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TRANSFUSION

ORIGINAL RESEARCH

Blood Donors and Blood Collection

Donating blood in a team: Investigating social factors as predictors and outcomes of a positive team experience

Kristen S. Baker[1] | **Kathleen Chell**[1] | **Barbara M. Masser**[1,2] | **Marijke Welvaert**[3]

[1]Research and Development, Australian Red Cross Lifeblood, Brisbane, Queensland, Australia

[2]School of Psychology, The University of Queensland, Brisbane, Queensland, Australia

[3]Research and Development, Australian Red Cross Lifeblood, Sydney, New South Wales, Australia

Correspondence
Kristen S. Baker, Research and Development, Australian Red Cross Lifeblood, Brisbane, QLD, Australia.
Email: krbaker@redcrossblood.org.au

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Abstract

Background: Social connections are crucial in blood donation, with positive social influences providing valuable information and serving as motivation to donate. Australian Red Cross Lifeblood's group donation program, Lifeblood Teams, leverages social connections by enabling donors to donate together and/or contribute to their team's donation tally. One-third of annual donations are from Team donors, yet predictors and outcomes of a positive team experience remain unexplored. This study investigated how connectedness and perceived benefits to being in a team influence team satisfaction, team identity, and advocacy for others to join a team and whether these relationships differ for novice and experienced donors.

Study Design and Methods: Team registrants ($n = 646$) completed a survey on their team donation experiences linked to donor records. The survey investigated themes of motivations, rewards, and social factors to understand why donors join and continue donating with teams.

Results: Feeling connected to team members and perceiving a greater number of benefits were positively related to higher team satisfaction, in turn leading to a stronger team identity and increased advocacy for others to join a team. The relationship between satisfaction with their team and advocating for others to join a team was stronger for novice than for experienced donors.

Discussion: Blood collection agencies should promote team benefits and facilitate strengthening social ties within donation teams to ensure satisfying group donation experiences that lead to stronger team identities and increased advocacy for joining donation teams.

KEYWORDS

advocacy, blood donors, connectedness, donation experience, perceived benefits, satisfaction, social identity, team donation

Abbreviations: BCA, blood collection agency; SEM, structural equation modeling.

1 | INTRODUCTION

Recruiting and retaining donors is essential for maintaining global supplies of blood products. In Australia, while 57% of the age-appropriate population is eligible to donate,[1] only 3% do.[2] Social influences, like family, friends, and colleagues, are crucial in motivating people to start[3,4] and continue donating blood.[5] Those with whom we feel strong social ties are the preferred source of information.[3,6] Australian Red Cross Lifeblood (Lifeblood) has developed a world-first group donation program, called Lifeblood Teams, that leverages social connections by allowing donors to join and donate with others in a team. Most teams are created based on existing social identities (e.g., workplace, sports team, and faith) or recipient connection. People can join only one team at a time, as a champion (i.e., team leader responsible for promoting blood donation and organizing group donations) or as a member. All donations made individually and/or in a group count toward their team donation tally. All teams and donation tallies (by donation type and number of lives saved) are publicly available on the Lifeblood website and can be searched/filtered by state, industry (e.g., financial services and government), numbers of members (e.g., 1–99 and 100–499), and within a specific date range. Some teams participate in national and local blood drives, with a summary of team donation activity provided by Lifeblood staff to champions and members following the drive. The Lifeblood teams program has resulted in more than 14,000 teams, contributing 35% of all donations for 2022–2023.[7] For team donors, the team experience is, therefore, one unique part of their overall donation experience. Given the large proportion of the donor panel registered to teams, it is important to explore predictors and outcomes of a positive team experience.

Satisfaction in the context of blood donation refers to positive perceptions or feelings individuals form about the blood collection agency (BCA),[8] and has been investigated in terms of the donor center,[9,10] of staff and their skills,[11] and toward the organization overall.[12] A positive blood donation experience is important in encouraging altruistic fufilment,[11] increases the likelihood of donor retention[9,13,14] and drives positive recommendations about blood donation to others (advocacy).[12,15] Satisfaction not only fosters loyalty[16] but also enhances the relationship between donors and BCAs as they are made to feel valued and appreciated for donating.[9] Boenigk and Helmig[12] demonstrate that satisfaction with a BCA strengthens blood donors' identification with the BCA, more so than identification increasing satisfaction as modeled by other researchers,[12,17–20] with both identity and satisfaction being important predictors of donation behavior.[21] Similarly, Bodet and Bernache-Assollant[22] find that sports team identification mediates the relationship between customer satisfaction and loyalty. Therefore, satisfaction with a blood donation team experience is also likely important for fostering a stronger team identity and team behaviors (e.g., donation and advocacy).

