Persuading People to Do Good: Effects of Facebook Status Updates on Blood Donation Attitudes and Behavior

Steven Ramondt, Peter Kerkhof, Eva-Maria Merz

Submitted to: Journal of Medical Internet Research
on: July 25, 2024

Table of Contents

Original Manuscript **5**
Supplementary Files **52**

Persuading People to Do Good: Effects of Facebook Status Updates on Blood Donation Attitudes and Behavior

Steven Ramondt[1] PhD; Peter Kerkhof[2] PhD, Prof Dr; Eva-Maria Merz[1, 2] PhD, Prof Dr

[1]Sanquin Research Amsterdam Amsterdam NL
[2]Vrije Universiteit Amsterdam Amsterdam NL

Corresponding Author:
Eva-Maria Merz PhD, Prof Dr
Vrije Universiteit Amsterdam
De Boelelaan 1108
Amsterdam
NL

Abstract

Background: Social media platforms have demonstrated significant potential in influencing behaviors and have become the cornerstone for many public health and agency efforts. Blood collection agencies have embraced social media for the recruitment and retention of donors, as well as to encourage donation-related behaviors. Regular day-to-day social media status updates constitute a large part of the communication strategies employed by blood banks.

Objective: Despite the promise of social media for behavior change, the evidence for the persuasive effects of day-to-day social media status updates remains scant, not only in the realm of blood donation, but across all health domains. We therefore examine long term attitudinal and behavioral outcomes to understand the impact of organizations social media page efforts on (health) behavior.

Methods: We conducted a randomized controlled trial where we invited all newly registered blood donors to participate in our study to investigate the effects of a blood bank's Facebook page on donation attitudes and behavior. Participants (N = 1,891) were randomized to either the experimental or the control group. Participants were randomly assigned either to follow a blood bank's Facebook page or not. This 2 (new Facebook followers, non-Facebook follower) x 2 (pre-measure, post-measure) mixed design with an additional observational arm (current Facebook followers, N = 415) varied between and within participants and results were measured at two and twelve months after participation.

Results: After one year, no interaction effects (group x time) for attitudinal variables were found (attitude towards blood donation; intention to donate; attitude towards blood bank; warmth; competence; donorship contemplation; contemplating the blood bank.
The experiment group was 32% more likely to have made a first donation (OR: 1.32, CI: 1.01-1.73) compared to the control group. Similarly, the experiment group made 12% more whole blood and 17% more total blood donations after one year compared to the control group (resp. IRR:1.12, CI: 1.01-1.24; IRR:1.17, CI: 1.06-1.28).

Conclusions: After one year, no interaction effects (group x time) for attitudinal variables were found (attitude towards blood donation; intention to donate; attitude towards blood bank; warmth; competence; donorship contemplation; contemplating the blood bank.
The experiment group was 32% more likely to have made a first donation (OR: 1.32, CI: 1.01-1.73) compared to the control group. Similarly, the experiment group made 12% more whole blood and 17% more total blood donations after one year compared to the control group (resp. IRR:1.12, CI: 1.01-1.24; IRR:1.17, CI: 1.06-1.28).

(JMIR Preprints 25/07/2024:64740)
DOI: https://doi.org/10.2196/preprints.64740

Preprint Settings

1) Would you like to publish your submitted manuscript as preprint?

✔ **Please make my preprint PDF available to anyone at any time (recommended).**
Please make my preprint PDF available only to logged-in users; I understand that my title and abstract will remain visible to all users.

Only make the preprint title and abstract visible.
No, I do not wish to publish my submitted manuscript as a preprint.

2) If accepted for publication in a JMIR journal, would you like the PDF to be visible to the public?

✓ **Yes, please make my accepted manuscript PDF available to anyone at any time (Recommended).**
Yes, but please make my accepted manuscript PDF available only to logged-in users; I understand that the title and abstract will remain v
Yes, but only make the title and abstract visible (see Important note, above). I understand that if I later pay to participate in <a href="http

Original Manuscript

Persuading People to Do Good: Effects of Facebook Status Updates on Blood Donation Attitudes and Behavior

Steven Ramondt1,2, Peter Kerkhof2 & Eva-Maria Merz1,3

1 Donor Studies, Dept. of Donor Medicine Research, Sanquin Research, Amsterdam, the Netherlands
2 Dept. of Communication Science, Vrije Universiteit Amsterdam, the Netherlands
3 Center for Philanthropic Studies, Dept. of Sociology, Vrije Universiteit Amsterdam, the Netherlands

ABSTRACT

BACKGROUND

Social media platforms have demonstrated significant potential in influencing behaviors and have become the cornerstone for many public health and agency efforts. Blood collection agencies have embraced social media for the recruitment and retention of donors, as well as to encourage donation-related behaviors. Regular day-to-day social media status updates constitute a large part of the communication strategies employed by blood banks.

OBJECTIVE

Despite the promise of social media for behavior change, the evidence for the persuasive effects of day-to-day social media status updates remains scant, not only in the realm of blood donation, but across all health domains. We therefore examine long term attitudinal and behavioral outcomes to understand the impact of organizations social media page efforts on (health) behavior.

METHODS

We conducted a randomized controlled trial where we invited all newly registered blood donors to participate in our study to investigate the effects of a blood bank's Facebook page on donation attitudes and behavior. Participants (N = 1,891) were randomized to either the experimental or the control group. Participants were randomly assigned either to follow a blood bank's Facebook page or not. This 2 (new Facebook followers, non-Facebook follower) x 2 (pre-measure, post-measure) mixed design with an additional observational arm (current Facebook followers, N = 415) varied between and within participants and results were measured at two and twelve months after participation.

RESULTS

After one year, no interaction effects (group x time) for attitudinal variables were found (attitude towards blood donation; intention to donate; attitude towards blood bank; warmth; competence; donorship contemplation; contemplating the blood bank.

The experiment group was 32% more likely to have made a first donation (OR: 1.32, CI: 1.01-1.73) compared to the control group. Similarly, the experiment group made 12% more whole blood and 17% more total blood donations after one year compared to the control group (resp. IRR:1.12, CI: 1.01-1.24; IRR:1.17,

CI: 1.06-1.28).

CONCLUSIONS

Our study offers initial evidence that regular engagement with a Facebook page can have a strong and positive impact on behavior that can markedly benefit organizations, including blood banks.

It shows that these social media efforts can be successful despite limited attitudinal effects. Finally, we provide insights and actionable recommendations that blood banks and other organizations can follow to replicate these results, with the goal of persuading people to do good.

INTRODUCTION

Blood-derived products have a profound impact on global health, serving as a critical component of modern healthcare systems. According to the World Health Organization, millions of units of blood and plasma are collected worldwide each year to meet the ever-growing demand for these life-saving products (World Health Organization, 2021). In Europe alone, more than 25 million units of blood are collected annually, benefiting over four million patients (Merz & van der Meer, 2018; Williamson & Devine, 2013). Ensuring a safe and adequate supply of blood-derived products is therefore critical for effective patient care, improved health outcomes, and life-saving interventions globally. Remarkably, only 2-3% of the population in Western countries typically contributes to this vital resource, making the stimulation and retention of a sufficient donor pool imperative (Merz & van der Meer, 2018). Previous research has shown that retaining existing donors is both more cost-effective and safer than recruiting new ones (van Dongen et al., 2012; Wooi Seong et al., 2014; Zou et al., 2012). Thus, efforts to encourage repeat donations from loyal donors are of paramount importance.

The advent of social media platforms has provided a valuable avenue for promoting blood donation and addressing challenges related to maintaining an adequate blood supply (Ramondt et al., 2020, 2022). Research has shown that social media platforms, such as Facebook, can be effective in raising awareness about blood donation and encouraging donation behaviors (Alanzi & Alsaeed,

2019; Harrell et al., 2022). These platforms provide unique opportunities for engaging with potential donors, disseminating compelling narratives, removing barriers to donation, and fostering a sense of community involvement (Ramondt et al., 2020, 2022; Suraj et al., 2021). Elements such as peer-to-peer communication, social networking, and social influence are leveraged through social media to encourage donation practices (Harrell et al., 2022; Zeng et al., 2023). Moreover, the accessibility and extensive reach of social media platforms make them effective in engaging with diverse populations and promoting blood donation across various regions and countries (Harrell et al., 2022). Thus, social media platforms hold significant promise as tools for raising awareness about blood donation, encouraging donation behaviors, and addressing the challenges associated with blood supply.

Social media have become the cornerstone for many public health and agency efforts (Bail, 2016; Cameron et al., 2013). Like most nonprofit organizations, blood banks have adopted social media to support their mission. (Campbell et al., 2014; Ramondt et al., 2022; Young, 2017). Guo and Saxton (2014) delineate a three-tiered framework, in their pyramid model of social media-based advocacy, to explain how nonprofits garner support for their cause through social media. In Stage 1, nonprofit organizations focus on *expanding their audience reach*. Concurrently, these institutions endeavor to sustain engagement by *keeping the flame alive*. This involves leveraging social media to foster interest and positive attitudes towards their causes with their messages (Stage 2). In addition, they *step up to action* and utilize these platforms to bolster intent and participation through targeted calls to action (Stage 3) (Guo & Saxton, 2014). For blood banks the garnering of support through social media comes to fruition during regular day-to-day social media status updates. Regular day-to-day social media status updates constitute a large part of social media efforts of blood banks (Ramondt et al., 2020, 2022). A thorough examination of these efforts is therefore crucial for effective donor management.

Although there is ample evidence that following organizations' social media

accounts is associated with more positive attitudes toward those organizations (e.g., Dijkmans et al., 2015) evidence that this is due to the persuasive effects of daily social media status updates, rather than self-selection based on already positive attitudes, remains scarce. Studies that do allow for causal conclusions have almost exclusively been conducted in the context of business and marketing, focusing on sales and engagement as dependent variables. In the business domain, a recent meta-analysis (Liadeli et al., 2023) concludes that an active social media presence of brands positively affects engagement and sales.

Despite the acknowledged importance of social media in the field of blood donation, only one recent study has tested the effects of social media on donation behavior, while employing a design that allows for causal conclusions. Harrell et al. (2022) examined the effects of the Facebook blood donation tool, which connects Facebook users to blood donation locations, comparing blood donation data between locations with different rollout dates of blood donation tool. Their study shows an increase of 4.0 % in total donations and 18.9% of first-time donations that can be attributed to the Facebook donation tool.

