie goal by consuming [X] calories _day. Many drinks can be high in calories. Check out this info sheet: [Infographic: AHA Sip Smarter]	1.75/0.5	8.5/1.29	P
Week 3	C	[NAME], _day, you consumed XXXXX calories. That's more than your goal of XXXXX calories. Be aware that many drinks can be high in calories. Check out this info sheet: [Infographic: AHA Sip Smarter]	1.8/0.5	8.4/2.07	
	P	[NAME], you're doing well! You stuck to your sugar goal by eating <_g of sugar. Keep it up! [Infographic: AHA Life is Sweet]	2.0/0	8.8/1.64	C
Week 4	C	[NAME], _day you ate _g of sugar. That's more than the recommendation (<25 g). You can do it! [Infographic: AHA Life is Sweet]	1.25/0.96	9.5/0.58	P
	P	[NAME], _day you met your goal of eating X fruit servings. Awesome! [Infographic: AHA Superfoods]	1.75/0.5	9.25/0.96	
Week 5	C	[NAME], you are one step away from meeting your goal of eating X fruits. Today try adding a new superfood. [Infographic: AHA Superfoods]	2/0	7/2.74	P
	P	[NAME], you rock! _day you ate <_g of fat. AHA recommends 11–13 g per day. Foods that are steamed, broiled, baked, grilled, poached, or roasted are lower in fat. [Infographic: AHA Fats]	2/0	9.25/1.5	
Week 6	C	[NAME], yesterday you ate X g of fat; AHA recommends 11–13 g per day. Don't fry-give healthy cooking a try! Baking, steaming, grilling, roasting, braising, sauteing, and stir-frying are all healthier ways. [Infographic: AHA Fats]	1/0.82	8.75/1.26	P
	P	[NAME], way to stay on track! Check out this guide to eat smart: [Infographic: AHA Eat Smart]	1.5/0.58	7.5/3.11	
Week 7	C	[NAME], check out this guide to help you eat smart and stay on track: [Infographic: AHA Eat Smart]	2/0	8.2/2.49	C
	P	[NAME], way to eat those veggies! _day you met your goal of 5–6 servings of veggies. Keep it up:) [Infographic: Healthier Salad]	1.8/0.5	9.0/1.73	P
Week 8	C	[NAME], you are one step away from meeting your goal of eating X servings of veggies. Today try a healthy, hearty salad. [Infographic: Healthier salad]	1.75/0.5	8.75/0.96	
	P	[NAME], you're making healthy choices! By eating X calories _day, you are committed to your goal of X! Continue to avoid processed foods. [Infographic: AHA Processed foods]	1.5/1	8.75/0.96	P
Week 9	C	[NAME], _day you were over your calorie goal by X. Calories are usually higher in processed foods. Check this out: [Infographic: AHA Processed Food]	2/0	6.4/3.51	
	P	[NAME], you are committed! You ate X g of sugar _day. That's X days in a row that you've met your goal. Stay strong! [Infographic: AHA Cut out Added Sugar]	1.6/1	9.0/1.73	P

Week/Group	Positive (P)/Constructive (C)	Messages	Understanding score (0—2)/StD	Appeal score (1—10)/StD	
	C	[NAME], you ate more than X g of sugar _day. Try to cut out added sugars. [Infographic: AHA Cut out added sugar]	1.75/0.5	8.5/1.29	
Week 10	P	[NAME], fantastic! You ate X servings of fruit _day! Woohoo! [Infographic: AHA Eat more color]	1.5/1	9.0/1.41	P
	C	[NAME], Yesterday, you ate _ servings of fruits. Try to add one more serving today. [Infographic: AHA Eat more color]	1.8/0.5	9.0/1.73	
Week 11	P	[NAME], you rock! _day you consumed < _g of fat. Here are some tips for managing how much fat you eat: use 1% or skim milk instead of 2% or whole; use cooking spray or olive oil instead of butter; choose the fruit cup as a side instead of french fries.	1.75/0.58	9.4/1.34	P
