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Remote Dietary Counseling Using Smartphone Apps in Patients with Stages 1-3a Chronic Kidney Disease: a Mixed Methods Feasibility Study

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Abstract

Objective: While healthy dietary patterns are associated with decreased mortality in patients with chronic kidney disease (CKD), few patients receive dietitian counseling due to concerns such as dietitian availability, travel distance and cost. Our objective was to determine the feasibility of dietary smartphone app-supported tele-counseling to reduce sodium intake and improve dietary quality in patients with early CKD.

Methods: This was a pre-post, mixed methods feasibility study of 16 patients with stage 1-3a CKD in central/northeast Pennsylvania. Patients recorded and shared dietary data via smartphone apps with registered dietitians, who used motivational interviewing to provide telephone counseling weekly for 8 weeks. Seven patients were assigned to a customized study-specific app and 9 patients to a commercially-available, free app (MyFitnessPal). Participant satisfaction was assessed via survey, and participants were invited to complete a semi-structured interview. Outcomes assessed included sodium intake, Healthy Eating Index (HEI)- 2015 score, weight, and 24-hour blood pressure (BP).

Results: Mean age was 64.7 y, 31% were female, 100% were white, 13% had income <\$25,000. Adherence was excellent with 14 (88%) entering dietary data at least 75% of total days. Patients

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Data Statement:

Research data are available upon request.

reported high satisfaction with the intervention and dietitian tele-counseling. Use of dietary apps was viewed positively for allowing tracking of sodium and energy intake although some participants experienced functionality issues with the customized app that were not generally experienced by those using the commercially-available free app. Sodium intake (−604 mg/d, 95% CI: −1104, −104), HEI-2015 score (3.97, 95% CI: 0.03, 7.91), weight (−3.4, 95% CI: −6.6, −0.1), daytime systolic BP (−5.8, 95% CI: −12.1, 0.6), and daytime diastolic BP (−4.1, 95% CI: −7.9, −0.2) improved after the intervention.

Conclusions: An app-supported tele-counseling program with a registered dietitian appears to be a feasible and well-accepted strategy to improve dietary quality and improve cardiovascular risk factors in patients with early kidney disease.

Keywords

sodium; diet; smartphone app; telephone counseling; chronic kidney disease; mobile health

Introduction:

High sodium intake and consumption of Western-style diets are associated with increased risk of chronic kidney disease (CKD)(1-3), and healthy dietary patterns are associated with decreased mortality in patients with CKD(4). Reducing sodium intake may lower blood pressure and albuminuria (5-9), and is associated with decreased risk of cardiovascular disease (10-12). Despite strong evidence that diet exerts a significant effect on kidney and cardiovascular health, the vast majority of patients in the United States who develop end-stage kidney disease (ESKD) do not receive dietitian counseling prior to ESKD onset (13, 14). Potential reasons may include lack of availability of services of registered dietitian nutritionists (RDNs), patient concerns about travel time, lack of patient or provider knowledge about potential benefits, physician inertia, and inconsistent coverage by non-Medicare payers(15, 16).

While dietetic consultations in primary care settings appear to be effective for improving diet quality, glycemia, and weight loss, there is a lack of evidence that they improve blood pressure—a key cardiovascular and kidney risk factor(17). One challenge for current dietetic practice is the time-consuming nature of obtaining diet histories, either during an interview or by paper-based dietary record. Wide adoption of smartphones and easy access to free dietary apps could provide an opportunity to improve adherence to food intake monitoring (18). However, quality of dietary apps is variable(19), and there is limited evidence that self-directed use of dietary apps can help facilitate dietary change and improvements in health outcomes (20-24). Combined strategies that utilize dietary apps in conjunction with dietitian counseling may be beneficial.

The main aim of our study was to test the feasibility and acceptability of a 2-month remote dietary counseling program that consisted of weekly telephone calls with a licensed RDN and daily dietary entry using smartphone app technology. We also examined the pre-post change in dietary sodium intake, dietary quality, weight, 24-hour ambulatory blood pressure, and albuminuria.

