

INTRODUCTION

On-line education tools are becoming increasingly popular yet the level of patient participation and the utility of these tools is unclear. The 30-day Phosphorus Challenge, a web-based tool open to the general public, is designed to educate kidney patients, family members, caregivers, and health care teams through phosphorus-related emails, games, educational content (articles, recipes, handouts, videos) and community board-based social interaction.

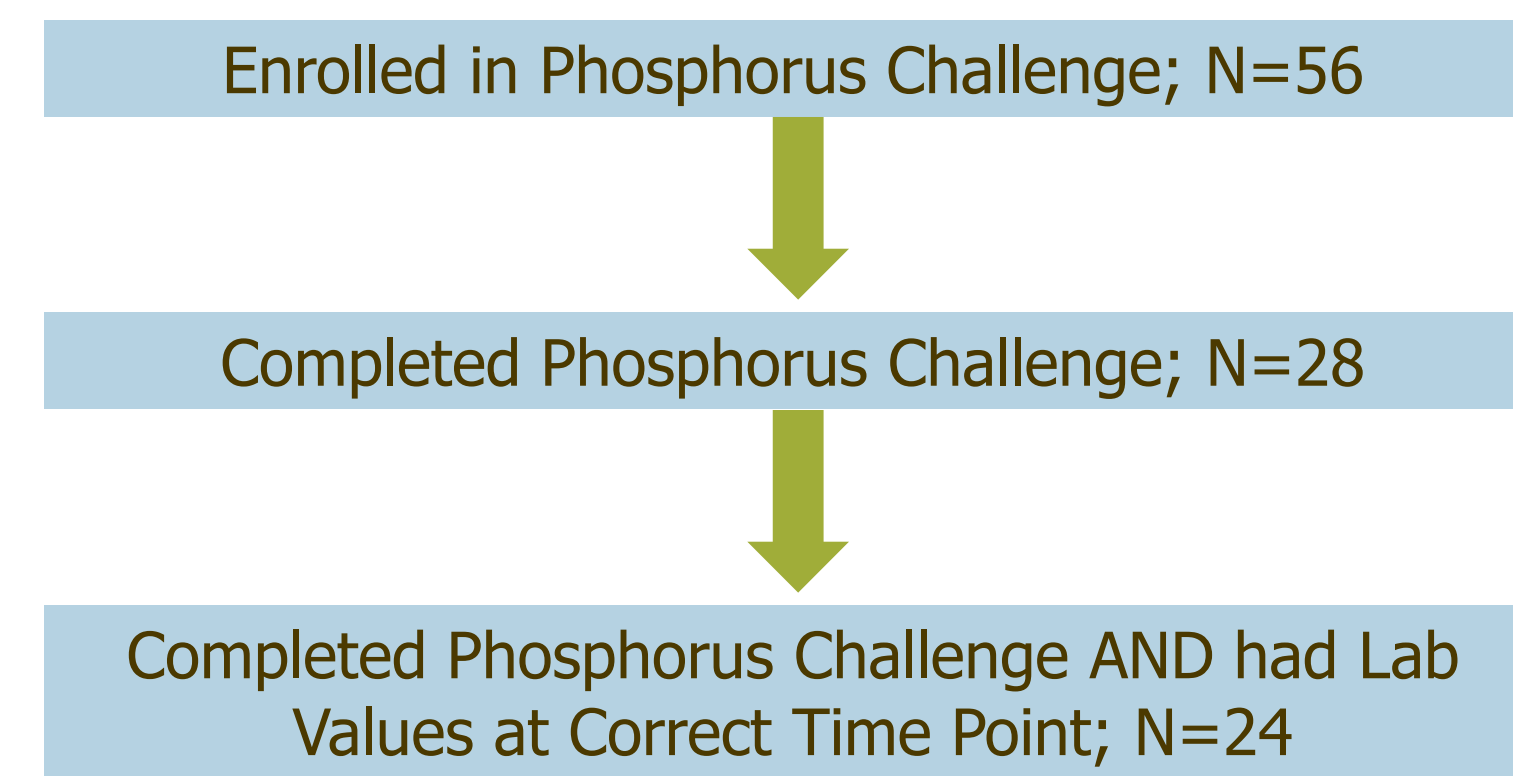
We evaluated the effectiveness of this interactive tool in increasing phosphorus knowledge and improving phosphorus control in dialysis patients.

METHODOLOGY

- Forty-three dialysis patients from 22 dialysis centers geographically spread across the US, enrolled in the Phosphorus Challenge Evaluation.
- A total of 24 (56%) completed the pre and post tests and had phosphorus lab values available for each time point.
- Differences between the pre and post period in correctly answered questions and phosphorus levels were assessed by paired t-test.