The current study focuses on understanding the impact of organizations' social media page efforts on donation attitudes and behavior among newly registered donors, as registered by the blood bank. We do so by employing Facebook, the predominant social media platform utilized by Dutch blood banks (Ramondt et al., 2020, 2022). Following a protocol by Beukeboom et al., (2015), through experimental manipulation, we aim to overcome current research limitations and discern the nature of observed effects. In this manipulation, new donors who have just registered for donation are randomly assigned to either follow a blood bank's Facebook page or not. An additional observational arm includes new donors who already follow the blood bank's Facebook page. This design allows us to determine whether the observed effects stem from a selection effect or are due to a causal effect as a result of exposure to the Facebook posts. In addition, it facilitates the evaluation of social media's effectiveness within two critical phases of the pyramid model of social media-based advocacy for persuasion: Stage 2) "Keeping the flame alive" and Stage 3) "Stepping up to

action". This evaluation is conducted through the examination of attitudes (Stage 2), behavioral intentions (Stage 3), and blood donation behaviors (Stage 3), key concepts of the dominant behavioral theory in blood donation (Theory of Planned Behavior (Fishbein & Ajzen, 2010). Blood donation attitudes and behavioral intention towards blood donation are crucial factors for donor retention and have been shown to predict repeat blood donations (Bednall et al., 2013; Masser et al., 2020; Masser et al., 2009; van Dongen et al., 2014). Additionally, we assess these stages by evaluating donors' contemplation regarding blood donation and the blood bank (Stage 2), alongside two dimensions that critically shape organizational perceptions through social judgments of warmth and competence (Stage 3). High levels of perceived organizational warmth and competence can enhance the willingness to engage and reduce obstacles that would otherwise impede action (Aaker et al., 2010). Thus, by examining these factors, we aim to evaluate the platform’s efficacy not only in sustaining donors' current relationships with blood donation and the blood bank but also in promoting ongoing and future donations.

Work by Beukeboom et al. (2015) highlights how social media engagement, such as liking and following a brand on Facebook, can positively impact brand evaluations and purchase intentions, thus suggesting that virtual interactions on social media can lead to actual liking and increased intention. Given that current followers of the blood bank’s Facebook page have already been already exposed to the content, we hypothesize that:

H1. Newly registered blood donors who followed the blood bank's Facebook page before registering (hereinafter "current followers") will exhibit more positive attitudes towards the blood bank at the initial measurement (T0), in comparison to both groups of newly registered donors—those assigned to follow the blood bank's Facebook page (hereinafter "new followers") and those not given such an assignment (hereinafter "non-followers").

Beukeboom and colleagues (2015) provide initial evidence of the effect of the linking of a brand page on brand attitudes and intention during a one-month

period. However, it is plausible that the efficacy of organizational content is at its strongest when new, and effects may wear off. To address this, we study this effect over a more prolonged time, investigating the exposure to Facebook posts over a two- and twelve-month period. In addition, we only expect change in participants for whom the situation changes (i.e., when newly exposed to the Facebook page). Therefore, we hypothesize that:

H2. Both current and new blood bank Facebook followers will have more positive attitudes towards the blood bank, attitudes towards blood donation, and higher intention to donate blood compared to non-followers, post measure (T1 (after 2 months) and T2 (after 12 months)).
H3. New blood bank Facebook followers will increase their attitudes towards the blood bank between pre- and post-measure (T1 and T2), whereas attitudes towards the blood bank from current and non-followers will not change.

This study further aims to expand upon previous research by examining the impact of social media on behavior. We analyze retention behavior and donation frequency, including the crucial first donation. First donations are a strong predictor of long-term donation behavior, the overall frequency of donations, and the discontinuation of donor careers (Dongen, 2015; Gillet et al., 2015; Schreiber et al., 2005). Retaining newly recruited donors is a significant challenge for blood banks: around 24% of Dutch donors do not make a second donation (Dongen, 2015; Wiersum-Osselton et al., 2022). The challenge of donor retention may be even more acute in other regions, as evidenced by return rates after a first donation in England, North Wales, and Iran of 52%, and a return rate in Ohio of 35% (France et al., 2013; Kasraian & Tavassoli, 2012; Lattimore et al., 2015). In the Netherlands, where only one organization (Sanquin) is authorized to collect and distribute blood and blood components, newly registered blood donors are required to meet specific health criteria prior to donation, a process verified through a New Donor Examination (NDE). This examination consists of a health questionnaire reviewed by a physician and a blood test for transfusion-transmissible infections. Approximately 82% of newly registered donors attend the NDE. Following successful testing and clearance,

donors are permitted to proceed with their first blood donation of which 63% (77% of those who underwent the NDE) do so (Prinsze, 2024). Due to the persuasive nature of the blood bank's Facebook posts, we hypothesize that due to exposure to these posts:

H4. New and current blood bank Facebook followers will be more likely to show up for their first blood donation (both the IDE and the regular first donation) compared to non-followers.
H5. New and current blood bank Facebook followers will have donated more often compared to non-followers after one year.

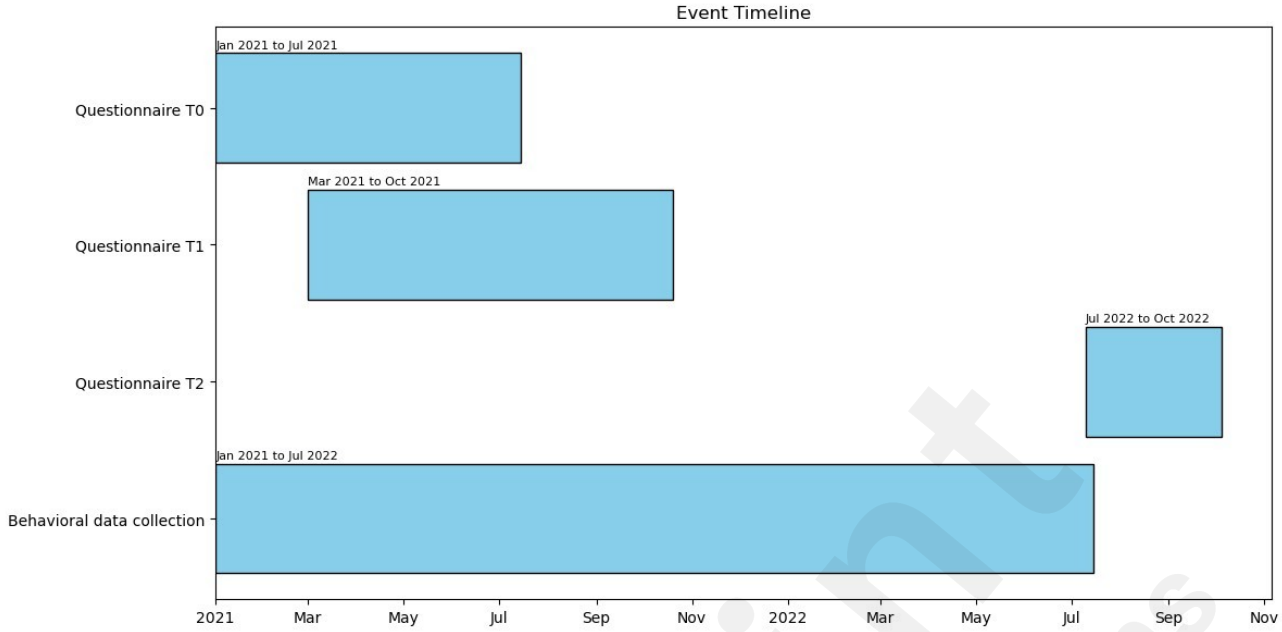
Furthermore, in light of the blood bank's social media communications, which aim to mitigate the high donor attrition rates observed in blood donation, it can be posited that the repeated emphasis on the importance of the donor community and the impact of blood donation on patients (Klinkenberg et al., 2018; Merz & van der Meer, 2018; Ramondt et al., 2022) may contribute to a reduction in donor attrition. This leads to the following hypothesis:

H6. New and current blood bank Facebook followers will be less likely to have ceased their donor career compared to non-followers after one year.

METHODS

We conducted a randomized controlled trial where we invited all newly registered blood donors to participate in our study on effects of the Dutch blood bank's Facebook page, see figure 1 for timeline. The blood bank's primary recruitment is through social media. It, therefore, has an active social media presence with a Facebook page of ±78,000 followers at the time of the study. Approximately four posts are published weekly, focusing on the five social media communication pillars of the blood bank (i.e., Donor Community, Better Patient Life, Inside the blood bank, Blood, and Plasma).