Theoretical Framework

Two theoretical frameworks informed this learning and behavior change program. According to the situated learning theoretical perspective, situated learning encompasses activities, experiences, contextual variables, and multiple ways of knowing including cognitive, relational, embodied, visual, and non-verbal, and sensory modes of knowing(25). In this study, patients were continually learning how to shop, choose, cook, and eat food from the grocery store, restaurant, or other food environment and interact with dietitians about food decisions. From a behavior change perspective, we used Carver and Scheier's control systems(26). In their psychological framework, human behavior is a "continual process of moving toward, and away from, various kinds of mental goal representations, and this movement occurs by a process of feedback control." This theory assumes that people take up goals, form intentions, and try to realize these goals and intentions through actions. Therefore, our approach emphasized dietary goal-setting, with guidance from the RDN using motivational interviewing skills to establish strategies to realize these goals.

Methods

Overview

A mixed methods study was designed to evaluate the feasibility of a study-specific app versus a widely- adopted commercial app as an adjunct to remote dietary counseling over an 8-week period with a RDN. Objective quantitative measures were used to evaluate change in sodium intake, app utilization, and participation in telephone counseling sessions while both quantitative and qualitative methods were used to evaluate patient satisfaction with the intervention components (RDN counseling, app, website, text messages, emails). Discussions with the Geisinger Kidney Patient Advisory Council and the Geisinger Patient Advisory Council for Obesity helped inform the design of the program. Key components included an educational website (topics included food label reading, strategies to decrease sodium intake and eat a healthful diet, goal setting, relapse management, etc.); 15-20 minute weekly telephone counseling sessions by RDNs who used motivational interviewing skills to guide participant problem solving and goal setting (RDNs also received regular coaching sessions to enhance motivational interviewing skills); use of a smartphone app for dietary monitoring that was shared with the RDN; daily educational messages about healthy lifestyles; and weekly messages to reinforce personalized goals for sodium intake and fruit/vegetable intake.

We tested two different smartphone apps in this study. For the first 7 patients, we collaborated with a technology company (Vibrent Health) to customize their health platform, based on discussion with other researchers involved in behavioral modification research using apps and the company's willingness to collaborate at a reasonable cost. This customization included a daily sodium tracker, a daily survey asking patients how many fruits and vegetable servings they consumed, daily healthy lifestyle tip messages, weekly goal targets for sodium and fruit/vegetable intake, and a patient-provider portal that enabled sharing of dietary data and messaging. Due to negative patient feedback about app functionality that was unable to be resolved with available resources, we decided to switch to a commercially-available, free software program (MyFitnessPal) for the latter 9 patients.

MyFitnessPal was chosen based on several dietitians' anecdotal experiences using the app with patients, field testing by our research team, and the fact that the app allows tracking and sharing of dietary data with others. Vibrent Health dietary and meal frequency data was downloaded after the research study; MyFitnessPal dietary and meal frequency data was recorded in a spreadsheet by a study dietitian weekly. Patients were asked to enter their dietary intake daily using the smartphone app assigned. The first week was devoted to collection of dietary data, 24-hour urine collections, and 24-hour dietary recalls. During weeks 2-8, they received weekly telephone calls by an RDN. This study was approved by the Geisinger Institutional Review Board (2015-0650).

Participants

This was a single-center study conducted at Geisinger Medical Center (Danville, PA) conducted from April- November 2016. We sought to enroll 15 participants who were at least 21 years of age, had a recent urine albumin/creatinine ratio ≤ 30 mg/g, eGFR ≥ 45 ml/min/1.73m², and blood pressure $<160/100$ mmHg. Exclusion criteria included recent cardiovascular event in the past 6 months, unstable angina, hypoglycemia episode in past 2 months, active treatment for malignancy, planned bariatric surgery, change in blood pressure medications in the past 2 months, uncontrolled diabetes (last A1c $\geq 9\%$), urine ACR $\geq 2,500$ mg/g, consumption of more than 14 alcoholic beverages per week, inability to understand English, $<1,500$ mg/d of sodium as assessed by a web-based sodium questionnaire (<http://archive.projectbiglife.ca/sodium/>) (27), and no smartphone or lack of a smartphone capable of running the apps.