Advocacy is a valuable outcome of a positive donation experience, with blood donors able to raise awareness and encourage others to donate.[4,6,23,24] When donors talk about blood donation, they also become more likely to comply with solicitations to donate.[25] Further, hearing positive accounts about blood donation from others strengthens their commitment, satisfaction, and identification with the BCA.[24] Having a strong personal role identity as a blood donor also increases online advocacy[22] behaviors.[26] Advocacy, therefore, is an important outcome of positive group donation experiences that can both recruit and retain donors.

Social identity theory proposes a portion of an individual's self-concept—that is their sense of who they are—is derived from the groups they belong to.[27] When individuals join groups, they consider the attitudes and behaviors of other group members to construct a prototype of what a member should do, think, feel, and behave, with this guiding their own behavior.[28] Increasing the salience of a social identity is important for encouraging social change advocacy.[29] In the context of Lifeblood Teams, identifying with the team should result in stronger adherence to group norms for behavior—that is, to keep donating,[30] particularly to differentiate your team from other teams (e.g., in the workplace). Consistent with this, Bryant and colleagues[31] found competition among donation teams was effective for strengthening team identity and subsequently recruiting and retaining young plasma donors.

Social connection is a key component of social identity, with positive social connections derived from identities individuals acquire as members of psychologically meaningful groups.[32] It encompasses feelings of belonging and relatedness with others and is shaped by the quantity, quality, and salience of relationships.[33,34] Social connectedness found in social media groups[35] and through interactions with others during donation appointments[36] can influence satisfaction and the likelihood of returning to donate. This highlights the importance of fostering enduring social connections within teams to maintain satisfaction, strengthen team identity, and sustain donation behaviors.

In addition to connectedness, perceived benefits from donating strongly motivate individuals to donate and return.[37] While there is some evidence of the benefits of donating with others, such as social support, peer encouragement, and competition,[31] the benefits of donating are often only considered for the individual,[8] both internal (e.g., biological and psychological effects) and external

(e.g., in-center experience and incentives).[38] A better understanding of the perceived benefits derived from group membership and donating as part of a team, and the extent that such perceived benefits contribute to a positive (satisfying) team experience, is needed.

The aforementioned social and experiential factors influencing individuals' perceptions of donating are shaped by the duration of their experience with donation (e.g., number of donations). Satisfaction with the overall experience is higher in first-time than repeat donors, although, individual aspects of satisfaction, such as staff interactions and skills show no difference.[11] Further, satisfaction for repeat donors was related to their last donation experience,[11] highlighting the need to maintain consistently positive experiences. Regarding identity, it is established that repeated donations strengthen a donor's role identity, aiding retention.[26] When considering how identity is informed by social connection, it is important to consider that the source and salience of connection can differ by donation experience. While first-time donors are motivated to start donating by social connections with their family, friends, and the community,[3,37] repeat donors report feeling a sense of belonging more so to their broader civic communities (e.g., workplaces and sports clubs).[39] In terms of perceived benefits, novice donors are driven more by incentives, and incentives cause infrequent donors to return more often.[13,40] Together, this research suggests that social connections, benefits, donation experience, and role identity impact donation behavior differently for novice and experienced donors, but whether these differences are also observed in a team donation context remains unclear.

In summary, existing research supports that, within the context of Lifeblood Teams, team satisfaction is likely to be influenced by social (team connectedness) and experiential (perceived benefits) factors,[11,12,41] with a more positive team experience (and increased connectedness) contributing to a stronger team identity and likelihood to advocate for team donations.[6,23,24] While previous studies highlight the importance of social influences on individual blood donation decisions, there is little research that considers blood donation as a social (group) activity, likely given the paucity of formal group donation programs globally. This study offers a novel investigation of the interrelationships among social factors within the context of a blood donation team and how these relationships may be moderated by donation experience (i.e., novice vs. experienced donors). This research is important for ensuring satisfying group donation experiences and subsequently increasing advocacy, noting that positive experiences drive recruitment and retention.