Figure 1. Timeline



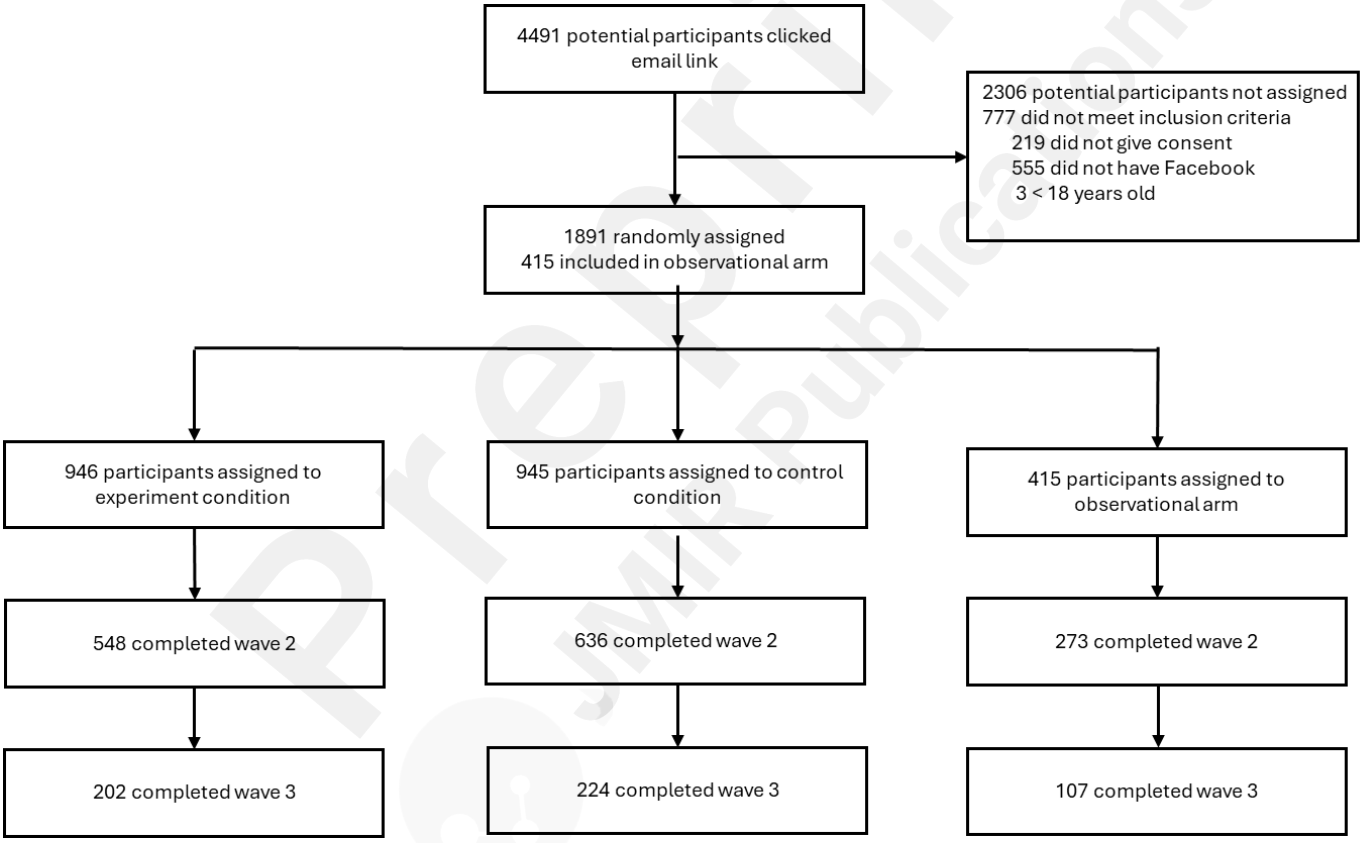
Study Design and Procedure

Following the preregistered protocol (https://osf.io/2qgsu), participants were randomly assigned to either the experimental or the control group. This 2 (new Facebook followers, non-Facebook follower) x 2 (pre-measure, post-measure) mixed design with an additional observational arm (current (blood bank page) Facebook followers) varied between and within participants and results were measured at two and twelve months after participation.

Participants were asked to participate by email with a direct link to the study within two weeks after signing up to become a blood donor. Participation in the study necessitated individuals to be within the donation age range (18-65 years at the time of enrollment) and possess an active Facebook account (see Figure 2. For flow diagram). After giving consent and joining the study, participants filled in several questions about Facebook use as well as attitudinal questions about blood donation and the blood bank. They then indicated their familiarity with the blood bank's Facebook page. They were assigned to the observational arm if they were familiar with and currently liking the page. Participants not presently liking the Facebook page were randomly assigned to either the experimental or the control group.

Next, only participants who were assigned to the experimental group were asked to like the Facebook page of the blood bank. They were instructed and facilitated with a link to do so immediately. Afterward, participants were asked if they had liked the page. Finally, participants were asked for demographic information and to leave their email address, allowing us to contact them for the second (after two months) and third (after 12 months) wave of questionnaires. During wave two and three, participants were only asked attitudinal questions about blood donation and the blood bank, and no demographic and familiarity questions were collected.

Figure 2. Flow diagram



Constructs and Measures

We examined attitudes and behavioral intention toward blood donation, key concepts of the Theory of Planned Behavior and previously shown to be the most critical components for blood donor retention (Masser et al., 2009; van Dongen et al., 2014). Key constructs and measures are described below (see Appendix I for questionnaire). Questionnaire variables were collected for all

three waves unless specified otherwise.

Attitudinal outcomes

Blood donation intention

The extent to which an individual intends to donate blood was measured with two items (Ferguson et al., 2012) on a 5-point Likert scale ranging from "Completely disagree" (1) to "Completely agree" (5). An example is "I intend to donate blood within the next 12 months". The items were compiled into a mean index (Cronbach's α = .85).

Blood donation attitude

Six items measured attitude toward blood donation on a 5-point Likert scale based on (Ferguson et al., 2012). The question stem was "For me, donating blood in the next 12 months would be …", followed by six rating scales (e.g., "Useless" - "Useful"). Items were compiled into a mean index (Cronbach's α = .70).

Blood bank attitude

Attitude towards the blood bank was measured with four questions on a 9-point Likert scale based on Beukeboom et al. (2015). The question was "Please rate [organization] … bad – good, not nice -nice, attractive– unattractive, and qualitatively bad – qualitatively good. The items were compiled into a mean index (Cronbach's α = .86).

Warmth and competence

Perceptions about the warmth and competence of the blood bank were measured with six items (3 for each construct) on a 7-point Likert scale (Aaker et al., 2010) ranging from "Completely disagree" (1) to "Completely agree" (7). An example is "I find that [organization] is warm". The items were compiled into a mean index (warmth Cronbach's α = .87, competence Cronbach's α = .90).

Contemplation

Participants were asked how often they thought about blood donation and the

blood bank with two questions, rated on a 9-point Likert scale, ranging from "Never" (1) to "Multiple times a day" (9),. For example, "How often do you think about blood donation?".

Behavioral outcomes

Blood donation behavior was assessed by monitoring actual blood donations, achieved through the retrieval of blood donation records from the blood bank registry. Every visit to the blood bank resulting in blood collection is systematically recorded, encompassing NDEs. For this study, all recorded donations from participants were included for analysis up to one year following their initial participation in our study.

First donation

Every person signing up at Sanquin in The Netherlands is first invited for a NDE. This visit includes a blood sample and is meant to screen for infectious diseases, assessment of blood type, and potential antibodies. If all criteria are met by prospective donors, they are invited for their first donation a few weeks later. Both these blood withdrawals are separately registered. We include attendance (yes/no) for both events in our analyses.

Blood donation

Donation intervals and invitations can differ by donation type. Plasma can be donated every two weeks. We therefore differentiate between the frequency of total whole blood donations and total number of blood donations (including non-whole blood donations) made in the year after starting the current study.

Donation cessation

Using blood donation records from the blood bank registry we investigated if participants stopped making donations in the year after their participation in our study (yes/no).

Control variables

Age and sex were measured at baseline and included as control variables for

behavioral analyses. These factors could influence the overall potential for blood donations. For donor health reasons, females can donate whole blood three times a year, while males can donate up to five times in the Netherlands (Vinkenoog et al., 2020). In addition, age influences requirements to donate such as ferritin levels (Kaushal et al., 2022; Vinkenoog et al., 2020). The variables below on general social media use were only measured at pre-measure and included as control variables if significant differences were observed at baseline as stated in the preregistration.

General Facebook time

Time spent on Facebook was measured with 1-item based on Beukeboom et al. (2015). The participants were asked 'How often do you spend time on Facebook?' on a 12-point Likert scale from "Never" (1) to "Multiple times an hour" (12).

General Facebook intensity

The intensity of Facebook usage (Ellison et al., 2007) was rated with participant agreement on six items ("Completely disagree" (1) – "Completely agree" (5)) and included questions such as "Facebook is part of my everyday activity". Items were compiled into a mean index (Cronbach's $\alpha = .88$).

The following variables on social media use and blood donation were only measured at wave two (T1) and three (T2) and included as control variables.

Blood bank social media channels

Participants were asked if they followed other social media channels (i.e., Twitter and Instagram) of the blood bank. Two dummy variables (yes /no) were created from the question, 'Do you follow the Twitter/Instagram page of the blood bank at this moment?

Contact & donation

Participants answered if they were contacted for an appointment to donate blood, and if they had donated since participating in this study.

Analytic Approach

ANOVAs with a Bonferroni correction for multiple comparisons, and Chi-square test examined mean outcome differences between experiment groups and the observational arm on demographic variables, contact, and donation at baseline. Due to the violation of the assumptions of normality and homoscedasticity (equal variances), nonparametric analyses employing the Kruskal-Wallis test were conducted on attitudes, intention, and control variables at baseline. Main attitudinal outcome differences between the experiment groups at two and twelve months after participation were assessed with Mixed ANOVAs on the dependent variables. Poisson regression analyses were used for number of donations and logistic regression models for behavioral outcomes with a binary outcome. Analyses were conducted using R 4.3.0 (R Foundation for Statistical Computing).

Ethics Approval

The [Blinded for Review] Institutional Review Board approved this protocol. All participants provided signed informed consent.

RESULTS

Manipulation check

Following the preregistered protocol, we checked if the experiment group manipulation succeeded. Participants not exposed to the Facebook page were excluded from analyses. Twenty-eight percent (155 out of 553) of participants assigned to the experimental condition declined to like the blood bank's Facebook page when requested during the baseline measure. Common reasons were not being interested, not being active on or not wanting to use Facebook, and not wanting to join an organizational Facebook page after just signing up as a blood donor (and not yet having donated).

Post-measure checks also revealed that 140 (21.8%) participants assigned to the control condition reported that they started following the blood bank's Facebook page during the two-month follow-up period. They were excluded from the analyses.

Table 1. Sample characteristics and comparison of all participants measured at baseline.