Recruitment

Patients were recruited from a list generated from our electronic health record based on analytics that identified patients meeting inclusion criteria with a listed email address. We emailed a pre-notification email to 340 patients residing in zip codes within 20 miles of Geisinger Medical Center to reduce transportation burden, and attempted recruitment calls on 323 patients before enrollment was closed. Most common reasons for non-enrollment were lack of interest (n=176), not answering the telephone (n=60), and not owning a smartphone (n=48) (Figure 1). Participants provided informed consent, and then received technical assistance with regard to downloading and using the app on a smartphone, adjusting their app profile settings, and entering dietary data through the app. Participants also had the option of contacting research staff for additional assistance with the app by telephone or in-person if needed.

Procedures

Outcome measurements by 24-hour urine collection, 24-hour telephone dietary recall, 24-hour ambulatory blood pressure, and weight were completed during the baseline week and week 8 (Figure 2). We attempted to complete a total of three (2 weekday, 1 weekend day) 24-hour dietary recalls at each timepoint over the course of 1 week although we allowed up to 2 weeks to collect this data. Dietary recalls were administered by the Johns Hopkins Institute for Clinical and Translational Research Nutrition Core using the US Department of Agriculture Multiple Pass Method; we excluded participants who had only one 24-hour dietary recall at one of the timepoints from analyses using dietary data(28). Sodium

excretion was assessed by the mean of two 24-hour urine collections. Participants were asked to repeat 24-hour urine collections if they collected <20 or >28 hours of urine, and urine collection data were corrected for a 24-hour period. Ambulatory blood pressure monitoring was completed for 24-hours using Spacelabs OnTrak device, with an appropriately-sized cuff applied at the time of the baseline and 8-week research visit.

To encourage adherence with dietary data entry, participants could receive weekly virtual lottery tickets for two \$100 gift certificates if they entered at least 5 days of dietary data with 3 eating occasions (breakfast, lunch, dinner, snacks). Participant satisfaction was examined at the end of the study via survey created by the research team (Supplemental Item 1). After evaluating survey responses, we invited participants to complete a semi-structured interview if they scored high or low on the satisfaction survey for a deeper understanding of what participants viewed as benefits and challenges regarding the apps and RDN counseling calls. Semi-structured interview questions ranged from questions about their use of study materials, their familiarity and comfort level with smartphone apps and accessing health information, and their experiences with the app, the website, and dietitian tele-counseling.

Analytic Considerations

Sample size for this study was calculated based on a previous lifestyle intervention study in which the standard deviation in self-reported sodium intake was 1300 mg/d(29). At an alpha of 0.05, we anticipated that a sample size of 15 participants would result in >80% power to detect a 1300 mg (28%) decrease in sodium intake from baseline.

Co-primary outcomes of this pilot study were difference in sodium intake and excretion from baseline to end of intervention. Other outcomes examined included the Healthy Eating Index-2015 score(30), 24-hour urine albumin, weight, 24-hour systolic and diastolic blood pressure, daytime systolic and diastolic blood pressure, and nighttime systolic and diastolic blood pressure.

We used mixed effects models, allowing intercepts to vary by participant, to examine outcomes. We also examined whether changes in dietary outcomes varied by app assignment, and conducted sensitivity analyses to reduce the impact of potentially unreliable 24-hour urine collections by excluding participants with >30% coefficient of variation (CV) for 24-hour creatinine excretion(31). All analyses were performed using STATA/MP 15.1.

Results

Of the 16 patients enrolled in the trial, average age was 64.7 years (range 48-86), 31% were female, 100% were non-Hispanic whites, 32% had a college degree, and 50% had income \$75,000 (Table 1). Prevalence of comorbidities was common including hypertension (81%), diabetes (69%), hyperlipidemia (63%), atherosclerotic cardiovascular disease (31%), and depression/anxiety (13%). A total of 12 (75%) participants completed at least two 24-hour dietary recalls both at baseline and 8 weeks, 15 (93.8%) participants completed 24-hour urine collections at baseline and 8 weeks, and all 16 participants completed weight and 24-hour ambulatory blood pressure measurements.