2 | MATERIALS AND METHODS

2.1 | Participants

Participants ($n = 646$) were predominantly female ($n = 382$; 59.13%), aged 18–74 years ($M = 49.35$; SD = 12.54), and all registered to a Lifeblood Team as members (96.75%, $n = 625$) or champions (3.25%, $n = 21$). Most were experienced ($n = 549$; 84.98%; ≥6 donations) rather than novice donors ($n = 97$; 15.02%; 1 to 5 donations),[26] with the average donor career length being 11.61 years (SD = 6.94). Participants had been registered to a team for 0 to 13.41 years ($M = 3.92$, SD = 2.93), in government/defense ($n = 250$; 38.70%), private ($n = 223$; 34.52%), community ($n = 97$; 15.02%), and education ($n = 76$; 11.76%) teams. Teams had 1–7292 members ($M = 617.11$, SD = 968.03) with 1–165 ($M = 18.33$; SD = 33.20) champions per team.

Participants provided informed written consent, and the study was approved by Lifeblood's Human Research Ethics Committee.

2.2 | Materials and procedure

This study adopted a cross-sectional design, linking demographic and donation data to an online survey on Lifeblood Teams experiences. Participants were recruited via an external consulting company to complete a 20-min survey in August/September 2022. The survey covered a broad range of topics, with the subsection that is the focus of this analysis assessing perceived benefits, connectedness, satisfaction, team identity, and advocacy. Survey responses were linked to demographic (e.g., age and gender), donation history (e.g., donation count), and team-level (e.g., time in team) characteristics.

Validated single-item measures were used for satisfaction,[42] team identity,[43] advocacy,[44] and donor identity.[45] Connectedness was adapted from Frye and colleagues'[35] 3-item scale assessing donor relatedness on an individual level (Cronbach's $\alpha = 0.957$). Nine perceived benefit items were devised for this study, with the number of benefits selected measured. Identity and connectedness used 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree). Satisfaction and advocacy were measured on 11-point Likert scales, with responses ranging from 0 (extremely dissatisfied/unlikely) to 10 (extremely satisfied/likely) (see Supplementary Information).

2.3 | Statistical analyses

Data were initially examined through descriptive statistics and correlations between constructs. Structural equation modeling (SEM) was performed using IBM SPSS Amos.[46] Models were considered to demonstrate good fit with respect to the following fit indices[47–49]: CMIN/DF ≤3, CFI ≥ 0.95, RMSEA ≤ 0.06, standardized RMR ≤ 0.08. The initial model was developed by considering theoretical evidence about the importance of connectedness, perceived benefits, satisfaction, team identity, and advocacy in donation, and controlled for age, donor career length, time in team, and (personal) blood donor identity. To establish whether donation experience moderates the structural model,[26] multi-group analysis of structural invariance was also performed using Amos, by comparing constrained and unconstrained models and calculating a chi-square score.

3 | RESULTS

The three most frequently selected perceived benefits were "encouraging others to donate" ($n = 280$; 43.3%), "it's good to do something important with others" ($n = 199$; 30.8%), and "raising awareness through team activity" ($n = 125$; 19.3%). The average number of benefits selected was 1.13 (SD = 0.98), indicating most perceived few benefits. Regarding connection, most agreed slightly less than the median (3) with the three items ($M = 2.59$, SD = 1.14). Respondents moderately identified with their team ($M = 3.25$, SD = 1.13), were on average moderately satisfied with their team experience ($M = 6.17$, SD = 2.31), and were somewhat likely to recommend their friends and family join a team ($M = 6.61$, SD = 2.68). Overall, responses were around midpoint on all measures, indicating a need for improvement in team donation experiences overall (see Table 1).

3.1 | Correlational analyses

Kendall's tau-b correlations (all Shapiro–Wilk p's < .001) were calculated (Table 1) between team experience variables (connectedness, perceived benefits, satisfaction, team identity, and advocacy). All measures were significantly (all p's < .001) positively related to one another, with correlation coefficients from 0.290 to 0.583, indicating weak to moderate associations.

3.2 | Model testing

A structural equation model examined whether perceived benefits and connectedness affect satisfaction, team identity, and subsequently, advocacy (see Figure 1). For this, the recommended minimum sample size was 639 for an anticipated effect size of 0.3, power of 0.95, probability of 0.05, with 11 latent and 13 observed variables.[50] Connectedness ($\beta = 0.570$, $p < .001$) had greater relevance to satisfaction than perceived benefits ($\beta = 0.099$, $p = .004$), explaining 39.2% variance. Connectedness ($\beta = 0.389$, $p < .001$) was also more strongly associated with team identity than satisfaction ($\beta = 0.261$, $p < .001$), explaining 37% variance in team identity. However, satisfaction had

TABLE 1 Correlations between key variables.