	Group		
	Experimental (N = 393)	Control (N = 496)	Observational (N = 273)
Demographics			
Age	32.75 (12.77) [a]	32.64 (13.76) [a]	40.54 (13.00) [b]
Female N (%)[1]	297 (75.6) [a]	365 (73.6) [a]	206 (75.5) [a]
Control variables			
Gen. Facebook time (1-12) [2]	7.82 (2.15) [a]	7.61 (2.26) [a]	8.83 (1.54) [b]
Facebook Intensity (1-5) [2]	2.57 (.85) [a]	2.44 (.88) [a]	3.09 (.80) [b]
Has donated (%)[1]	146 (37.15) [a]	184 (37.10) [a]	107 (39.19) [a]
Has appointment (%)[1]	264 (79.04) [a]	335 (79.20) [a]	185 (87.68) [b]
Dependent variables			
Attitude blood donation (1-5) [2]	4.26 (.43) [a]	4.17 (.43) [b]	4.28 (.48) [a]
Intention blood donation (1-5) [2]	4.36 (.81) [ab]	4.29 (.82) [a]	4.42 (.77) [b]
Attitude blood bank (1-9) [2]	7.49 (1.02) [a]	7.33 (1.12) [b]	7.59 (1.08) [a]
Warmth (1-7) [2]	5.59 (.84) [a]	5.44 (.92) [b]	5.59 (.99) [a]
Competence (1-7) [2]	5.85 (.90) [a]	5.73 (.94) [a]	5.76 (1.06) [a]
Contemplation donorship [2]	4.08 (1.32) [a]	4.04 (1.16) [a]	3.96 (1.35) [a]
Contemplation blood bank [2]	3.36 (1.62) [a]	3.32 (1.65) [a]	3.83 (1.68) [b]

Note. Means with a different subscript (a,b) differ significantly according to Bonferroni post hoc tests ($p < .05$). [1]Difference with Chi-square. [2]Difference with Kruskal-Wallis

Control analyses

Table 1 shows the results of one-way ANOVAs comparing the observational, experiment, and control groups. There are significant differences between the groups on age ($F (2, 1159) = 36.61$, $p < .001$). Tukey post hoc comparisons show no significant differences in age between the control and the experimental group. However, the participants in the observational arm of the experiment are significantly older than participants in both the experiment ($p < .001$) and

control group ($p < .001$). No significant differences between groups are found on sex ($\chi2 = 0.57$, $df = 2$, $p = 0.75$), and having already donated ($\chi2 = 0.41$, $df = 2$, $p = 0.81$).

Five participants in both the observational and experimental arm followed the blood bank on Twitter. Twenty-nine participants followed the blood bank on Instagram in the observational arm, while 35 did in the experimental, and 12 in the control arm. The following on Twitter and Instagram represent only 1% and 5% respectively of the included participants in our experiment and control condition and are therefore ignored for further analyses. Post hoc comparisons show no differences between experiment and control condition for all other control variables and were not included as covariates as was stated in the preregistration. The observational arm scores higher on general Facebook time, Facebook intensity, and having an appointment to donate (resp. ($\chi2$ (2) = 31.82, $p < .001$; $\chi2$ (2) = 52.45, $p < .001$; $\chi2 = 7.84$, $df = 2$, $p = .020$) compared to both the control and experimental group (see Table 1).

What are the attitudinal differences between groups at baseline?

In line with H1, the observational arm with the current follower group has more positive attitudes about blood donation and the blood bank, and contemplates more about blood donation than participants in the other two groups (resp. $\chi2$ (2) = 17.52, $p < .001$; $\chi2$ (2) = 10.47, $p = .005$; $\chi2$ (2) = 16.76, $p < .001$) (see Table 1). In addition, the participants in the observational arm score higher on intention to donate than the control group ($\chi2$ (2) = 7.80, $p=.020$). No differences between the groups were found on blood bank's competence and contemplation on donorship (resp. $\chi2$ (2) =4.83, $p = .090$; $\chi2$ (2) = 32.48, $p = .289$). The participants in the control group scored lower on attitude toward blood donation compared to both observational ($p = .006$) and experimental group ($p = .013$). Similarly, participants in the control group score lower on warmth ($\chi2$ (2) = 8.52, $p = .014$) compared to participants in both the observational ($p = .03$) and experimental group ($p = .03$).

What are the short- (two months) and long-term (12 months) effects on

attitudes?

For H2, we expected both current and new blood bank Facebook followers to have more positive attitudes and higher intentions to donate blood compared to non-followers. While H3 predicted that new blood bank Facebook followers will increase their attitudes towards the blood bank between pre- and post-measure, whereas attitudes towards the blood bank from current and non-followers will not change.

Overall, there are short-term (after two months) interaction effects (group x time) on attitude towards blood donation ($F (2, 1159) = 7.90$, $p < .001$), and warmth ($F (2, 1159) = 4.05$, $p = .018$) (see Table 2). Attitude towards blood donation showed a short-term group effect ($F (2, 1159) = 8.16$, $p < .001$). Bonferroni comparisons show that the attitudes of the experiment group decreased more compared to the other groups ($p < .001$). While the groups responded differently over time for warmth as shown by the interaction effect, there is no main group effect for warmth ($F (2, 1159) = 2.05$, $p = .130$) suggesting that the groups were not different. There was a short-term time effect for warmth ($F (2, 1159) = 166.07$, $p < .00$), with warmth decreasing for all groups . No short-term interaction effects are found for intention to donate ($F (2, 1159) = .26$, $p = .769$), attitude towards blood bank ($F (2, 1159) = 2.74$, $p = .065$), competence ($F (2, 1159) = 2.16$, $p = .115$), contemplation donorship ($F (2, 970) =.33$, $p = .721$), and contemplation blood bank ($F (2, 967) = 2. 32$, $p = .099$).

There is a short-term time effect on all dependent variables (intention to donate: $F (2, 1159) =14.27$, $p < .001$: attitude towards blood bank: $F (2, 1159) = 110.01$, $p < .001$; competence: $F (2, 1159) =131.62$, $p < .001$; donorship contemplation: $F (2, 970) =21.57$, $p < .001$; contemplating the blood bank: $F (2, 967) = 91. 60$, $p < .001$), except for attitude towards blood donation ($F (2, 1159) =1.25$, $p = .264$), showing a decrease for all groups. Furthermore, there are short-term group effects on intention to donate ($F (2, 1159) =4.39$, $p = .013$), attitude towards blood bank ($F (2, 1159) = 5.28$, $p = .003$), and contemplating the blood bank ($F (2, 967) = 7.42$, $p < .001$). Intention and blood bank

contemplation decreased faster for both the experiment and the control group compared to the observational group. Attitude towards the blood bank decreased the most for the experiment group and stayed highest for the observational group. There is no main group effect for warmth (F (2, 1159) =2.05, p =.130, competence (F (2, 1159) =.20, p = .815), and donorship contemplation (F (2, 970) =.35, p = .708).

After one year, none of the interaction effects (group x time) remained (attitude towards blood donation, and the scores of all groups converged at a more similar level after one year (see Table 3.): F (2, 413) =1.63, p = .198; intention to donate: F (2, 413) =.51, p = .600: attitude towards blood bank: F (2, 413) = .09, p = .916; warmth: F (2, 413) = .06, p = .944; competence: F (2, 413) =.45, p = .637; donorship contemplation: F (2, 321) =2.05, p = .130; contemplating the blood bank: F (2, 320) = 1.73, p = .178).

All dependent variables show effects over time after twelve months (attitude towards blood donation: F (2, 413) =26.45, p <.001; intention to donate: F (2, 413) =41.83, p < .001: attitude towards blood bank: F (2, 413) = 56.70, p < .001; warmth: F (2, 413) = 129.19, p < .001; competence: F (2, 413) = 89.72, p < .001; donorship contemplation: F (2, 321) =6.97, p = .009; contemplating the blood bank: F (2, 320) = 29.15, p < .001). Bonferroni comparisons show a decrease for all groups in intention to donate, attitude towards blood bank, warmth, and competence. There is an increase for all the groups in contemplating the blood bank (see Appendix B for cross-sectional analyses of the two and twelve-month periods).

Table 2. Main attitudinal outcomes

Depend. variables	Experiment				Control				Observational		
	Pre	2 months (n = 393)	12 months (n = 151)		Pre	2 months (n = 496)	12 months (n = 158)		Pre	2 months (n = 273)	12 months (n = 107)
Attitude blood donation	4.26 (.43)	4.16 (.40)	4.22 (.37)		4.17 (.43)	4.19 (.45)	4.19 (.47)		4.28 (.48)	4.31 (.48)	4.28 (.47)
Intention blood donation	4.36 (.81)	4.22 (.86)	4.26 (.73)		4.29 (.82)	4.17 (.87)	4. 22 (.79)		4.42 (.77)	4.33 (.81)	4.36 (.89)
Attitude blood bank	7.49 (1.02)	6.98 (1.23)	7.13 (1.19)		7.33 (1.12)	7.00 (1.23)	7.06 (1.30)		7.59 (1.09)	7.25 (1.39)	7.33 (1.33)
Warmth	5.59 (.84)	5.03 (.98)	5. 07 (.92)		5.44 (.92)	5.09 (.97)	5. 08 (1.01)		5.59 (.99)	5.18 (1.14)	5.16 (1.06)
Competence	5.85 (.90)	5.33 (1.07)	5.37 (1.02)		5.73 (.94)	5.38 (1.03)	5.36 (1.06)		5.76 (1.07)	5.37 (1.18)	5.41 (1.18)
Contemplation donorship	4.08 (1.32)	3.83 (1.21)	3.90 (1.37)		4.04 (1.16)	3.82 (1.27)	3.75 (1.27)		3.96 (1.35)	3.80 (1. 39)	3.72 (1.41)
Contemplation blood bank	3.31 (1.62)	3.95 (1.46)	3.94 (1.35)		4.17 (.43)	4.19 (.45)	3.71 (1.26)		4.28 (.48)	4.31 (.48)	4.18 (1.40)

[a] Interaction effect, [b] Group effect, [c] Time effect

What are the effects on donation behavior?

Contradicting H4, new and current blood bank Facebook followers were not more likely to have their new donor examination compared to non-followers (see Table 4. & Table 5.). However, the experiment group was 32% more likely to have made a first donation (OR: 1.32, CI: 1.01-1.73) compared to the control group. Similarly, the experiment group made more 12% more whole blood and 17% total blood donations a year compared to the control group (resp. IRR = 1.12, CI: 1.01-1.24; IRR = 1.17, CI: 1.06-1.28). No effects were found for the observational group compared to the control group on both whole blood as well as total number of blood donations. However, in contrast with H6, the experimental and observational group did not cease their donor career less compared to control group after one year. Regarding covariates, females made more donations in a year compared to males for whole blood and total blood donations (resp. IRR = 1.96, CI: 1.80-2.13; IRR = 1.97, CI: 1.80-2.16). They were also more likely to donate for their new donor examination (OR: 1.91, CI: 1.37-2.69) and to make their first donation (OR: 2.11, CI: 1.59-2.81). Women were less likely to cease a donor career (OR: 0.52, CI: 0.37-0.73). Age was positively related to donation behavior: being a year older made it more likely to make a first donation (OR: 1.01, CI: 1.00-1.02) and to make more donations (IRR= 1.01, CI: 1.00-1.01).