Adherence

Overall, adherence with food tracking using both apps was excellent. Among the 7 Vibrent users, all participants logged at least 75% of the total days, and 5 participants entered complete dietary data >98% of the days. Among the 9 MyFitnessPal users, 7 participants entered complete dietary data at least 75% of the total days with the other two entering complete dietary data 50% and 32% of the time. Dietary data entry remained consistent across the course of the intervention (Figure 3). Adherence with weekly RDN phone calls was also excellent overall (10 completed 7 calls, 4 completed 6 calls, 1 completed 4 calls, 1 completed no calls).

Changes in Sodium Intake and HEI Score

In the 12 participants with 24-hour dietary recall data, sodium intake decreased by 604 mg/d (95% CI: -1104, -104; $p=0.02$). In the 15 participants with 24-hour urine data, there was no significant change in 24-hour urine sodium (21 mg/d; 95% CI: -623, 665; $p=0.95$) (Table 2). In sensitivity analyses excluding patients with high CV of 24-hour urine creatinine ($n=2$), results were similar (63 mg/d; 95% CI: -844, 626). Mean HEI-2015 score improved by 3.97 points (95% CI: 0.03, 7.91; $p=0.05$). Components of the HEI-2015 that improved were fruit and vegetable intake categories whereas the dairy score component tended to worsen. There were no significant changes in red meat intake (-0.79 g, 95% CI: -1.89, 0.31; $p=0.16$) or processed meat intake (-0.09, 95% CI: -0.54, 0.35; $p=0.68$). Results for change in sodium intake, sodium excretion, and total HEI-2015 score were similar for Vibrent users and MyFitnessPal users ($p>0.6$ for all interaction terms).

Changes in Weight, Ambulatory Blood Pressure, and Albuminuria

Mean weight decreased by -3.4 lbs (95% CI: -6.6, -0.1; $p=0.04$) (Table 3). There was a trend towards improvements in daytime SBP (-5.8, 95% CI: -12.1, 0.6; $p=0.08$), daytime DBP (-4.1, 95% CI: -7.9, -0.2; $p=0.04$), nighttime SBP (-4.3, 95% CI: -10.4, 1.9; $p=0.18$), and nighttime DBP (-2.3, 95% CI: -5.9, 1.4; $p=0.20$). No change in 24-hour urine albumin excretion was observed (-22.2, 95% CI: -79.9, 35.6; $p=0.5$). No changes in blood pressure medications occurred in any patient over the 8-week period.

Satisfaction

For the statement, "I was satisfied with the FitKidney research study", patients expressed high satisfaction (mean 1.2, SD 0.4, 1=strongly agree on 1-4 Likert scale), and universally agreed that they learned to eat healthier by participating in the study (mean 1.0, SD 0). For the statement, "I was satisfied with the smartphone app", responses were mixed with lower satisfaction with Vibrent (4 somewhat disagree, 2 somewhat agree, 1 strongly agree) and high satisfaction with MyFitnessPal (5 strongly agree, 4 somewhat agree).

Semi-structured interviews were conducted with 8 participants; however, given the observation of high satisfaction, there was limited variability in the qualitative data which limits analytical insights. The apps were generally viewed as beneficial for the ability to provide feedback regarding sodium and energy intake although Vibrent users identified functional challenges such as crashes, difficulty in finding foods, water, and utilizing features like barcode scanners. These were not widely observed as challenges among users

of the commercial app, MyFitnessPal. In general, the participants valued RDN counseling calls however, convenience in scheduling and integrity with schedule adherence are important when implementing this strategy (Table 4).