	C	[NAME], you've got this! Today's goal: _g of fat (or less). Try a healthy swap! Use 1% or skim milk instead of 2% or whole; cooking spray or olive oil instead of butter; choose a fruit cup as a side instead of french fries.	1.75/0.5	9.0/0.82	
Week 12	P	[NAME], keep it up! Check out this guide to healthy eating: [Infographic: AHA eat clean]	1.75/0.5	9.25/0.5	P
	C	[NAME], check out this guide to help you make healthy choices: [Infographic: AHA Eat Clean]	2/0	8.4/2.19	
Exercise/physical activity					
Week 1	P	[NAME], great job yesterday/today/_day! You exercised for XX minutes doing [enter activity]. Keep up the good work 8; ask someone to join you tomorrow. [Infographic: CDC recs]	2/0	8.8/1.79	7/12
	C	[NAME], -day you were active for X minutes; your goal is X minutes. Almost there! Ask someone to join you on a walk today. [Infographic: CDC recs]	1.75/0.5	9.0/1.41	C
Week 2	P	[NAME], yesterday you met your activity goal! Way to go! Try to divide your time into 2 or 3 segments of 10–15 min a day. [Infographic: AHA Move More]	1.25/0.5	8.25/1.5	
	C	[NAME], you were active X minutes so far this week. Try to divide your time into 2 or 3 segments of 10–15 min a day, so it doesn't feel overwhelming. [Infographic: AHA Move More Info]	1.5/0.58	8.8/1.79	C
Week/Group	Positive (P)/Constructive (C)	Messages	Understanding score (0—2)/StD	Appeal score (1—10)/StD	
Week 3	P	[NAME], you met your activity goal _day! Awesome! Not every day will be perfect; if you miss a day or a workout, don't worry about it. Focus on what you will do tomorrow. Every move counts! [Infographic: Make Every Move Count]	1.75/0.5	8.5/1.91	P
	C	[NAME], it looks like you missed yesterday's goal. Not every day is perfect; if you miss a day or a workout, don't worry about it. Focus on what you will do tomorrow. Every move counts! [Infographic: Make every Move Count]	1.5/0.58	8.0/2.16	
Week 4	P	[NAME], you logged X minutes of activity _day! Keep it up! Here are other ways to get active: yard work, lift weights, use resistance bands during TV commercials, go for a walk after dinner, dance to your favorite music.	1.5/0.58	9.0/0.82	P
	C	[NAME], you almost met your activity goal _day! Keep it up! Here are other ways to get active: yard work, lift weights, use resistance bands during TV commercials, go for a walk after dinner, dance to your favorite music.	2/0	9.0/2.0	
Week 5	P	[NAME], great job _day- you met your activity goal of X minutes! Remember to stay safe when you're active. Use sunscreen, reflectors, or lights in the evening/at night, wear comfortable shoes, and stay hydrated!	2/0	9.0/2.0	P
	C	[NAME], _day you logged X minutes of activity minutes; almost there! Remember to stay safe when you're active. Use sunscreen, reflectors, or lights in the evening/at night, wear comfortable shoes, and stay hydrated!	1.5/0.58	8.0/1.0	

Week/Group	Positive (P)/Constructive (C)	Messages	Understanding score (0—2)/StD	Appeal score (1—10)/StD	
Week 6	P	[NAME], you met yesterday's goal! Great job! Don't let the weather get in your way. Too cold? Look for activities indoors like walking around an indoor shopping center, a fitness class, or video online in your home. Too hot? Be active in the morning, walk around an indoor shopping center, try swimming, or a walk on the beach.	1.75/0.5	8.5/1.29	