RESULTS

Figure 1. Study Design



Phosphorus Challenge Components

- 12 interactive games to learn about phosphorus while earning points
- 7 polls and quizzes
- Education articles and downloadable handouts
- Videos and low phosphorus recipes
- A community forum to post questions and interact with others

Figure 2. Phosphorus Challenge Games and Education Pages

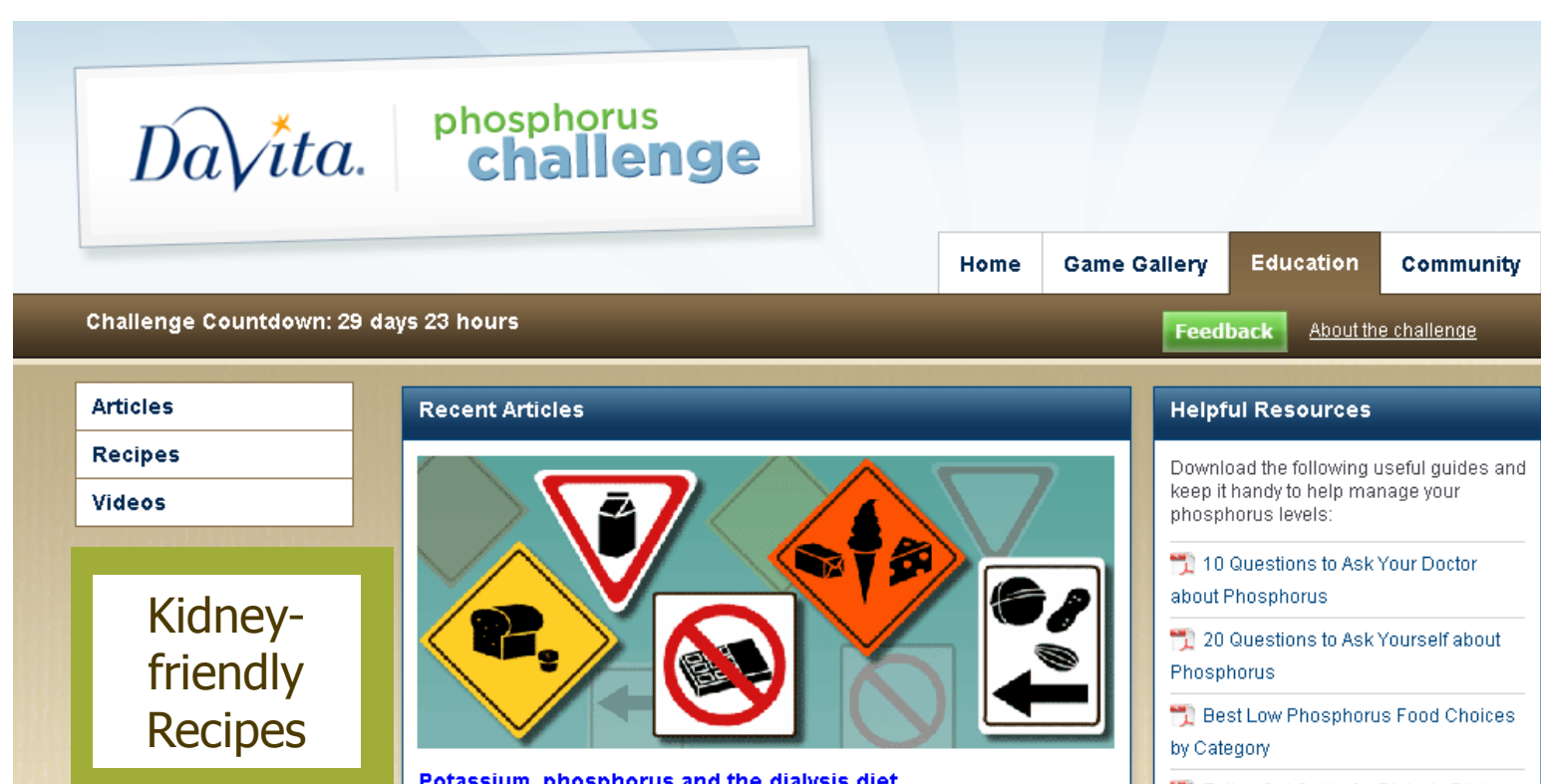


Table 1. Pre- and Post-challenge Results for Test Questions and Phosphorus Levels, n=24

	Mean Questions Answered Correctly	Phosphorus (mg/dL) Mean ± SD
Pre-challenge	4.2	5.93 ± 1.39
Post-challenge	5.0	5.73 ± 1.51
P-value		p=0.44 (95% CI: -0.72, 0.32)