Table 4. Main behavioral analyses

	New donor examination			First donation			Whole blood donation			Total blood do	
Predictors	OR	95% CI	*p*	OR	95% CI	*p*	IRR	95% CI	*p*	IRR	95% C
Intercept	2.32	1.58 - 3.40	**< .001**	0.59	0.42 - 0.83	**.002**	1.16	1.01 - 1.32	**.031**	1.17	1.03 - 1.32
Age	1.00	0.99 - 1.01	.86	1.01	1.00 - 1.02	**.008**	0.00	1.00 - 1.01	.113	1.01	1.00 - 1.01
Female	1.91	1.37 - 2.69	**< .001**	2.11	1.59 - 2.81	**< .001**	1.97	1.80 - 2.16	**< .001**	1.96	1.80 - 2.13
Experiment	1.21	0.90 - 1.65	.21	1.32	1.01 - 1.73	**.045**	1.12	1.01 - 1.24	**.034**	1.17	1.06 - 1.28
Observational	1.11	0.78 - 1.57	.56	1.19	0.87 - 1.62	.28	1.09	0.97 - 1.23	.126	1.10	0.99 - 1.22

Table 5. Main behavioral outcomes.

Depend. variables	Experiment (n = 393)	Control (n = 496)	Observational (n = 273)
New donor examination (yes, %)	298 (75.83)	359 (72.38)	202 (74.00)
First donation (yes, %)	227 (57.76)	255 (51.41)	157 (57.51)
Whole blood donation (Mean (sd))	1.75 (1.49)	1.59 (1.46)	1.75 (1.53)
Total blood donation (Mean (sd))	2.08 (1.85)	1.81 (1.74)	2.06 (2.05)
Cease donation career	95 (24.17)	137 (27.62)	71 (26.01)

DISCUSSION

The present study investigated whether liking a blood bank's Facebook page could improve people's donation attitudes, intentions, and most importantly donation behavior.

In line with H1, we observed that participants who already liked the blood bank's Facebook page held more favorable attitudes toward the blood bank compared to both new and non-followers. These participants also expressed more positive views about blood donation and were more frequently engaged in thoughts about the blood bank. These findings align with earlier work (e.g., Beukeboom et al., 2015; Kim & Ko, 2012) and can be explained by both selection effects -wherein pre-existing positive attitudes lead individuals to "like" the page- and causal effects arising from exposure to the Facebook posts.

Our randomized field experimental design enabled us to draw causal inferences over two- and twelve-month periods. While the observational group showed more positive attitudes towards blood donation and the blood bank, higher intention to donate blood, and thought more about the blood bank after two months compared to the control group, the experimental group did not show such differences. In similar contrast with H2 and H3 we did not find differences between the groups on warmth, competence, and thoughts about blood donation. Overall, exposure to the blood bank's Facebook posts did not result in sustained attitudinal changes; in fact, all attitudinal variables declined minimally over time for all groups. The exception was an increase in contemplation about the blood bank (and blood donation for the control group, which started from a significantly lower baseline), which was observed across all groups.

This divergence from the short-term (i.e., 1-month) effects on brand evaluation found by Beukeboom et al. (2015) suggests that such effects may diminish over extended periods of time. Evidently, the specific content to

which participants are exposed and the manner in which an organization presents itself on Facebook matters and can influence these outcomes. Nevertheless, this study found no day-to-day causal effect of Facebook exposure on attitudinal variables. The baseline attitudinal values were high at baseline, with the average being near maximum. It is plausible that the elevated attitudes observed around donor sign-up may not be sustainable and the relative non-intrusive act of liking a Facebook page may not be sufficient to counteract the natural decline. Despite observing a decline, all attitudinal variables maintained high levels, suggesting that the observed decrease is unlikely to exert a significant impact. The universal increase in thoughts about the blood bank could be attributed to the blood bank's significant and favorable visibility during the Covid-19 crisis (Spekman et al., 2021). Another contributing factor might be going through the regular donation process, including receiving invitations and making actual donations, which all groups underwent.

Regarding behavioral outcomes, we hypothesized that both the experimental and observational groups would be more likely to attend their first blood donation session, donate more frequently, and be less likely to discontinue their donor careers compared to the non-Facebook-following control group (H4-H6). Consistent with our hypotheses, disparities were identified in the rates of first-time donations, whole blood donations, and the total number of donations between the experimental group and the control group. In contrast, no differences were observed between the observational group and the control group across the assessed behavioral outcomes. This suggests that while initial effects are evident after one year, the impact of Facebook exposure may diminish over time. The Facebook following group was 32% more likely to have made a first donation -considered a critical indicator of subsequent donation behavior, overall donation frequency, and termination of donor participation (van Dongen, 2015; Gillet et al., 2015; Schreiber et al., 2005)- compared to the control group. The period for observing donation cessation post-intervention was brief. Given the observed increase in initial

donations, it is conceivable that cessation effects might become more discernible following a prolonged intervention period. Notably, the group subjected to the experimental intervention demonstrated a higher rate of whole blood donations and overall donation activity compared to the control group. In 2022, the Netherlands reported a total of over 730,000 donations from slightly more than 406,000 donors. With an average of 1.8 donations a donor, the importance of an 18% increase in donations on average across potentially the majority of the donor population should not be overlooked. The typically short duration of donor engagement underscores the necessity of recruiting 70,000 new donors in 2022 (achieving 92,000, thereby exceeding the target) to sustain a donor base comparable to the prior year's total of just over 384,000 (Sanquin Bloedvoorziening, 2022). Although the operational complexities of blood banks are multifaceted, even modestly enhancing contributions from the existing donor pool would demonstrate an exponential decrease in the demand for new donors. This suggests that even incremental improvements in donation frequencies, by social media, can have disproportionately positive effects on reducing the necessity for expanding the donor base. Considering the recruitment costs ranging from 22 euros (via ambassador-driven efforts) to 58 euros (through direct, or 'cold', recruitment strategies) reported in 2015 (van Dongen, 2015), such a reduction in recruitment needs could markedly benefit the financial sustainability of blood donation organizations."

Limitations and Strengths

Our study fills a gap in existing research by examining the effects of naturalistic exposure to social media, which closely mirrors real-world conditions. By leveraging an actual blood bank's Facebook page, employing participants' own Facebook accounts, and gathering data through their daily routines, we enhanced the external validity of our findings. We further address limitations of prior research by extending the sample size significantly. Additionally, we have both examined potential Facebook effects on attitudes over a longer duration, as well as extended this field of research

by investigating the impact Facebook effects on behavior.

However, several limitations warrant mention. First, participants were aware of their involvement in a study. This might have led to testing effects such as heightened attention to Facebook post or even altered attitudes and behavior towards donation and the organization. Secondly, it is worth mentioning again that the specific content and presentation style an organization adopts on Facebook influences outcomes. In media effects research, it is well understood that “content is king” (Valkenburg, 2022). Nevertheless, our findings suggest that social media can positively influence blood donation behavior by making approximately four weekly posts, focusing on the five social media communication pillars of the blood bank (i.e., Donor Community, Better Patient Life, Inside the blood bank, Blood, and Plasma). Moreover, our earlier research (Ramondt et al., 2020, 2022) offers additional insights on salient issues that require attention and the environment in which a blood bank’s social media communication competes.

Thirdly, our study confined its examination of social media's impact to Facebook alone. Recent trends indicate a shift among younger demographics away from Facebook towards platforms like TikTok and Instagram, gaining popularity across multiple age groups including individuals aged 18 and older (Jonkers et al., 2024)—the demographic eligible for blood donation. Consequently, diversifying the range of social media platforms used in donor recruitment strategies might prove more efficacious in reaching potential new donors. This strategy's relevance is underscored by the declining participation potentially associated with an exclusive focus on Facebook. However, it is pertinent to note that the demographic of individuals aged 29 and above continues to engage with Facebook (Jonkers et al., 2024), aligning closely with the average age of our study participants.

Fourth, we assessed each participant's donation attempts by extracting this information from our database. However, it's important to note that donation intervals can vary based on type of donation (e.g., whole blood versus plasma) and this can influence the total number of donations. Furthermore, self-selection biases were evident in our study. We had participants who were

already positively inclined toward the blood bank following the Facebook page prior to the study. Conversely, some participants in the control group began following the page during the study. Lastly, we had participants assigned to the experimental group opting not to participate. This self-selection could have led to an experimental group in which participants with initially negative brand evaluations were less represented.

Practically speaking, we observed that many participants assigned to the experimental group declining participation mention reluctance to follow an organizational Facebook page immediately after registering as a blood donor but before making a donation. Based on these observations, we recommend that blood banks seeking to leverage social media's potential impact on donation behavior should actively invite new donors to join their social media pages only after they have completed a new donor examination or made their first donation.

Conclusions

Our study offers initial evidence that regular engagement with a Facebook page can have a strong and positive impact on behavior that can markedly benefit organizations, including blood banks. It shows that these social media efforts can be successful despite limited attitudinal effects. Finally, we provide insights and actionable recommendations that blood banks and other organizations can follow to replicate these results, to persuade people to do good.

Acknowledgments

Conflicts of Interest

All authors declare no other conflicts of interest.

Funding

This work was funded by Sanquin Blood Supply (PPOC 18/13).