	C	[NAME], it looks like you missed yesterday's goal. Don't let the weather get in your way. Too cold? Look for activities indoors like walking around an indoor shopping center, a fitness class, or video online in your home. Too hot? Be active in the morning, walk around an indoor shopping center, try swimming, or a walk on the beach.	1.75/0.5	8.75/1.89	C
Week 7	P	[NAME], yesterday you were active X minutes. Way to go! Think being active has to cost a lot? Many activities are free, like walking, jogging, and hiking. Check out the library, community center, or go online for low-cost or free activities.	1.75/0.5	8.25/1.71	
	C	[NAME], yesterday you were active X minutes; almost there! Think being active has to cost a lot? Many activities are free, like walking, jogging, and hiking. Check out the library, community center, or go online for low-cost or free activities.	1.5/0.58	8.5/1.29	C
Week 8	P	[NAME], you met your activity goal yesterday! Try to be active at the same time each day to help the routine stick.	1.5/0.58	8.0/0.82	
	C	[NAME], you almost met your activity goal yesterday. Try to be active at the same time each day to help the routine stick.	2/0	8.5/1.91	C
Week 9	P	[NAME], _day you were active for X minutes and met your goal. Awesome! If your energy levels get low, try these tips: [Maintain Energy infographic]	1.75/0.5	8.6/1.67	
	C	[NAME], _day you were active for X minutes and met your goal. Awesome! If your energy levels get low, try these tips: [Maintain Energy infographic]	1.75/0.5	7.75/1.5	P
Week 10	P	[NAME], you need X more minutes of activity to meet your goal this week. You can do it! If your energy levels get low, try these tips: [Maintain Energy infographic]	1.75/0.5	9.5/0.58	P
	C	[NAME], _day you were active for X minutes and met your goal. Awesome! Here are some ways to stay active: take the stairs instead of the elevator; park a little farther away from the entrance to get some extra steps in today; get up and move during TV commercials or breaks.	2/0	9.2/1.79	
Week 11	P	[NAME], _day you were active for X minutes; X more to go this week! Here are some ways to increase your activity: try to take the stairs instead of the elevator; park a little farther away from the entrance to get some extra steps in today; get up and move during TV commercials or breaks.	1.67/0.58	9.2/1.79	P
	C	[NAME], you have been active X days in a row! Being physically active adds years to your life. Keep it up!	1.5/0.84	8.5/1.29	
Week 12	P	[NAME], you didn't meet your activity goal yesterday. Being physically active adds years to your life. You can do it!	1.75/0.89	9.0/0.82	P
	C	[NAME], you met your activity goal! When you are active, you sleep better, have more energy, are more flexible, reduce your stress, lower your blood pressure, more self-confidence, and a better mood. Way to go!	2/0	8.8/1.79	
		[NAME], it's not too late; you can still meet your activity goal. When you are active, you sleep better, have more energy, are more flexible, reduce your stress, lower your blood pressure, gain self-confidence, and a better mood. Go for it!			
