Enhancing attitudes and intentions in prospective blood donors: evaluation of a new donor recruitment brochure

Christopher R. France, Roen Montalva, Janis L. France, and Zina Trost

BACKGROUND: Although little empiric evidence has been published concerning the efficacy of blood donor recruitment materials, research suggests that simple attempts to enhance knowledge may not be sufficient to motivate donation. In contrast, recent donor motivation studies highlight the importance of anxiety, attitudes, and perceived ability to cope with donation (i.e., self-efficacy) as crucial determinants of donation intention. Therefore, recruitment materials that specifically address these constructs have the potential to outperform traditional educational brochures.

STUDY DESIGN AND METHODS: Participants were randomly assigned to read one of three brochures: 1) a new brochure addressing common donor concerns and suggesting specific coping strategies, 2) a standard blood center brochure, or 3) a control brochure on healthy eating and exercise. Standardized questionnaires were completed before and after the brochures to assess change in blood donation anxiety, attitude, self-efficacy, and intention.

RESULTS: Although no significant changes were noted for the control brochure, after reading the new brochure participants reported significant improvements in attitude, anxiety, self-efficacy, and donation intention. The standard donation brochure had an intermediate effect.

CONCLUSION: Efforts to address common donor fears and to provide useful coping suggestions may improve the effectiveness of blood donation recruitment materials.

Blood collection agencies are involved in a constant effort to attract new donors and to retain those who have given in the past. A common approach to recruit new donors is the provision of educational materials, usually presented in a brief brochure format. Although little empiric evidence has been published concerning the efficacy of such recruitment materials, research suggests that simple attempts to enhance knowledge may not be sufficient to motivate actual donation.

For example, Gimble and colleagues provided prospective donors with a specially designed brochure containing information about the ongoing need for blood, the safety and ease of donation, and donor eligibility criteria. Unfortunately, this brochure had no significant impact on recruitment of new donors to existing blood drives.

Although educational materials may help prospective donors see the direct benefits of donation to themselves and others (e.g., enhanced self-esteem, life-saving transfusions), this may not be sufficient motivation if individuals also have compelling personal reasons not to give blood. These reasons may include anxiety regarding needles, pain, and the possibility of vasovagal reactions. Anxiety is a particularly well-established deterrent of future donation, and for most potential donors this emotion is likely to reflect a combination of negative attitudes about donation (e.g., as potentially dangerous, outside of personal control) and a low sense of efficacy regarding one’s own ability to cope with perceived threats (e.g., “I can’t do anything about the pain”). Because negative attitudes and low self-efficacy are crucial impediments to future donation among novice and repeat donors alike, recruitment materials that specifically address these constructs have the potential to outperform traditional educational brochures. Accordingly, we recently developed a donor recruitment brochure that 1) addresses common donor concerns about fear, pain, and potential vasovagal reactions and 2) suggests empirically validated strategies that can be used to cope with these potential barriers to donation.

This study reports on the impact of exposure to this brochure on ratings of donation anxiety, attitude, self-efficacy, and intention in a sample of young men and women.
women with and without prior donation experience. By randomly assigning participants to one of three conditions, we were able to compare the relative effect of the new donation brochure versus 1) a standard brochure currently in use by the American Red Cross and 2) a control brochure that provided information on a topic unrelated to blood donation (i.e., the importance of healthy eating and exercise).

MATERIALS AND METHODS

Participants
Participants included 183 college students (61 men and 122 women) with a mean age of 19.2 ± 1.1 years. Approximately half of the participants (47%) had no prior blood donation experience. Although participants were from diverse undergraduate majors, their participation earned them credit for their introductory psychology class research requirement.