	1	2	3	4	5	6	7	8	9
1. Age	-								
2. Donor career length	.233***								
3. Time in team	.157***	.217***							
4. Donor identity	.022^{ns}	.132***	.036^{ns}						
5. Perceived benefits	−.083**	−.066*	−.041^{ns}	.102**					
6. Team connection	.063*	−.036^{ns}	.000^{ns}	.114***	.325***				
7. Team satisfaction	.030^{ns}	−.068*	−.055*	.087**	.294***	.496***			
8. Team identity	.001^{ns}	−.081**	−.077**	.124***	.290***	.460***	.442***		
9. Team advocacy	.019^{ns}	−.068*	−.030^{ns}	.168***	.300***	.417***	.583***	.392***	
Range (min−max)	18–74	0–27.44	0–13.41	1–5	0–6	1–5	0–10	1–5	0–10
Mean	49.35	11.61	3.92	4.28	1.13	2.59	6.17	3.25	6.61
Standard deviation	12.54	6.94	2.93	0.80	0.98	1.14	2.31	1.13	2.68

Note: *$p < .05$, **$p < .01$, ***$p < .001$, ns = Non-significant. Kendall's tau-b correlations reported (all Shapiro–Wilk p's < .001). Age, Donor Career Length, and Time in Team measured in years.

the strongest positive association with advocacy ($\beta = 0.548$, $p < .001$) compared to team identity ($\beta = 0.182$, $p < .001$). Altogether, the model explained 47% of variance in team advocacy. Model fit was good (CMIN/DF = 2.484, CFI = 0.986, RMSEA = 0.048, standardized RMR = 0.029).

3.3 | Moderation effect: Donation experience

To investigate how donation experience influences team perceptions, novice ($n = 97$) and experienced ($n = 549$) donors were compared using Mann–Whitney U tests. The Benjamini-Hochberg false discovery rate for correction of multiple tests was applied,[51] with a corrected significance level cutoff of < 0.025, with adjusted p values (q^*) reported in Table 2. Experienced donors identified more as a blood donor ($M = 4.32$, SD = 0.80) than novice donors ($M = 4.05$, SD = 0.76). Conversely, novice donors were more satisfied with their team experience ($M = 6.66$, SD = 2.48) and more strongly identified with their team ($M = 3.47$, SD = 1.26) than experienced donors (satisfaction: $M = 6.08$, SD = 2.27; identity: $M = 3.21$, SD = 1.10). While both novice ($M = 2.71$, SD = 1.36) and experienced ($M = 2.57$, SD = 1.09) donors felt moderately connected to their teams, there was no significant difference between them. Similarly, for advocacy, novice ($M = 6.88$, SD = 3.09) and experienced ($M = 6.56$, SD = 2.60) donors did not significantly differ in their likelihood to recommend others to join a team.

Multi-group analyses of the initial model were performed by adding donation experience as a moderator to compare differences in the pathways between novice and experienced donors (see Table 3). This model also demonstrated good fit (CMIN/DF = 1.581, CFI = 0.989, RMSEA = 0.030, standardized RMR = 0.053). The revised model showed that donation experience affects the relationship between satisfaction and advocacy ($\chi^2_1 = 8.197$, $p = .004$), with satisfaction with team experience a stronger predictor for novice ($\beta = 0.698$, $p < .001$) than experienced donors ($\beta = 0.500$, $p < .001$). Despite some pathways becoming non-significant for novice donors (potentially due to the small sample size for the multiple factors),[52,53] there were no other significant differences in the pathways between novice and experienced donors.

4 | DISCUSSION

This study investigated predictors (perceived benefits and team connection) and outcomes (team identity and advocacy) of a positive team experience (satisfaction). The initial model demonstrated perceived benefits and connectedness influence team satisfaction. Team satisfaction and connection strengthen team identity and

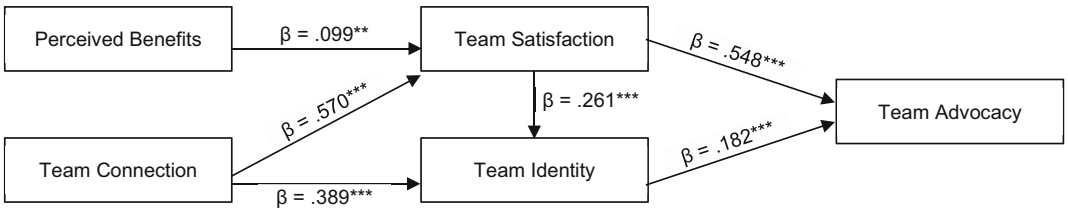

FIGURE 1 Initial model of key constructs, controlling for age, donor career length, time in team, and (personal) blood donor identity. *$p < .05$, **$p < .01$, ***$p < .001$.