Compliance/motivation					
Week 1		[NAME], remember to record all the food and drinks you have today.	2/0	9.0/1.73	
Week 2		[NAME], you're doing well! You've recorded three days of food in a row!	1.25/0.96	5.75/4.64	
Week 3		[NAME], you recorded 24 days of food this month! You're entered in this month's lottery!	2/0	8.8/1.64	

Week/Group	Positive (P)/Constructive (C)	Messages	Understanding score (0—2)/StD	Appeal score (1—10)/StD
Week 4		[NAME], oops! You didn't record any food yesterday. Is everything okay? For assistance, contact study staff at X.	2/0	7.75/2.22
Week 5		[NAME], you've recorded three days in a row! You're making progress-keep it up!	2/0	9.0/1.73
Week 6		[NAME], you didn't record any activity yesterday. Is everything okay? If you're having difficulty with anything, contact study staff at X.	2/0	8.0/1.83

Week/Group	Positive (P)/Constructive (C)	Messages	Understanding score (0—2)/StD	Appeal score (1—10)/StD
Week 7		[NAME], we haven't seen you in a while. Don't forget to wear your Fitbit every day, so you get credit for all your activity.	2/0	8.75/1.89
Week 8		[NAME], it looks like you missed your activity yesterday. Remember to wear your Fitbit each day and keep it fully charged.	1.25/0.5	8.0/0.816
Week 9		Happy birthday, [ENTER PARTICIPANT'S NAME]! We hope you have a great day! - Get FIT research staff @UCI	2/0	9.0/1.73
Week 10		Happy holidays, [ENTER PARTICIPANT'S NAME]! Get FIT research staff @ UCI	2/0	9.5/0.71
Week 11		Happy Independence Day!	2/0	9.0/1.73
Week 12		Happy Memorial Day!	2/0	9.0/
Extra 13		Happy Thanksgiving, [ENTER PARTICIPANT'S NAME], - Get FIT research staff @UCI	2/0	7.6/2.07
Extra 14		Visit heart.org today for more tips and info on reducing your risk for cardiovascular disease.	2/0	8.75/2.34
Extra 15		You might not always stay on track. Keep trying, no matter what. It IS possible to make changes in your diet Si activity!	1.75/0.5	8.0/2.34
Extra 16		Way to go! You just finished your first week in Get FIT!	1.5/1	8.67/1.53
Extra 17		One month in Get FIT! Keep up the great work. Try a new fruit or vegetable this week.	1.5/1	8.6/1.67
Extra 18		You are Vi way through Get FIT. Reward yourself with a fun activity this week.	1.75/0.5	8.25/1.71
Extra 19		One week left in Get FIT. Make this your best week - you can do it!	1.75/0.5	9.0/1.73
Extra 20		Eating healthy is not about giving up something - it's about gaining health, energy 8i feeling good!	2/0	7.67/1.53

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Table 5

Edited text message bank.

Week/ Group	Positive (P)/ Constructive (C)	Message	Edited message (additions in italics, omits strike through)
Nutrition			
Week 1	P	[NAME], _day you met your goal of eating X vegetables. Awesome! [Infographic: AHA Fruits/Vegs Portions]	[None] OMIT
	C	[NAME], Yesterday, you ate _ servings of veggies. Try to add one more serving today. [Infographic: AHA Fruits/Vegs Portions]	[NAME], Yesterday, so far today, you've ate eaten _ servings of veggies. Your goal is five servings a day. Try to add one more serving today.[AHA Fruits/Vegs Portions]
Week 2	P	[NAME], way to go! You met your calorie goal by consuming [X] calories _day. Many drinks can be high in calories. Check out this info sheet: [Infographic: AHA Sip Smarter]	[None] OMIT
	C	[NAME], _day, you consumed XXXX calories. That's more than your goal of XXXX calories. Be aware that many drinks can be high in calories. Check out this info sheet: [Infographic: AHA Sip Smarter]	[NAME], _day, you consumed XXXX calories. That's more than your goal of XXXX calories. OR way to go! Be aware. Did you know that many drinks can be high in calories? Check out this info sheet: [AHA Sip Smarter]
Week 3	P	[NAME], you're doing well! You stuck to your sugar goal by eating < _g of sugar. Keep it up! [Infographic: AHA Life is Sweet]	[None] OMIT
	C	[NAME], _day you ate _g of sugar. That's more than the recommendation (< 25 g women/36 men), You can do it! [Infographic: AHA Life is Sweet]	[NAME], _day you ate _g of sugar. The recommended daily sugar amount is no more than 25 g (women)/36 g (men). You can do it! [AHA Life is Sweet]