Materials

New brochure
The new donation brochure was based on existing evidence highlighting the importance of knowledge, attitudes, and self-efficacy in determining motivation to donate blood. Specific components of the brochure included 1) education regarding the ongoing need for blood, who is helped by blood donation, and what happens during donation; 2) responses to common donor concerns about fear, pain, and potential vasovagal reactions; and 3) empirically validated coping strategies to use before, during, and after donation, such as fluid loading, applied muscle tensing, and distraction. Coping strategy suggestions included a list of potential distractors (e.g., listen to music, read, talk, draw, or play puzzles), advice regarding predonation fluid loading (i.e., “Drink 2 cups of water or something with caffeine, such as a cola. If you drink water or a caffeinated beverage 30 minutes before your blood is drawn you will be less likely to have reactions such as dizziness and lightheadedness. To get the timing right, bring your drink with you and start to drink it right after you register or while waiting for the health screening”), and instructions on how to engage in applied muscle tension (i.e., “During donation some people feel faint or dizzy. One way to help prevent this reaction is to use a simple muscle tensing technique—it’s as simple as 1, 2, 3: (1) Tense the muscles in your legs and hold the tension for 5 seconds, (2) Release the tension for 5 seconds, (3) Continue to repeat steps 1 and 2. Breathe normally and try not to hold your breath while you are tensing”). The overall design of the booklet took into account research on promotion of health behaviors, which emphasizes the importance of special appeals, readability, and tailoring the information to the target population. The brochure is available from the first author upon request.

Standard brochure
The standard donation brochure was developed by the American Red Cross, Central Ohio Blood Services Region and is currently employed to encourage recruitment of donors. This brochure provides general information about donor eligibility, the process involved in donating blood, what happens to blood once it is donated, and safety procedures in place to protect donors and recipients.

Control brochure
A control brochure titled “Healthy Eating & Physical Activity Across Your Lifespan: Better Health For You” was used to provide basic information on the importance of healthy eating and exercise. Its contents were not related to blood donation.

State Anxiety Inventory
Anxiety was assessed using an adapted version of the State Anxiety Inventory (STAI-Y), which is a 20-item scale designed to allow for self-report of state anxiety levels, with total scores ranging from 20 to 80. An example item, rated from 1 (not at all) to 4 (very much), was “I feel anxious.” In the present sample this scale showed high levels of internal consistency, with Cronbach’s alpha of 0.94 on the prebrochure assessment and 0.95 on the postbrochure assessment.

Blood Donation Attitude Scale
The Blood Donation Attitude Scale consisted of five questions regarding participants’ attitude toward donating blood. This instrument was based on research by Lemmens and colleagues examining blood donation attitudes. The scores for each item are summed to create a total score ranging from 5 to 35. An example item, rated from 1 (pleasant) to 7 (unpleasant), was “The idea of donating blood in the next 8 weeks seems...” In the present sample internal consistency for the scale was high at both pre- and postbrochure assessment (α = 0.89 and α = 0.92, respectively).

Blood donation self-efficacy scale
Self-efficacy was evaluated using a 9-item measure of participants’ perception that they could engage in behavior that would reduce the possibility of vasovagal reactions (e.g., faintness, dizziness, weakness). Items are rated on a 7-point scale and total scores range from 9 to 63. An example item, rated from 1 (strongly disagree) to 7 (strongly agree), was “I feel confident that I can do things to keep from having a bad blood donation experience.” This questionnaire was modeled on the Headache Related...
Self-Efficacy scale.\textsuperscript{25} In the present sample high levels of internal consistency were observed at both pre- and postbrochure assessment ($\alpha = 0.85$ and $\alpha = 0.87$, respectively).

**Blood Donation Intention Scale**

The Blood Donation Intention Scale was derived from questions used in donation intention research conducted by Schreiber and colleagues.\textsuperscript{9} The questionnaire consisted of three questions rated on a 7-point scale that assessed participants’ future intent to donate blood. Total scores on this scale range from 3 to 21. An example item, rated from 1 (probable) to 7 (improbable), was “I will try to give blood in the next 8 weeks.” High internal consistency reliability was observed at both pre- and postbrochure assessment ($\alpha = 0.92$ and $\alpha = 0.94$, respectively).