Phosphorus Knowledge Test

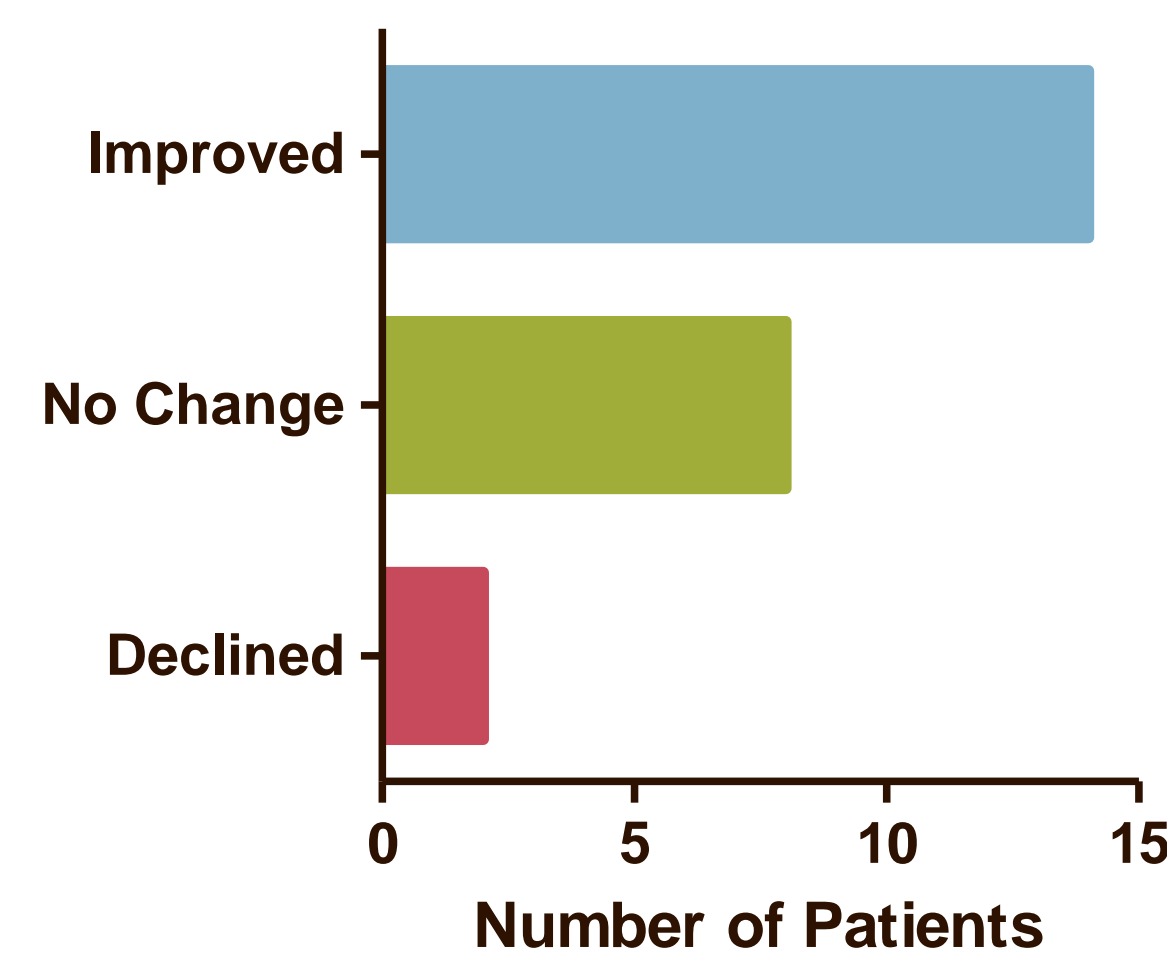


Figure 3. Change in Phosphorus Knowledge after Completion of the Phosphorus Challenge