Week 4	P	[NAME], _day you met your goal of eating X fruit servings.	[NAME], you've eaten X servings of fruit so far today. Your goal is
	C	Awesome! [Infographic: AHA Superfoods]	four servings of fruit each day._day you met your goal of eating X fruit servings. Awesome! OR You can do it! Did you know? "Superfoods" are full of nutrients and vitamins your body needs. [AHA Superfoods]
	C	[NAME], you are one step away from meeting your goal of eating X fruits. Today try adding a new superfood. [Infographic: AHA Superfoods]	[None] OMIT
Week 5	P	[NAME], you rock! _day you ate < _g of fat. AHA recommends 11–13 g per day. Foods that are steamed, broiled, baked, grilled, poached, or roasted are lower in fat. [Infographic: AHA Fats]	[NAME], you rock! _day you ate _g of fat. AHA recommends 11–13 g per day. Keep it up! OR You can do it! Did you know that steamed, baked, grilled, or roasted foods are lower in fat? [AHA Fats Infographic]
	C	[NAME], yesterday you ate X g of fat; AHA recommends 11–13 g per day. Don't fry-give healthy cooking a try! Baking, steaming, grilling, roasting, braising, sauteing, and stir-frying are all healthier ways. [Infographic: AHA Fats]	[None] OMIT
Week 6	P	[NAME], way to stay on track! Check out this guide to eat smart! [Infographic: AHA Eat Smart]	[None] OMIT

Week/ Group	Positive (P)/ Constructive (C)	Message	Edited message (additions in italics, omits strike through)
	C	[NAME], check out this guide to help you eat smart and stay on track: [Infographic: AHA Eat Smart]	[NAME], so far _day you've eaten X calories. Your daily calorie goal is X. Here is a guide to further help you understand nutrition labels, check out this guide to help you eat smart and stay on track: [AHA Eat Smart Infographic]
Week 7	P	[NAME], way to eat those veggies! _dayyou met your goal of 5–6 servings of veggies. Keep it up:) [Infographic: Healthier Salad]	[NAME], way to eat those veggies! _day you met _day you ate X servings of veggies. Your goal is five servings of veggies each day. Keep it up:) OR Almost there! Check out this guide to making a healthier salad. [Healthier Salad infographic]
	C	[NAME], you are one step away from meeting your goal of eating X servings of veggies. Today try a healthy, hearty salad. [Infographic: Healthier salad]	[None] OMIT
Week 8	P	[NAME], you're making healthy choices! By eating X calories _day, you are committed to your goal of X! Continue to avoid processed foods. [Infographic: AHA Processed foods]	[NAME], by eating X calories _day, you are committed to your goal of X! Continue to avoid processed foods. You've eaten X calories _day. Your goal is X calories per day. You're making healthy choices! OR Le's work on making healthier choices. Here's some info on processed foods. [AHA Processed foods infographic]
	C	[NAME], _day you were over your calorie goal by X. Calories are usually higher in processed foods. Check this out:[Infographic: AHA Processed Food]	[None] OMIT
Week 9	P	[NAME], you are committed! You ate X g of sugar _day. That's X days in a row that you've met your goal. Stay strong! [Infographic: AHA Cut out Added Sugar]	[NAME], _day you ate X calories; your goal is X calories each day. Foods with a lot of sugar (more than 25-36 grams) are usually higher in calories. [AHA Cut out Added Sugar]
	C	[NAME], you ate more than X g of sugar _day. Try to cut out added sugars. [Infographic: AHA Cut out added sugar]	[None] OMIT
Week 10	P	[NAME], fantastic! You ate X servings of fruit _day! Woohoo! [Infographic: AHA Eat more color]	[None] Omit
	C	[NAME], you ate _ servings of fruits. Try to add one more serving today. [Infographic: AHA Eat more color]	[NAME], ¥ester_day, you ate _ servings of fruit. Your goal is four servings of fruit per day. Awesome! OR Try to add one more serving today. Here are some ideas: [AHA Eat more color infographic]
Week/ Group	Positive (P)/ Constructive (C)	Message	Edited message (additions in italics, omits strike through)