Discussion

This study demonstrates the feasibility of using smartphone dietary apps and tele-counseling in patients with early CKD, ranging in age from 48 to 86 years, in a rural setting. Patients entered dietary data routinely and completed most of the phone calls while reporting high satisfaction with the research study and telephone counseling. We observed a significant reduction in dietary sodium intake by an average of 22% ($p=0.02$), and trends towards improvements in HEI-2015 score, 24-hour systolic and diastolic BP, and reduced weight after the 8-week intervention.

There were some important differences between the customized (Vibrent) app and the commercially- available, free app. Customization allowed us to include helpful features such as the sodium tracker, automated goal setting based on the previous weeks' entries, and daily messages embedded within the app. It is possible these features may have contributed to the excellent adherence we observed with dietary data entry. Drawbacks of the Vibrent app included more user errors and system crashes, as well as the cost of customization. By contrast, the MyFitnessPal app was free, elicited higher patient satisfaction and fewer complaints about errors. However, use of MyFitnessPal required manual review of data by our dietitians to determine weekly sodium, fruit and vegetable totals that we used to help guide goalsetting. Regardless, we found that patients using either app experienced similar improvements in dietary quality and clinical outcomes.

Our findings provide further support that telephone counseling aided by dietary apps is feasible and may be useful in facilitating improvement in sodium reduction, dietary quality, and clinical outcomes, although data remain limited(23, 24, 32). In a trial conducted at 4 hospitals in the Netherlands, 151 patients with CKD were randomized to usual care vs. a multifaceted intervention that included education, motivational interviewing (in-person and by telephone), and self-monitoring of blood pressure, dietary intake, and sodium excretion vs. usual care(32). This intervention significantly reduced sodium excretion, daytime diastolic blood pressure, and proteinuria at 3 months, although these improvements were attenuated at 6 months.

Interestingly, we found a significant effect on sodium intake assessed by multiple dietary recalls, but no effect on 24-hour urine sodium, which could possibly be related to collection error. While 24-hour urine sodium has been considered the gold standard for assessing sodium intake, 24-hour urine collections are prone to errors with collection. In a study of Russian cosmonauts on fixed levels of sodium intake under metabolic ward conditions, Rakova et al. described considerable day-to-day variation in sodium excretion following circaseptan (weekly) rhythmicity, correlating inversely with aldosterone and directly with free cortisol excretion(33). In this study under optimal research conditions, collection of 3 consecutive 24-hour collections resulted in just 75% accuracy in classifying a 575mg difference in sodium intake(34).

There were several limitations in this pilot study. We collected baseline 24-hour urine sodium and 24-hour dietary recall data during the first week of the study while patients started to use the smartphone app to enter dietary data. This may have affected patient behavior and resulted in lower baseline sodium intake or excretion. However, the multiple 24-hour dietary recalls and 24-hour urine collections were a strength in our study capturing dietary sodium and dietary quality intake in a comprehensive fashion. One quarter of the patients in our study did not have baseline albuminuria on their 24-hour urine collections, likely due to high day-to-day variability of albuminuria, regression to the mean, and the fact that we did not require repeat confirmation albuminuria testing. While adherence was excellent in our study, the use of modest lottery prizes (two \$100 gift certificates) may have increased adherence to dietary data entry. Further, we were unable to determine the individual contributions of the tele-counseling, the educational website, or the smartphone apps, in achieving improvements in the outcomes. Lastly, our study population was limited to mostly white, fairly well-educated males in a rural area. Additional research is needed to examine generalizability of these findings to minorities and individuals with low literacy.

Practical Application:

We found that use of smartphone apps in conjunction with remote RDN telephone counseling was feasible and well-accepted although additional research in more diverse populations is needed. Participation in the program was associated with improved sodium intake assessed by multiple dietary recall and improvements in HEI-2015 score, ambulatory blood pressure, and weight. Future randomized trials in urban and rural settings are needed to test the efficacy of dietary app-supported tele-counseling.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Figure 1.
Participant Flow

Figure 2.**Study Design**

Abbreviations: BP (24-hour blood pressure), U1 (1st 24-hour urine collection), U2 (2nd 24-hour urine collection), DR1 (1st 24-hour dietary recall), DR2 (2nd 24-hour dietary recall), DR3 (3rd 24-hour dietary recall), C (call from dietitian)

Figure 3.