Change in Serum Phosphorus

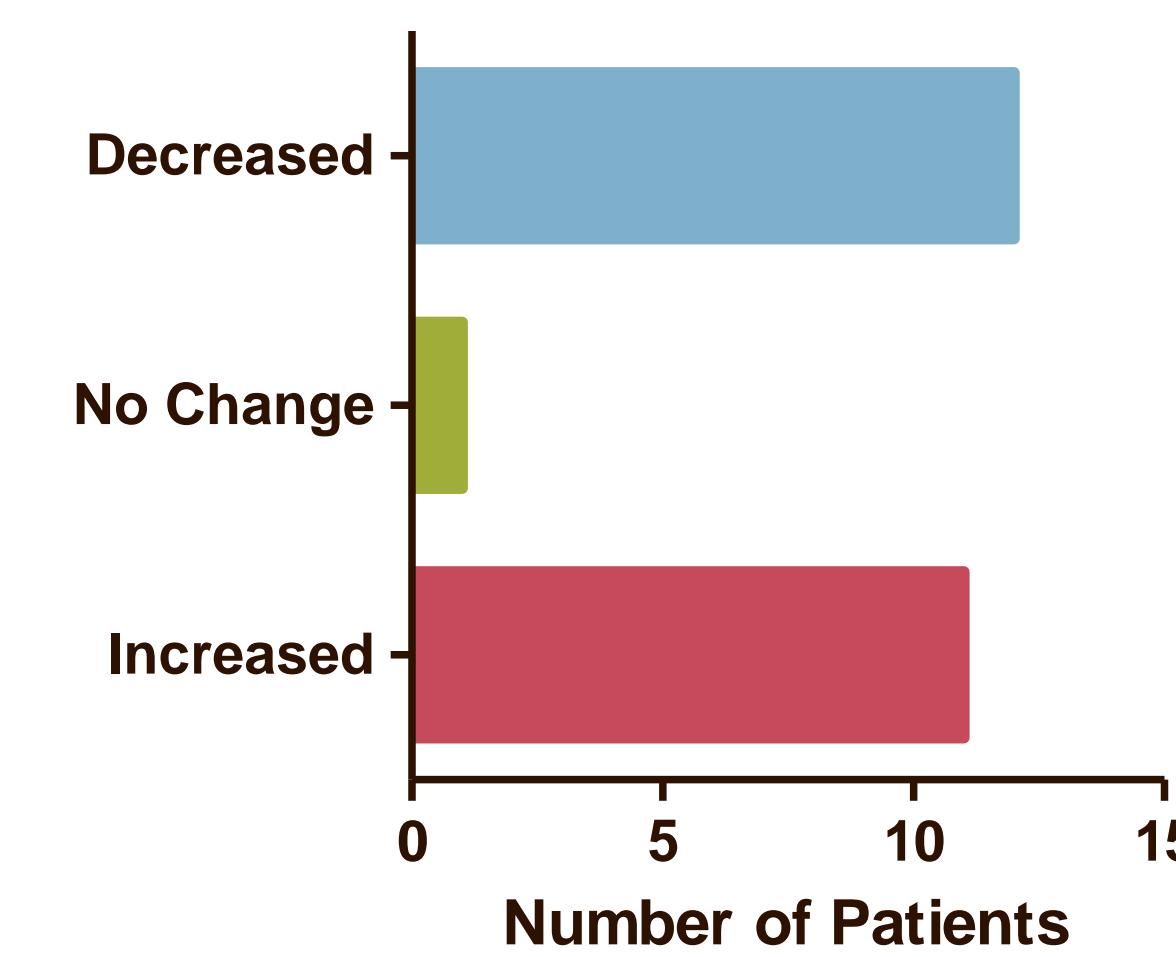


Figure 4. Change in Serum Phosphorus after Completion of the Phosphorus Challenge

SUMMARY of RESULTS

- On a test of 6 knowledge questions, these 24 patients got an average of 0.8 more questions right after the intervention (Table 1 and Figure 3).
- The mean phosphorus level change of -0.20 was not statistically significant in a paired t-test (Figure 4).
- 12 patients experienced declines in phosphorus levels, while 11 experienced an increase, and 1 was unchanged. Four of the patients with an increase from the pre-challenge level still maintained phosphorus below 5.5 mg/dL.
- In the post survey, over 75% felt they learned something about phosphorus and greater than 90% felt more confident about making lower phosphorus food choices after taking the challenge.

KEY LEARNINGS

- ✓ The Phosphorus Challenge had a positive impact on phosphorus levels and knowledge for approximately half of those who completed it, indicating this may be a useful tool for phosphorus improvement in some kidney patients.
- ✓ It will be important to understand the characteristics of patients who did benefit from the Phosphorus Challenge and how this unique, interactive tool can be modified so that all participants elicit a benefit.

Our sincere appreciation to the teammates in over 1600 DaVita clinics who work every day not only to take care of patients but also to ensure the extensive data collection on which our work is based. We thank DaVita Clinical Research® (DCR), and specifically acknowledge Karen Spach, PhD of DCR for her editorial contribution, in preparing this poster. DCR is committed to advancing the knowledge and practice of kidney care.

Correspondence: sara.carlson@davita.com
National Kidney Foundation, April 26-30, 2011, Las Vegas, NV