Week 11	P	[NAME], you rock! _day you consumed <_g of fat. Here are some tips for managing how much fat you eat: use 1% or skim milk instead of 2% or whole; use cooking spray or olive oil instead of butter; choose the fruit cup as a side instead of french fries.	[NAME], _day you consumed <_g of fat. Your goalis 1113 grams of saturated fat per day. Here are some ways to get more of the "good" fats: [4Ways infographic]
	C	[NAME], you've got this! Today's goal: _g of fat (or less). Try a healthy swap! Use 1% or skim milk instead of 2% or whole; cooking spray or olive oil instead of butter; choose a fruit cup as a side instead of french fries.	[None] OMIT

Week/ Group	Positive (P)/ Constructive (C)	Message	Edited message (additions in italics, omits strike through)
Week 12	P	[NAME], keep it up! Check out this guide to healthy eating: [Infographic: AHA eat clean]	[None] OMIT
	C	[NAME], check out this guide to help you make healthy choices: [Infographic: AHA Eat Clean]	[None] OMIT
Exercise/physical activity			
Week 1	P	[NAME], great job yesterday/today/_day! You exercised for XX minutes doing [enter activity]. Keep up the good work & ask someone to join you tomorrow. [Infographic: CDC recs]	[None] OMIT
	C	[NAME], -day you were active for X minutes; your goal is X minutes. Almost there! Ask someone to join you on a walk today. [Infographic: CDC recs]	[NAME], day you were so far this week, you've been active for X minutes; your weekly goal is X minutes. Almost there! You can do it! OR Awesome! People are more likely to be active if they feel supported by others. Maybe you can ask someone to join you on a walk today. [CDC PA guidelines infographic]
Week 2	P	[NAME], yesterday you met your activity goal! Way to go! Try to divide your time into 2 or 3 segments of 10-15 min a day. [Infographic: AHA Move More]	
	C	[NAME], you were active X minutes so far this week. Try to divide your time into 2 or 3 segments of 10-15 min a day, so it doesn't feel overwhelming. [Infographic: AHA Move More Info]	[NAME], you were you've been active X minutes so far this week; your weekly goal is XX. The CDC recommends gradually increasing the number of minutes you're active each day to reduce injury risk. [Move More Info]
Week 3	P	[NAME], you met your activity goal _day! Awesome! Not every	[NAME], you met your activity goal _day! Awesome! You've been
		day will be perfect; if you miss a day or a workout, don't worry	active for X minutes so far this week; your goal this week is XX
		about it. Focus on what you will do tomorrow. Every move	minutes. You can reach your goal! OR Awesome! Not every day
		counts! [Infographic: Make Every Move Count]	will be perfect; if you miss a day or a workout, don't worry-about it] focus on what you will do tomorrow. Every move counts! [NIH No more excuses info]
	C	[NAME], it looks like you missed yesterday's goal. Not every day is perfect; if you miss a day or a workout, don't worry about it. Focus on what you will do tomorrow. Every move counts! [Infographic; Make every Move Count]	[None] OMIT
Week 4	P	[NAME], you logged X minutes of activity _day! Keep it up! Here are other ways to get active: yard work, lift weights, use resistance bands during TV commercials, go for a walk after dinner, dance to your favorite music.	
	C	[NAME], you almost met your activity goal _day! Keep it up! Here are other ways to get active: yard work, lift weights, use resistance bands during TV commercials, go for a walk after dinner, dance to your favorite music.	
Week 5	P	[NAME], great job _day- you met your activity goal of X minutes! Remember to stay safe when you're active. Use sunscreen, reflectors, or lights in the evening/at night, wear comfortable shoes, and stay hydrated!	

Week/ Group	Positive (P)/ Constructive (C)	Message	Edited message (additions in italics, omits strike through)
	C	[NAME], _day you logged X minutes of activity minutes; almost there! Remember to stay safe when you're active. Use sunscreen, reflectors, or lights in the evening/at night, wear comfortable shoes, and stay hydrated!	