Adherence with Dietary Data Entry during the Study

Mean adherence with dietary data entry for each week is shown for Vibrent and MyFitnessPal users.

Table 1.

Baseline Characteristics

Age	64.7 (range 48, 86)
Female	5 (31)
White	16 (100)
Highest education level	
High school	6 (38)
Some college or trade school	5 (31)
College degree	5 (31)
Income	
<\$25,000	2 (13)
\$25-50,000	4 (25)
\$50-75,000	2 (13)
\$75,000+	8 (50)
Employment status	
Full-time	6 (38)
Part-time	3 (19)
Retired	6 (38)
Disabled	1 (6)
Smoking status	
Current	1 (6)
Former	7 (44)
Never	8 (50)
Hypertension	13 (81)
Diabetes	11 (69)
Dyslipidemia	10 (63)
BMI, kg/m ²	34.2 (5)
24-h SBP, mmHg	140.1 (11)
24-h DBP, mmHg	80.9 (7)
eGFR, ml/min/1.73m ²	76.2 (16)

Note: Values for categorical variables are given as count (proportion); values for continuous variables are given as mean $\pm$ SD.

Abbreviations: BP, blood pressure; BMI, body mass index; SBP, systolic blood pressure; DBP, diastolic blood pressure; eGFR, estimated glomerular filtration rate.

Table 2.

Changes in Mean Sodium Intake, Red Meat, and HEI-2015 Score

	Baseline (SD)	8-wk (SD)	Change (95% CI)	P value
Sodium intake^a, mg/d	2746 (1140)	2144 (844)	−604 (−1104, −104)	0.02
24-h urine sodium^b, mg/d	3269 (1727)	3290 (1654)	21 (−623, 665)	0.95
Red meat, g/d	3.05 (1.54)	2.26 (1.34)	−0.79 (−1.89, 0.31)	0.16
Processed meat, g/d	0.89 (0.60)	0.79 (0.55)	−0.09 (−0.54, 0.35)	0.68
HEI-2015 total score^a	57.99 (9.97)	61.96 (9.57)	3.97 (0.03, 7.91)	0.05
HEI-2015 component scores^a				
Total fruits	1.95 (1.40)	2.86 (1.82)	0.91 (0.68, 1.75)	0.03
Whole fruit	2.16 (1.76)	3.16 (1.60)	1.01 (−0.04, 2.06)	0.06
Total vegetables	3.67 (0.70)	4.20 (0.93)	0.53 (0.02, 1.04)	0.04
Greens and beans	1.29 (1.23)	0.80 (0.84)	−0.49 (−1.22, 0.24)	0.19
Whole grains	4.58 (3.00)	4.01 (2.64)	−0.57 (−2.30, 1.16)	0.52
Dairy	4.39 (1.94)	2.73 (2.40)	−1.66 (−2.82, −0.50)	0.01
Total protein foods	4.42 (0.95)	4.71 (0.51)	0.29 (−0.05, 0.62)	0.09
Seafood and plant proteins	1.72 (1.68)	2.33 (1.62)	0.61 (−0.21, 1.43)	0.14
Fatty acids	4.99 (2.29)	5.86 (2.86)	0.87 (−0.42, 2.15)	0.19
Refined grains	6.80 (2.23)	7.87 (1.80)	1.07 (−0.49, 2.62)	0.18
Sodium	7.51 (1.46)	7.72 (2.00)	0.22 (−1.13, 1.56)	0.75
Added sugars	8.26 (1.55)	8.64 (2.39)	0.38 (−0.63, 1.40)	0.46

^aN=12 patients with at least 2 dietary recalls at baseline and 8 weeks^bN=15 patients with 24-hour urine collections at baseline and 8 weeks

Table 3.