TABLE 2 Novice versus experienced donors for key team constructs.

	Scale	Novice donors M (SD)	Experienced donors M (SD)	Differences (q^*)
Donor identity	1–5	4.05 (0.76)	4.32 (0.80)	.008*
Perceived benefits	0–9	1.27 (1.03)	1.08 (0.98)	.042^{ns}
Team connection	1–5	2.71 (1.36)	2.57 (1.09)	.050^{ns}
Team satisfaction	0–10	6.66 (2.48)	6.08 (2.27)	.017*
Team identity	1–5	3.47 (1.26)	3.21 (1.10)	.025*
Team advocacy	0–10	6.88 (3.09)	6.56 (2.60)	.033^{ns}

Note: * indicates a significant difference ($q^* \leq 0.025$) and ns = Non-significant. M = mean, SD = Standard deviation. Perceived benefits were based on the number of items selected (0–9). Donor identity, team identity, and team connection ranged from 1 (strongly disagree) to 5 (strongly agree). Team satisfaction ranged from 0 (extremely dissatisfied) to 10 (extremely satisfied), and team advocacy from 0 (extremely unlikely) to 10 (extremely likely).

TABLE 3 Structural equation modeling analyses: Donation experience.

Model	Structural equation modeling	Multi-group analysis		
Paths	Full model (β)	Novice donors (β)	Experienced donors (β)	Differences (χ^2_1)
Perceived benefits ⟶ Team Satisfaction	.099**	.037^{ns}	.112**	.693^{ns}
Team connection ⟶ Team satisfaction	.570***	.759***	.529***	2.442^{ns}
Team connection ⟶ Team identity	.389***	.252^{ns}	.417***	2.042^{ns}
Team satisfaction ⟶ Team identity	.261***	.270*	.271***	.006^{ns}
Team satisfaction ⟶ Team advocacy	.548***	.698***	.500***	8.197**
Team Identity ⟶ Team advocacy	.182***	.104^{ns}	.210***	1.365^{ns}
R^2				
Team satisfaction	.392	.590	.350	
Team identity	.370	.314	.391	
Team advocacy	.470	.603	.454	
Structural model fit (threshold)				
CMIN/DF (≤ 3)	2.484	1.581		
CFI (⩾ .95)	.986	.989		
RMSEA (≤ .06)	.048	.030		
SRMR (≤ .08)	.029	.053		

Note: *$p < .05$, **$p < .01$, ***$p < .001$, ns = non-significant. Analysis controls for age, donor career length, time in team, and blood donor identity. Novice Donors and Experienced Donors columns contain values of standardized regression weights (β). Differences column contains chi-square difference results for unconstrained model (i.e., CMIN(DF), all DFs were 1).

increase the likelihood of advocacy. The revised model indicated that the relationship between satisfaction and advocacy is stronger for novice compared to experienced donors. For all team constructs, most participants indicated low to moderate endorsement, indicating a need for improvement in team donation experiences.

The most frequently perceived benefits centered on themes of collective altruism and advocacy: encouraging others, participating in meaningful activities with others, and raising awareness. Therefore, teams provide an avenue to support advocacy efforts and make donating a more social (versus individual) experience. These findings extend the importance of altruism and advocacy in the decision to donate blood[37,54] to donating as part of a formal team. Similarly, other research shows that competition, engagement with positive social communities, and a more enjoyable social donation experience are also benefits from donating in a team.[31] Despite many possible benefits to team membership, these are not fully realized by current team members, with most selecting very few benefits. It is also of note that perceived benefits were only weakly associated with satisfaction, with the most frequently selected perceived benefits around advocacy activities. This suggests that by focusing on team connection, creating a positive team experience that in turn increases advocacy, the perceived benefits will be amplified. That is, the more individuals engage in advocacy, the greater the perceived benefits. These insights suggest BCAs should encourage and support all team members in advocacy efforts and facilitate group donation opportunities.

