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The Effects of Text Message Reminder on Blood Donor Show Rate

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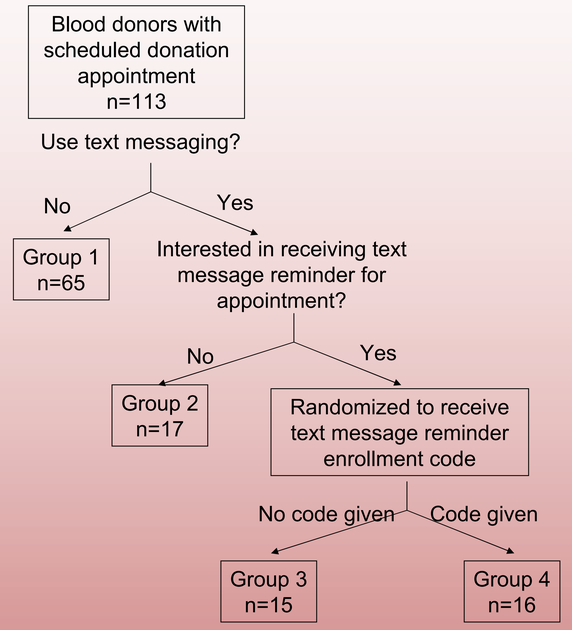
INTRODUCTION

Declining blood collection endangers the blood supply at a time when the health care system is requiring an increasingly greater amount of blood products (1). Blood donation centers are challenged to recruit and develop first-time donors into reliable repeat donors, thereby ensuring a sufficient blood supply (2). Communication strategies such as e-mail reminders have been shown to be an effective communications tool to promote blood collection (3). Alternatively, Text Messaging has been shown effective in primary care and preventative medicine. Text messaging improved patient compliance with a schedule of vaccine dosing (4), as well as improving patient attendance at outpatient clinics (5, 6). Additionally, text messaging reminders have been shown to be as effective as phone reminders in increasing patient attendance at outpatient appointments (7, 8). Finally, text messaging has been shown to be useful for managing self-care such as smoking cessation, monitoring asthmatic symptoms, and diabetes control. (9, 10, 11, 12). We investigated whether offering the use a text message reminder to donors would increase attendance at donation events, demonstrating that text messaging can be an effective tool in maintaining a pool of blood donors.

METHODS

The participants in this study were registered donors for the American Red Cross who were contacted to donate blood between October 5th and 19th at the Manchester, NH donation center. Donors who had scheduled appointments during these dates were placed into four groups (see flow chart).

•Those interested in a text message reminder were randomized via alternating every other donor into group 3 or group 4. In order to receive a text message reminder, the donors had to text a code to the messaging service. The text message reminder was sent the morning of the appointment. Donors in all groups received a telephone appointment reminder.



- Information regarding age, gender, and attendance was gathered from the Red Cross presenting donor list. The total number of participants that used the service was gathered.
- Differences in gender and show rate between groups were analyzed using Fisher's exact test was used. Differences in age was measured using Student's T Test. A p value of 0.05 was considered statistically significant.
- When designing the study, the literature showed an average of 10% change in attendance rate for medical appointments with the use of text message reminders. Using the criteria of a minimum attendance rate of 40%, a sample size of 400 for each arm of the study was desired.

RESULTS

	Group 1 (Do not use text)	Group 2 (no interest)	Group 3 (Code Not Given)	Group 4 (Code Given)	All
Participant Avg Age	51.5	42.3	45.5	40.2	47.8
Percent Female	52%	47%	47%	50%	50%
Show up rate	51.4%	29.4%	40.0%	56.2%	51.3%
Avg age of Donors	51.6	55.2	48.7	39.4	48.8
Percent of donors that were female	27.7%	11.8%	20%	18.8 %	23%
Avg age of no show Donors	51.4	36.5	40.6	40.4	45.0
Percent female no show	24.6%	35.3 %	26.7%	31.3%	27.4%

ADDITIONAL RESULTS

•42% (48/113) of donors use text messaging

•65% (31/48) of donors who are text messaging users were interested in receiving text reminders

•13% (2/16) of those interested in text message reminders actually opted in

•The data suggests that those who use text messaging are younger (Avg. age: 42.6 vs. 51.5, $p<0.001$) with no difference based on gender ($p>0.05$).

•No significant difference was found between donors who were allowed to use text messaging reminders (group 4) vs. those who were not (group 3, P=0.48, Fisher's exact test).

DISCUSSION

In our donor population, younger individuals are more likely to attend appointments based on a text reminder compared to an older population. Additionally, demographically older individuals have the highest attendance rate. This suggests that text message reminders may be more effective in improving appointment attendance in a younger population.

We also uncovered a trend showing that donors who received a number allowing them to receive text message reminders were more likely to donate blood than those that did not receive the number. A recalculation of sample size necessary to achieve statistical significance ($P<0.05$) if the above data was representative showed a sample size of 186 people in groups 3 an d 4 would be needed (total of 1316 participants). To achieve such a sample size the study would have had to be conducted for at least 23 weeks (compared to the 2 weeks allotted for the survey). Also, only a small number stating interest in receiving a text message reminder and given the number followed through. Thus, one may speculate that giving donors additional communication options for blood donation, regardless of use, might increase their commitment to donation.

LEARNING POINTS

We learned how much structure is needed when designing a randomized study and the importance of incorporating a large population to obtain statistic significance results, while minimizing the steps in which the study depends on the active involvement of participants may positively affect results. We also learned about the different operator systems utilized by Burlington, VT and Manchester, NH when calling their donors and the dedication in which they follow up with their donors.

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