References

Aaker, J., Vohs, K. D., & Mogilner, C. (2010). Nonprofits Are Seen as Warm and For-Profits as Competent: Firm Stereotypes Matter. *Journal of Consumer Research*, *37*(2), 224–237. https://doi.org/10.1086/651566

Alanzi, T., & Alsaeed, B. (2019). Use of Social Media in the Blood Donation Process in Saudi Arabia. *Journal of Blood Medicine*, *10*, 417–423. https://doi.org/10.2147/JBM.S217950

Bail, C. A. (2016). Cultural carrying capacity: Organ donation advocacy, discursive framing, and social media engagement. *Social Science & Medicine*, *165*, 280–288. https://doi.org/10.1016/j.socscimed.2016.01.049

Bednall, T. C., Bove, L. L., Cheetham, A., & Murray, A. L. (2013). A systematic review and meta-analysis of antecedents of blood donation behavior and intentions. *Soc Sci Med*, *96*, 86–94. https://doi.org/10.1016/j.socscimed.2013.07.022

Beukeboom, C. J., Kerkhof, P., & de Vries, M. (2015). Does a Virtual Like Cause Actual Liking? How Following a Brand's Facebook Updates Enhances Brand Evaluations and Purchase Intention. *Journal of Interactive Marketing*, *32*, 26–36. https://doi.org/10.1016/j.intmar.2015.09.003

Cameron, A. M., Massie, A. B., Alexander, C. E., Stewart, B., Montgomery, R. A., Benavides, N. R., Fleming, G. D., & Segev, D. L. (2013). Social Media and Organ Donor Registration: The Facebook Effect. *American Journal of Transplantation*, *13*(8), 2059–2065. https://doi.org/10.1111/ajt.12312

Campbell, D. A., Lambright, K. T., & Wells, C. J. (2014). Looking for Friends, Fans, and Followers? Social Media Use in Public and Nonprofit Human Services. *Public Administration Review*, *74*(5), 655–663. https://doi.org/10.1111/puar.12261

Dijkmans, C., Kerkhof, P., & Beukeboom, C. J. (2015). A stage to engage: Social media use and corporate reputation. *Tourism Management*, *47*, 58–67.

https://doi.org/10.1016/j.tourman.2014.09.005

Dongen, A. van. (2015). Easy come, easy go. Retention of blood donors. *Transfusion Medicine*, *25*(4), 227–233. https://doi.org/10.1111/tme.12249

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The Benefits of Facebook "Friends:" Social Capital and College Students' Use of Online Social Network Sites. *Journal of Computer-Mediated Communication*, *12*(4), 1143–1168. https://doi.org/10.1111/j.1083-6101.2007.00367.x

Ferguson, E., Atsma, F., de Kort, W., & Veldhuizen, I. (2012). Exploring the pattern of blood donor beliefs in first-time, novice, and experienced donors: Differentiating reluctant altruism, pure altruism, impure altruism, and warm glow. *Transfusion*, *52*(2), 343–355. https://doi.org/10.1111/j.1537-2995.2011.03279.x

Fishbein, M., & Ajzen, I. (2010). *Predicting and Changing Behavior: The Reasoned Action Approach*. Psychology Press.

France, C. R., France, J. L., Wissel, M. E., Ditto, B., Dickert, T., & Himawan, L. K. (2013). Donor anxiety, needle pain, and syncopal reactions combine to determine retention: A path analysis of two-year donor return data. *Transfusion*, *53*(9), 1992–2000. https://doi.org/10.1111/trf.12069

Gillet, P., Rapaille, A., Benoît, A., Ceinos, M., Bertrand, O., de Bouyalsky, I., Govaerts, B., & Lambermont, M. (2015). First-time whole blood donation: A critical step for donor safety and retention on first three donations. *Transfusion Clinique et Biologique*, *22*(5), 312–317. https://doi.org/10.1016/j.tracli.2015.09.002

Harrell, S., Simons, A. M., & Clasen, P. (2022). Promoting blood donation through social media: Evidence from Brazil, India and the USA. *Social Science & Medicine*, *315*, 115485. https://doi.org/10.1016/j.socscimed.2022.115485

Jonkers, T., Boekee, S., & van der Veer, N. (2024). *Nationaal Social Media Onderzoek 2024*.

Newcom research & consultancy.

Kasraian, L., & Tavassoli, A. (2012). Relationship between first-year blood donation, return rate for subsequent donation and demographic characteristics. *Blood Transfusion*, *10*(4), 448–452. https://doi.org/10.2450/2012.0097-11

Kaushal, K., Kaur, H., Sarma, P., Bhattacharyya, A., Sharma, D. J., Prajapat, M., Pathak, M., Kothari, A., Kumar, S., Rana, S., Kaur, M., Prakash, A., Mirza, A. A., Panda, P. K., Vivekanandan, S., Omar, B. J., Medhi, B., & Naithani, M. (2022). Serum ferritin as a predictive biomarker in COVID-19. A systematic review, meta-analysis and meta-regression analysis. *Journal of Critical Care*, *67*, 172–181. https://doi.org/10.1016/j.jcrc.2021.09.023

Kim, A. J., & Ko, E. (2012). Do social media marketing activities enhance customer equity? An empirical study of luxury fashion brand. *Journal of Business Research*, *65*(10), 1480–1486. https://doi.org/10.1016/j.jbusres.2011.10.014

Lattimore, S., Wickenden, C., & Brailsford, S. R. (2015). Blood donors in England and North Wales: Demography and patterns of donation. *Transfusion*, *55*(1), 91–99. https://doi.org/10.1111/trf.12835

Liadeli, G., Sotgiu, F., & Verlegh, P. W. J. (2023). A Meta-Analysis of the Effects of Brands' Owned Social Media on Social Media Engagement and Sales. *Journal of Marketing*, *87*(3), 406–427. https://doi.org/10.1177/00222429221123250

Masser, B., Ferguson, E., Merz, E.-M., & Williams, L. (2020). Beyond Description: The Predictive Role of Affect, Memory, and Context in the Decision to Donate or Not Donate Blood. *Transfusion Medicine and Hemotherapy: Offizielles Organ Der Deutschen Gesellschaft Fur Transfusionsmedizin Und Immunhamatologie*, *47*(2), 175–185. https://doi.org/10.1159/000501917

Masser, B. M., White, K. M., Hyde, M. K., Terry, D. J., & Robinson, N. G. (2009). Predicting

blood donation intentions and behavior among Australian blood donors: Testing an extended theory of planned behavior model. *Transfusion*, *49*(2), 320–329.

Merz, E.-M., & van der Meer, P. F. (2018). An introduction to the special issue Blood Donor Research. *ISBT Science Series*, *13*(4), 373–374. https://doi.org/10.1111/voxs.12480

Prinsze, F. (2024). *Crisis donors as a short-term relief or long-term solution?* Regional Congress of the ISBT, Gothenburg, Sweden.

Ramondt, S., Kerkhof, P., & Merz, E.-M. (2022). Blood Donation Narratives on Social Media: A Topic Modeling Study. *Transfusion Medicine Reviews*, *36*(1), 58–65. https://doi.org/10.1016/j.tmrv.2021.10.001

Ramondt, S., Zijlstra, M., Kerkhof, P., & Merz, E.-M. (2020). Barriers to blood donation on social media: An analysis of Facebook and Twitter posts. *Transfusion*, *60*(10), 2294–2306. https://doi.org/10.1111/trf.15998

Sanquin Bloedvoorziening. (2022). *Stichting Sanquin Bloedvoorziening, Amsterdam Jaarverslag 2022* (pp. 1–98). Sanquin Bloedvoorziening. https://www.sanquin.nl/binaries/content/assets/sanquinnl/over-sanquin/pers--actueel/jaarverslagen/jaarverslag-stichting-sanquin-bloedvoorziening-2022.pdf

Schreiber, G. B., Sharma, U. K., Wright, D. J., Glynn, S. A., Ownby, H. E., Tu, Y., Garratty, G., Piliavin, J., Zuck, T., & Gilcher, R. (2005). First year donation patterns predict long-term commitment for first-time donors. *Vox Sang*, *88*(2), 114–121.

Spekman, M. L. C., Ramondt, S., Quee, F. A., Prinsze, F. J., Veld, E. M. J. H. in ’t, Hurk, K. van den, & Merz, E.-M. (2021). New blood donors in times of crisis: Increased donation willingness, particularly among people at high risk for attracting SARS-CoV-2. *Transfusion*, *61*(6), 1822–1829. https://doi.org/10.1111/trf.16334

Suraj, S., Tendolkar, V. D., Bankar, N., Kalambe, S., & Gawande, U. (2021). Blood Donation: Bridging the Gap between Need and Supply. *NVEO - NATURAL VOLATILES &*

ESSENTIAL OILS Journal | NVEO, 1234–1239.

Valkenburg, P. M. (2022). Social media use and well-being: What we know and what we need to know. *Current Opinion in Psychology*, *45*, 101294. https://doi.org/10.1016/j.copsyc.2021.12.006

van Dongen, A., Abraham, C., Ruiter, R. A., Schaalma, H. P., de Kort, W. L., Dijkstra, J. A., & Veldhuizen, I. J. (2012). Are lapsed donors willing to resume blood donation, and what determines their motivation to do so? *Transfusion*, *52*(6), 1296–1302. https://doi.org/10.1111/j.1537-2995.2011.03447.x

van Dongen, A., Ruiter, R. A., Abraham, C., & Veldhuizen, I. J. T. (2014). Predicting blood donation maintenance: The importance of planning future donations. *Transfusion*, *54*, 821–827. https://doi.org/10.1111/trf.12397

Vinkenoog, M., van den Hurk, K., van Kraaij, M., van Leeuwen, M., & Janssen, M. P. (2020). First results of a ferritin-based blood donor deferral policy in the Netherlands. *Transfusion*, *60*(8), 1785–1792. https://doi.org/10.1111/trf.15906

Wiersum-Osselton, J., Prinsze, F., Van Den Brekel, E., Van Dongen, A., Hermans, F., Bokhorst, A., & Der Kreek, T. M. (2022). An intervention study for the prevention of vasovagal reactions and evaluating donors' experience: Analysis of donors' return for subsequent donation. *Vox Sanguinis*, *117*(3), 313–320. https://doi.org/10.1111/vox.13196

Williamson, L. M., & Devine, D. V. (2013). Challenges in the management of the blood supply. *Lancet*, *381*(9880), 1866–1875. https://doi.org/10.1016/S0140-6736(13)60631-5

Wooi Seong, K., Raffeal, V., & Ayob, Y. (2014). Adopting a proactive approach to blood shortages: Experience from the National Blood Centre, Malaysia. *ISBT Science Series*, *9*(1), 189–192. https://doi.org/10.1111/voxs.12104

Young, J. A. (2017). Facebook, Twitter, and Blogs: The Adoption and Utilization of Social Media in Nonprofit Human Service Organizations. *Human Service Organizations: Management,*

Leadership & Governance, *41*(1), 44–57. https://doi.org/10.1080/23303131.2016.1192574

Zeng, M., Li, H., Song, X., Jiang, J., & Chen, Y. (2023). Factors Associated with Willingness toward Organ Donation in China: A Nationwide Cross-Sectional Analysis Using a Social–Ecological Framework. *Healthcare*, *11*(6), Article 6. https://doi.org/10.3390/healthcare11060824

Zou, S., Stramer, S. L., & Dodd, R. Y. (2012). Donor testing and risk: Current prevalence, incidence, and residual risk of transfusion-transmissible agents in US allogeneic donations. *Transfus Med Rev*, *26*(2), 119–128. https://doi.org/10.1016/j.tmrv.2011.07.007

EFFECTS OF FACEBOOK STATUS UPDATES

APPENDIX A Questionnaire

Vragenlijst 1: de voormeeting

1. Attitude

Hieronder staan zes rijen met aan beide kanten steeds twee uiterste begrippen. Per rij kunt u één van de vijf hokjes aankruisen. Zet per rij een kruisje in het hokje dat het meest op u van toepassing is.