Team connection was the strongest predictor of team satisfaction. It is important for team members to feel more connected with each other to have a positive team experience. Donors indicated needing to feel closer, more connected, and have more contact to feel more satisfied with their team. Regular contact with others in the team is an effective strategy for maintaining social connectedness.[35,55,56] To enhance team connectedness, BCAs could support champions with resources like structured conversation guides and communication templates. They should encourage regular check-ins with newer members, facilitate team donation days, and provide dedicated team sites. These sites would offer visibility of all team members and a space to post about donations and celebrate achievements.[31,35] By increasing team connectedness,

novice donors would be more strongly motivated to follow through and commit to ongoing group donations,[35] thereby improving donor retention.

Team connection and satisfaction were also identified in driving team identity. Furthermore, team identity directly influenced advocacy, meaning individuals with stronger team identities are more likely to recommend others join teams. Just as Chell and colleagues[26] demonstrated that identifying as a blood donor can increase online advocacy, our research suggests that identifying with the team is an important driver of advocacy for donation teams. Social identity can be strengthened by reminiscing on important past experiences.[57] As prosociality is a common motivator for blood donation,[37] this could involve sharing personal connections to donating with the team. Team identity could be further strengthened by reinforcing the salience of team membership through tailored communications to the donor (e.g., including team names in emails and making their team a prominent detail in the app). Team identification could also be enhanced by introducing (friendly) competitions between teams named by their members, augmented with enthusiastic peer leaders and active social media engagement[31] that encourage teams to identify collective goals, raise awareness, or reach milestones.

Satisfaction with the team experience directly predicted team members' likelihood of encouraging others to join the team, especially for novice donors. Ensuring a satisfied donor panel is critical to ensuring the safety of blood supplies, as satisfied donors are more likely to return.[11] Given novice donors' lack of experience with donation, it is important to ensure BCAs facilitate satisfying donation experiences from team sign-up through to post-donation communications. Providing a highly satisfying group experience to novice donors helps shape their initial perceptions of donation overall and increases their likelihood of recommending others join a team.

4.1 | Limitations and future directions

While this study provides a novel introduction into experiences with formal group donation programs, there are several limitations. Methodologically, self-selection bias likely impacted survey responses, with proportionally more females and experienced donors responding. This impacts the generalisability of the findings to the broader population of donors in teams and their group experiences. Additionally, single-item measures for most of the team factors, while maintaining face validity and parsimonious response options, reduce the complexity and nuance of the constructs.

Conceptually, there is debate within the literature about whether satisfaction leads to identity or identity to satisfaction.[12,17–20] A longitudinal study is necessary to explore potential differences in the relationships and pathways over time. Investigating the long-term effects of group donation experiences could also provide insights into donor engagement strategies to be sustained over the long term. Future research should compare the characteristics of donors who do (and do not) join a team, and their likelihood of long-term retention. As donation experience moderated the relationship between satisfaction and advocacy, this suggests a need to explore predictors and outcomes of team satisfaction in other donor subgroups—by age,[31,58] genders,[59] ethnicities,[60] and team sectors (e.g., workplaces and community groups).[39] Given that the group donation program likely makes both social (team) and personal (blood donor) identities salient, it would be useful to understand how these identities differentially drive donation behavior and their relative importance for different donor segments.

While this study focused on formal donation groups officially registered with Lifeblood, it is unclear if or how these findings may be applied to informal groups of donors. Further, the study was limited to advocacy as a behavioral outcome, and as such, the effectiveness of a group donation program on donation behavior remains unknown. While this study focused on positive outcomes, future research should also explore potential negative outcomes of team donation (e.g., vasovagal contagion)[3,37,61] or a negative team experience (e.g., perceptions of coercion) particularly within the context of prior positive individual donation experiences. Finally, the experiential and social factors explored in this study explained <40% of the variance in team satisfaction and identity and 47% of the variance in team advocacy, demonstrating the need for additional research on relevant factors contributing to a positive team experience.

5 | CONCLUSION

This study highlights the importance of targeting social (e.g., connectedness) and experiential factors (e.g., perceived benefits) to increase team satisfaction. A more satisfying team experience and greater team connectedness lead to a stronger team identity and increased advocacy for team donations. By promoting the team benefits, building team connection, and increasing team satisfaction, donors' team identity is strengthened, encouraging them to advocate for others to join a team. This research supports the development of formal blood donation group programs by other BCAs and provides

direction for important social and experiential factors to consider.

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CONFLICT OF INTEREST STATEMENT

The authors declare they have no conflicts of interest relevant to the manuscript.

ORCID

Kristen S. Baker https://orcid.org/0000-0002-4268-5189
Kathleen Chell https://orcid.org/0000-0002-1362-212X
Barbara M. Masser https://orcid.org/0000-0001-9385-6497

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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