Week 6	P	[NAME], you met yesterday's goal! Great job! Don't let the weather get in your way. Too cold? Look for activities indoors like walking around an indoor shopping center, a fitness class, or video online in your home. Too hot? Be active in the morning, walk around an indoor shopping center, try swimming, or a walk on the beach.	
	C	[NAME], it looks like you missed yesterday's goal. Don't let the weather get in your way. Too cold? Look for activities indoors like walking around an indoor shopping center, a fitness class, or video online in your home. Too hot? Be active in the morning, walk around an indoor shopping center, try swimming, or a walk on the beach.	
Week 7	P	[NAME], yesterday you were active X minutes. Way to go! Think being active has to cost a lot? Many activities are free, like walking, jogging, and hiking. Check out the library, community center, or go online for low-cost or free activities.	
	C	[NAME], yesterday you were active X minutes; almost there! Think being active has to cost a lot? Many activities are free, like walking, jogging, and hiking. Check out the library, community center, or go online for low-cost or free activities.	
Week/ Group	Positive (P)/ Constructive (C)	Message Edited message (additions in italics, omits strike through)	
Week 8	P	[NAME], you met your activity goal yesterday! Try to be active at the same time each day to help the routine stick.	
	C	[NAME], you almost met your activity goal yesterday. Try to be active at the same time each day to help the routine stick.	
Week 9	P	[NAME], _day you were active for X minutes and met your goal. Awesome! If your energy levels get low, try these tips: [Maintain Energy infographic]	
	C	[NAME], you need X more minutes of activity to meet your goal this week. You can do it! If your energy levels get low, try these tips: [Maintain Energy infographic]	
Week 10	P	[NAME], _day you were active for X minutes and met your goal. Awesome! Here are some ways to stay active: take the stairs instead of the elevator; park a little farther away from the entrance to get some extra steps in today; get up and move during TV commercials or breaks.	
	C	[NAME], _day you were active for X minutes; X more to go this week! Here are some ways to increase your activity; try to take the stairs instead of the elevator; park a little farther away from the entrance to get some extra steps in today; get up and move during TV commercials or breaks.	
Week 11	P	[NAME], you have been active X days in a row! Being physically active adds years to your life. Keep it up!	
	C	[NAME], you didn't meet your activity goal yesterday. Being physically active adds years to your life. You can do it!	
Week 12	P	[NAME], you met your activity goal! When you are active, you sleep better, have more energy, are more flexible, reduce your stress, lower your blood pressure, more self-confidence, and a better mood. Way to go!	

Week/ Group	Positive (P)/ Constructive (C)	Message	Edited message (additions in italics, omits strike through)
	C	[NAME], i's not too late; you can still meet your activity goal. When you are active, you sleep better, have more energy, are more flexible, reduce your stress, lower your blood pressure, gain self-confidence, and a better mood. Go for it!	
Compliance/motivation			
Week 1		[NAME], remember to record all the food and drinks you have today.	
Week 2		[NAME], you're doing well! You've recorded three days of food in a row!	
Week 3		[NAME], you recorded 24 days of food this month! You're entered in this month's lottery!	
Week 4		[NAME], oops! You didn't record any food yesterday. Is everything okay? For assistance, contact study staff at X.	
Week 5		[NAME], you've recorded three days in a row! You're making progress–keep it up!	
Week 6		[NAME], you didn't record any activity yesterday. Is everything okay? If you're having difficulty with anything, contact study staff at X.	
Week 7		[NAME], we haven't seen you in a while. Don't forget to wear your Fitbit every day, so you get credit for all your activity.	
Week 8		[NAME], it looks like you missed your activity yesterday. Remember to wear your Fitbit each day and keep it fully charged.	
Week 9		Happy birthday, [ENTER PARTICIPANT'S NAME]! We hope you have a great day! - Get FIT research staff @UCI	
Week 10		Happy holidays, [ENTER PARTICIPANT'S NAME]! Get FIT research staff @UCI	
Week 11		Happy Independence Day!	
Week 12		Happy Memorial Day!	