Bloed/plasma geven vind ik:

	1	2	3	4	5	
Negatief						Positief
Goed						Slecht
Zinloos						Zinvol
Prettig						Onprettig
Vervelend						Leuk
Onaantrekkelijk						Aantrekkelijk

2. Intention

Wilt u aangeven in hoeverre u het eens of oneens bent met de volgende stelling?
1 = helemaal mee oneens; 2= mee oneens; 3 = neutraal; 4 = mee eens; 5 = helemaal mee eens

	Helemaal mee oneens (1)				Helemaal mee eens (5)
Ik ben van plan om bloed/plasma te blijven geven, zolang mijn gezondheid dat toestaat					
Ik blijf bloed/plasma donor totdat ik niet meer mag doneren					

3. Brand attitude

Wat is uw indruk van Sanquin? Wilt u op een schaal van 1 tot 9 aangeven wat u van Sanquin vindt?

Slecht (1)								Goed (9)
Niet leuk (1)								Leuk (9)
Onaantrekkelijk (1)								Aantrekkelijk (9)
Kwalitatief slecht (1)								Kwalitatief goed (9)

4. Conversational human voice

Wilt u op een schaal van 1 tot 7 aangeven in hoeverre u het eens of oneens bent

EFFECTS OF FACEBOOK STATUS UPDATES

met de volgende stellingen? In mijn opinie, Sanquin…

	Helemaal niet mee eens (1)						Helemaal mee eens (7)
nodigt mensen uit tot conversatie							
staat open voor dialoog							
communiceert alsof we een gesprek voeren							
probeert te communiceren met een menselijke stem							
probeert interessant te communiceren							
gebruikt humor in communicatie							
probeert communicatie aangenaam te maken							
zou een fout toegeven							
levert snelle feedback op kritiek in een directe manier zonder kritisch te zijn							
behandelt mij en anderen als mens							

5. Warmth & competence

Ik vind dat Sanquin…

	Helemaal niet mee eens (1)						Helemaal mee eens (7)
Warm is							
Vrijgevig is							
Vriendelijk is							
Competent is							
Efficiënt is							
Effectief is							

6. Contemplation

Hoe vaak denkt u aan bloed doneren?

1 = Nooit
2 = Eens per jaar
3 = Een paar keer per jaar
4 = Eens elke twee maanden
5 = Eens per maand
6 = Eens per week
7 = Een paar keer per week
8 = Eens per dag
9 = Een paar keer per dag

Hoe vaak denkt u aan Sanquin?

1 = Nooit
2 = Eens per jaar

3 = Een paar keer per jaar
4 = Eens elke twee maanden
5 = Eens per maand
6 = Eens per week
7 = Een paar keer per week
8 = Eens per dag
9 = Een paar keer per dag

7. General Facebook time

Hoe vaak zit u op Facebook?

1 = Nooit
2 = Eens per jaar
3 = Een paar keer per jaar
4 = Eens elke twee maanden
5 = Eens per maand
6 = Eens per week
7 = Een paar keer per week
8 = Eens per dag
9 = Een paar keer per dag
10 = Eens elke 2 uur
11 = Eens per uur
12 = Een paar keer per uur

8. General Facebook Intensity

Wilt u op een schaal van 1 (=helemaal niet mee eens) tot 5 (=helemaal mee eens) aangeven in hoeverre u het eens of oneens bent met de volgende stellingen?

	Helemaal niet mee eens (1)					Helemaal mee eens (5)
Facebook is onderdeel van mijn dagelijkse activiteit						
Ik vertel met trots dat ik op Facebook zit						
Facebook is onderdeel geworden van mijn dagelijkse routine						
Ik voel me vreemd als ik een tijdje niet op Facebook ben ingelogd						
Ik voel me onderdeel van de Facebook gemeenschap						
Ik zou het jammer vinden als Facebook stopt.						

9. Facebook exposure

Hoe vaak heeft u in de vorige maand de Facebook pagina van Sanquin bezocht?

1 = Nooit
2 = 1-3 keer
3 = 4-6 keer
4 = 7-9 keer
5 = 10-12 keer
6 = 12-15 keer
7 = meer dan 15 keer

Hoe vaak heeft u in de vorige maand Facebook berichten gezien van Sanquin?

1 = Nooit
2 = 1-3 keer
3 = 4-6 keer
4 = 7-9 keer
5 = 10-12 keer
6 = 12-15 keer
7 = meer dan 15 keer

10. Bent u lid van de Sanquin Facebook pagina doordat u de pagina heeft ‘geliked’?
Ja (1) / Nee (0)
Als nee ->Randomisatie naar controle conditie, standaard nieuwe volger, en uitbreide nieuwe volger. Elk persoon krijgt een groepscode (bijvoorbeeld ‘1’ voor de controle groep) toegewezen voor identificatie tijdens de nameting
Standaard nieuwe volger: ga door naar vraag 12
Uitgebreide nieuwe volger: ga door naar vraag 15
Controle conditie: ga door naar vraag 18

11. Hoelang bent u al lid van de Sanquin Facebook pagina?

1 = Minder dan 1 week
2 = 1-3 weken
3 = 1-2 Maanden
4 = 3-6 Maanden
5 = 6-12 Maanden
6 = 1-2 Jaar
7 = meer dan 2 jaar

Ga door naar vraag 18

12. Voor dit onderzoek is het belangrijk dat u de Sanquin Facebook pagina volgt door de pagina te ‘liken’. Over twee maanden wordt u uitgenodigd om hierover een aantal vragen in te vullen.

Zou u de Sanquin Facebook pagina willen liken? Voor dit onderzoek is het van belang dat u direct de Sanquin Facebook pagina liked. Dit kan doormiddel van de onderstaande link:

LINK

Volgende pagina

13. Heeft u de pagina geliked? Ja (1) / Nee (0)
Als ja ->ga door naar vraag 18

14. Waarom heeft u de pagina niet geliked? _____
Ga door naar vraag 18

15. Voor dit onderzoek is het belangrijk dat u de Sanquin Facebook pagina volgt door de pagina te ‘liken’ via de link onder dit bericht. Over twee maanden wordt u uitgenodigd om hierover een aantal vragen in te vullen.

Zou u de Sanquin Facebook pagina willen liken via de onderstaande link? Voor dit onderzoek is het van belang dat u direct de Sanquin Facebook pagina liked.

LINK

Volgende pagina

16. Heeft u de pagina geliked? Ja (1) / Nee (0)
Als ja ->ga door naar vraag 18

17. Waarom heeft u de pagina niet geliked? _____

18. Wat is uw geslacht?
0 = man
1 = vrouw
2 = anders
3 = geen antwoord

19. Wat is uw burgerlijke staat?
1 = Ongehuwd
2 = Gehuwd of geregistreerd partnerschap of partner?
3 = Gescheiden
4 = Weduwe / weduwnaar

20. Heeft u kinderen? Ja (1)/ Nee (0)
Als nee -> ga door naar vraag 20

21. Hoeveel kinderen heeft u? (In getallen, bijvoorbeeld : 2) ____

22. Wat is de hoogste schoolopleiding die u met een diploma heeft afgerond?
1 = Geen
2 = Lager onderwijs (basisonderwijs)
3 = Lager beroepsonderwijs (VMBO, LBO: bijv. LTS, LAS, LHNO, VBO, LEAD)
4 = Middelbaar voortgezet onderwijs bijv. ULO, MULO, MAVO, LAVO, VGLO)
5 = Hoger voortgezet onderwijs (bijv. HAVO, VWO, MMS, HBS, atheneum, gymnasium)
6 = Hoger beroepsonderwijs (HBO: bv. HTS, HAS, HEAO, PABO)
7 = Universiteit

23. Tot welke groep(en) behoort u? (meerdere antwoorden mogelijk)
1 = Ik werk (loondienst, zelfstandig ondernemer, zzp’er)
2 = Ik ben met (vervroegd) pensioen (AOW, VUT, FPU, OBU)
3 = Ik zit in de Ziektewet (ZW)
4 = Ik ben werkloos/werkzoekend (WW, WWB)
5 = Ik ben arbeidsongeschikt (WIA (WAO), AAW, WAZ, WAJONG)
6 = Ik ben huisvrouw/huisman
7 = Ik ben student/scholier met een bijbaan
8 = Ik ben student/scholier zonder bijbaan
9 = Anders

24. Wat is uw etnische achtergrond? (Heeft u ouders met een verschillende etnische achtergrond? Kruis dan meerdere antwoorden aan)
1 = Nederlands
2 = Surinaams
3 = Antilliaans
4 = Marokkaans
5 = Turks
6 = Afrikaans (anders dan

Marokkaans)
7 = Aziatisch (anders dan Turks)
8 = Arabisch
9 = Indonesisch
10 = Anders

Vragenlijst 2 & 3: de nameting

1. Bent u bekend met de Facebook pagina van Sanquin? Ja (1) / Nee (0)
Als nee -> (ga door naar vraag 7)
Als ja,
Controle en huidige volger groep: ga door naar vraag 2
Standaard nieuwe & uitgebreide nieuwe volger: ga door naar vraag 3

2. Bent u lid van de Sanquin Facebook pagina doordat u de pagina heeft 'geliked'? Ja (1) / Nee (0)
Als nee -> (skip naar vraag 7)
Als ja -> (ga door naar vraag 5