Changes in Weight, Ambulatory Blood Pressure, and Albuminuria

	Baseline (SD)	8-wk (SD)	Change (95% CI)	P value
Weight, lb	227.2 (33.0)	223.9 (33.8)	−3.4 (−6.6, −0.1)	0.04
Waist circumference, inch	50.1 (15.2)	46.2 (5.7)	−0.4 (−1.0, 0.2)	0.18
24-h SBP, mmHg	137.3 (11.5)	132.9 (14.9)	−4.3 (−10.2, 1.6)	0.15
24-h DBP, mmHg	78.7 (7.0)	75.7 (9.1)	−3.0 (−6.6, 0.6)	0.11
Daytime SBP, mmHg	140.1 (11.1)	134.3 (14.4)	−5.8 (−12.1, 0.60)	0.08
Daytime DBP, mmHg	80.9 (7.1)	76.8 (9.4)	−4.1 (−7.9, −0.2)	0.04
Nighttime SBP, mmHg	129.0 (16.5)	124.8 (18.1)	−4.3 (−10.4, 1.9)	0.18
Nighttime DBP, mmHg	72.4 (8.2)	70.2 (9.3)	−2.3 (−5.9, 1.4)	0.20
Albuminuria, mg/d	126.4 (208.6)	104.2 (117.8)	−22.2 (−79.9, 35.6)	0.45

Table 4.**Sample of Independent Quotes Regarding App Use and Registered Dietitian Nutritionists Counseling Calls**

App Use	
Benefits	
<p>"It was easy to locate the foods and what was I think was advantageous was that you could tell by what you entered how many calories or how much sodium. You could see all of the ... is there something here in this meal that made the calories and sodium so high and then what could you avoid." -Vibrent User</p> <p>"I thought it was a good tool and I what I liked in the app is it would give you the sodium level of the meal and then it'd give you a tally at the end of the day...it's realtime data throughout the day at the end of the day so you know where you're at. I thought that was pretty good, I like that." – Vibrent User</p> <p>"You got regular reminders and the links are right there so when you had the time that you could come back and click on it and take a look at it." -MyFitnessPal User</p> <p>"They didn't talk in medical terms that were over your head or try and make it unmanageable." -MyFitnessPal User</p>	
Challenges	
<p>"Last Sunday I had two crashes in one day. In one week, I think I had 5 or 6 crashes." -Vibrent User</p> <p>"I can't edit that single entry... I have to erase the whole meal, all five and then re-enter it." -Vibrent User</p> <p>"Custom meals were not very handy to use." -Vibrent User</p> <p>"I was not successful using the bar code scans." -Vibrent User</p> <p>"I could never input water that I drank. If I wanted to drink tea I could put it, but I could never input water for some reason." -Vibrent User</p> <p>"Finding certain foods may have been a challenge at times." -MyFitnessPal User</p>	
Registered Dietitian Nutritionist Counseling Calls	
Benefits	
<p>"It was a pretty good exchange of information. I'd ask questions and have some concerns and there were some things I didn't understand about food and why and the dietitian answered all of them. We had a weekly conversation. We talked about food and sodium levels of different food and different ways to reduce the sodium levels and all so it was a good rapport."</p> <p>"The phone calls were flexible as far as the time... It wasn't "this is the time and this is the only time."</p> <p>"I think that everything was pretty much personalized, yes...the dietician seemed to be...interested in me.."</p> <p>"... She did see what I'm eating and then could say, could tell me what could be improved."</p> <p>"I liked the fact that she took her time with me. That, you know, we discussed what we needed to discuss and if I had any questions...most of my questions I did when we did the phone calls. She also was very open and had suggestions for me as far as what I could do, what my goals would be, you know, setting my goals for the next week."</p> <p>"...they were flexible on their schedule to work around your schedule."</p>	
Challenges	
<p>"I've had sometimes somebody said they were gonna call on a Thursday and I didn't get a call until Friday afternoon. If you tell me you're gonna call at a certain time and I'm waiting for the call and I don't get it, I would get upset."</p> <p>"...the only thing is that I have a lifestyle that didn't fit with some things cause I am not home much and have a lot of kids or grandkids in games so we eat out more than we probably should."</p>	