**Procedure**

Participants were tested in small groups in a quiet classroom setting. Upon arrival to the classroom, participants completed informed consent procedures and then were randomly assigned to one of three conditions: 1) new brochure (the new donor recruitment brochure, $n = 65$); 2) standard brochure (an American Red Cross donor brochure, $n = 56$); or 3) control brochure (a NIH/NIDDK brochure on healthy eating and exercise, $n = 62$). All participants first completed standardized questionnaires to assess blood donation anxiety, attitude, self-efficacy, and intention. Participants then read their assigned brochures. Sufficient time was allotted for all participants to finish reading, after which they were instructed to complete the same set of questionnaires to assess potential change. The entire procedure was completed in less than 50 minutes.

**Statistical analysis**

Statistical analyses were performed with computer software (SPSS package program, SPSS for Windows, Version 15.0, SPSS, Inc., Chicago, IL). To test the significance of changes within each group over time, an analysis of variance (ANOVA) for repeated measures was used, followed by appropriate post hoc analyses. Differences were considered significant at a $p$ value of less than 0.05. If a participant omitted a response on a questionnaire, then the participant’s data on that particular measure were not included in the analyses (overall, only 1.5% of the data were missing).

**RESULTS**

Table 1 provides means and standard deviations (SDs) for the pre- and postbrochure measures of donation attitude, anxiety, self-efficacy, and intention in each of the brochure groups. As illustrated in Fig. 1, results of a series of 2 Time $\times$ 3 Brochure ANOVAs revealed significant interaction effects for all measures. Follow-up analyses revealed that after reading the new donation brochure participants reported a more positive attitude toward blood donation.
less anxiety about the donation process, increased confidence regarding their ability to cope with the donation procedures, and greater intention of donating blood in the near future (all \( p < 0.001 \)). In contrast, no significant changes were noted on any of the measures for participants who read the health and fitness brochure. The standard donation brochure had an intermediate effect, resulting in decreased anxiety (\( p = 0.01 \)), and increased self-efficacy (\( p = 0.004 \)) and donation intention (\( p = 0.003 \)), but no significant change in donation attitude (\( p = 0.22 \)). Similar results were obtained when the analyses were repeated with previous donation experience (i.e., yes/no) as a covariate, suggesting that the brochures had similar effects on donors and non donors.

**DISCUSSION**

The results from this study suggest that blood donation brochures enhance donation intention, which is accompanied by a reduction in anxiety and an increase in perceived ability to prevent vasovagal reactions. The absence of similar changes among participants in the control brochure condition suggests that these effects were not simply a response to repeated assessment, nor a desire to please the experimenters by providing more positive responses on the second assessment. Although positive effects were noted for both of the donation brochures tested, it is noteworthy that only the new brochure produced significant changes in donation attitude as well as effect sizes that were 2 to 5 times larger than those of the standard brochure. In sum, although the standard donation brochure is effective, the new brochure appears to provide larger and more consistent changes. This is a particularly important point in the context of prior evidence that predonation brochures may not necessarily translate into enhanced donor recruitment.\(^2\)

Although a limitation of this study is that actual donation behavior was not assessed, our findings are nonetheless important in at least two respects. First, the study brochure produced significant increases in donor intention, and research suggests that intention is one of the strongest predictors of actual behavior.\(^{26-29}\) Second, our findings show that existing brochures can be enhanced to produce greater effects on intention and other psychological variables related to likelihood of donation; thus, despite prior evidence of their limited impact,\(^3\) donation brochures that are designed to address common donor fears and to provide useful coping suggestions may yet prove to be effective recruitment tools.

Overall, the present findings provide promise that further empiric testing of blood donation recruitment materials will lead to enhanced outcomes in terms of donor recruitment. Given these encouraging results, future research is suggested to examine generalizability in larger, more diverse groups of prospective donors. Although we chose to enhance our recruitment brochure by addressing some of the most common donor fears that serve to deter donation,\(^3\) similar strategies might be considered to address a wide range of barriers that have been identified as important impediments to donation.\(^3\) In fact, with growing use of the Internet to recruit and inform potential donors, it is now feasible, and perhaps most beneficial, to provide tailored information based on the perceived barriers reported by individual donors via interactive Web tools. Regardless of how the information is presented, an additional topic for future research is the need to examine actual effectiveness in field testing where donor attention to the brochures may vary considerably.

**REFERENCES**