3. Standaard nieuwe volger & uitgebreide nieuwe volger manipulatie check
Heeft de Facebook pagina van Sanquin 'geliked' toen we dat aan u vroegen in de eerste survey?
Als nee -> (ga door naar vraag 7)

4. Liked u de Facebook pagina van Sanquin nog steeds?
1 = Ja
2 = Nee, ik heb de pagina de dag van de eerste survey 'geunliked'
3 = Nee, ik heb de pagina na een paar dagen 'geunliked'
4 = Nee, ik heb de pagina na 1 tot 2 weken 'geunliked'
5 = Nee, ik heb de pagina na 3 tot 4 weken 'geunliked'
6 = Nee, ik heb de pagina afgelopen maand 'geunliked'
Als 2 - 6 -> (ga door naar vraag 7)

5. Facebook exposure
Hoe vaak heeft u in de vorige maand de Facebook pagina van Sanquin bezocht?
1 = Nooit
2 = 1-3 keer
3 = 4-6 keer
4 = 7-9 keer
5 = 10-12 keer
6 = 12-15 keer
7 = meer dan 15 keer

Hoe vaak heeft u in de vorige maand Facebook berichten gezien van Sanquin?
1 = Nooit
2 = 1-3 keer
3 = 4-6 keer
4 = 7-9 keer
5 = 10-12 keer
6 = 12-15 keer
7 = meer dan 15 keer

EFFECTS OF FACEBOOK STATUS UPDATES

6. Facebook attitude T_2

Wilt u op een schaal van 1 (=helemaal niet mee eens) tot 5 (=helemaal mee eens) aangeven in hoeverre u het eens of oneens bent met de volgende stellingen?

	Helemaal niet mee eens (1)					Helemaal mee eens (5)
Ik zou de pagina van Sanquin graag blijven volgen						
Ik ben tevreden met de inhoud van de Facebook pagina van Sanquin						
Ik voel mij comfortabel in het volgen van de Facebook pagina van Sanquin						
Ik vind dat het bekijken van de Facebook pagina/post van Sanquin een goede manier is van besteden van mijn tijd						
In vergelijking met andere Facebook pagina's die ik like, vind ik de Facebook pagina van Sanquin één van de beste						

	Helemaal niet leuk (1)					Heel leuk (10)
Hoe leuk vond u de Facebook pagina van Sanquin						
Hoe leuk vond u de Facebook berichten van Sanquin						

7. Attitude

Hieronder staan zes rijen met aan beide kanten steeds twee uiterste begrippen. Per rij kunt u één van de vijf hokjes aankruisen. Zet per rij een kruisje in het hokje dat het meest op u van toepassing is.

Bloed / plasma geven vind ik:

	1	2	3	4	5	
Negatief						Positief
Goed						Slecht
Zinloos						Zinvol
Prettig						Onprettig
Vervelend						Leuk
Onaantrekkelijk						Aantrekkelijk

8. Intention

Wilt u aangeven in hoeverre u het eens of oneens bent met de volgende stelling?

	Helemaal mee oneens (1)				Helemaal mee eens (5)
Ik ben van plan om bloed / plasma te blijven geven, zolang mijn gezondheid dat toestaat					
Ik blijf bloed-/plasma donor totdat ik niet meer mag doneren					

9. Brand attitude

Wat is uw indruk van Sanquin? Wilt u op een schaal van 1 tot 9 aangeven wat u van Sanquin vindt?

Slecht (1)								Goed (9)
Niet leuk (1)								Leuk (9)
Onaantrekkelijk (1)								Aantrekkelijk (9)
Kwalitatief slecht (1)								Kwalitatief goed (9)

10. Conversational human voice

Wilt u op een schaal van 1 tot 7 aangeven in hoeverre u het eens of oneens bent met de volgende stellingen? In mijn opinie, Sanquin…

	Helemaal niet mee eens (1)						Helemaal mee eens (7)
nodigt mensen uit tot conversatie							
Sanquin staat open voor dialoog							
communiceert alsof we een gesprek voeren							
probeert te communiceren met een menselijke stem							
probeert interessant te communiceren							
gebruikt humor in communicatie							
probeert communicatie aangenaam te maken							
zou een fout toegeven							
levert snelle feedback op kritiek in een directe manier zonder kritisch te zijn							
behandelt mij en anderen als mens							

EFFECTS OF FACEBOOK STATUS UPDATES

11. Warmth & competence

Ik vind dat Sanquin…

	Helemaal niet mee eens (1)						Helemaal mee eens (7)
Warm is							
Vrijgevig is							
Vriendelijk is							
Competent is							
Efficiënt is							
Effectief is							

12. Contemplation

Hoe vaak denkt u aan bloed doneren?

1 = Nooit
2 = Eens per jaar
3 = Een paar keer per jaar
4 = Eens elke twee maanden
5 = Eens per maand
6 = Eens per week
7 = Een paar keer per week
8 = Eens per dag
9 = Een paar keer per dag

Hoe vaak denkt u aan Sanquin?

1 = Nooit
2 = Eens per jaar
3 = Een paar keer per jaar
4 = Eens elke twee maanden
5 = Eens per maand
6 = Eens per week
7 = Een paar keer per week
8 = Eens per dag
9 = Een paar keer per dag

13. General Facebook time

Hoe vaak zit je op Facebook?

1 = Nooit
2 = Eens per jaar
3 = Een paar keer per jaar
4 = Eens elke twee maanden
5 = Eens per maand
6 = Eens per week
7 = Een paar keer per week
8 = Eens per dag
9 = Een paar keer per dag
10 = Eens elke 2 uur
11 = Eens per uur
12 = Een paar keer per uur

EFFECTS OF FACEBOOK STATUS UPDATES

14. General Facebook Intensity

Wilt u op een schaal van 1 (=helemaal niet mee eens) tot 5 (=helemaal mee eens) aangeven in hoeverre u het eens of oneens bent met de volgende stellingen?

	Helemaal niet mee eens (1)					Helemaal mee eens (5)
Facebook is onderdeel van mijn dagelijkse activiteit						
Ik vertel met trots dat ik op Facebook zit						
Facebook is onderdeel geworden van mijn dagelijkse routine						
Ik voel me vreemd als ik een tijdje niet op Facebook ben ingelogd						
Ik voel me onderdeel van de Facebook gemeenschap						
Ik zou het jammer vinden als Facebook stopt.						

EFFECTS OF FACEBOOK STATUS UPDATES

APPENDIX B Cross-sectional differences

For H2, we expected both current and new blood bank Facebook followers to have more positive attitudes and higher intentions to donate blood compared to non-followers. The analyses do indeed show differences in attitude towards blood donation, intention to donate blood, attitude towards the blood bank, and blood bank contemplation between the groups after two months (resp. $F (2, 1159) = 9.52$, $p < .001$; $F (2, 1159) = 3.10$, $p = .045$; $F (2, 1159) = 4.42$, $p = .012$; $F (2, 968) = 4.46$, $p = .012$). Yet, Bonferroni pairwise comparisons show that the higher and more positive values only apply to the observational group. In contrast with H2, we do not see higher or more positive values of attitudes intentions, and contemplation regarding the blood bank and donating for participants in the experimental group (relative to the control group). Comparisons show a more positive attitude toward blood donation for the observational compared to the control group ($p = .002$) and experimental group ($p < .001$), more positive attitudes towards the blood bank for the observational group compared with the control group ($p = .026$) and experimental group ($p = .020$) for. For intention to donate blood and blood bank contemplation, Bonferroni pairwise comparisons show higher scores for the observational compared with the control group only (resp. $p = .035$; $p = .010$). No differences exist between donorship contemplation, warmth, and competence (resp. $F (2, 1159) = .54$, $p = .584$; $F (2, 1159) = 1.90$, $p = .149$; $F (2, 1159) = .23$, $p = .793$).

The differences after two months largely dissipate after one year. In contrast with H2, we no longer see differences between the groups after one year for attitudes towards blood donation, intention to donate, and attitude towards the blood bank (resp. $F (2, 413) = 1.36$, $p = .257$; $F (2, 413) = 1.13$, $p = .323$; $F (2, 413) = 1.48$, $p = .229$). In addition, no differences after one year are found for warmth $F (2, 413) = .32$, $p =.730$, competence $F (2, 413) = .07$, $p = .935$, and contemplation regarding donorship and the blood bank $F (2, 413) = .42$, $p = .657$. Only for contemplation about the blood bank we find differences between groups after one year, $F (2, 321) = 3.23$, $p = .041$

(see Table 3 for means (SDs)). Bonferroni pairwise comparisons show that the observational group contemplates more about the blood bank compared to the control group (p = .033).

Table 2. Main attitudinal outcomes after two months.

Depend. variables	Experiment (n = 393)			Control (n = 496)			Observational (n = 273)		
	Pre	post	p	Pre	post	p	Pre	post	p
Attitude blood donation	4.26 (.43)	4.16 (.40)	<.001	4.17 (.43)	4.19 (.45)	.326	4.28 (.48)	4.31 (.48)	.377
Intention blood donation	4.36 (.81)	4.22 (.86)	.005	4.29 (.82)	4.17 (.87)	.011	4.42 (.77)	4.33 (.81)	.158
Attitude Blood bank	7.49 (1.02)	6.98 (1.23)	<.001	7.33 (1.12)	7.00 (1.23)	<.001	7.59 (1.09)	7.25 (1.39)	<.001
Warmth	5.59 (.84)	5.03 (.98)	<.001	5.44 (.92)	5.09 (.97)	<.001	5.59 (.99)	5.18 (1.14)	<.001
Competence	5.85 (.90)	5.33 (1.07)	<.001	5.73 (.94)	5.38 (1.03)	<.001	5.76 (1.07)	5.37 (1.18)	<.001
Contemplation donorship	4.08 (1.32)	3.83 (1.21)	<.001	4.04 (1.16)	3.82 (1.27)	<.001	3.96 (1.35)	3.80 (1.39)	.094
Contemplation Blood bank	3.31 (1.62)	3.95 (1.46)	<.001	3.28 (1.6)	3.78 (1.43)	<.001	3.79 (1.66)	4.14 (1.56)	.001

Table 3. Main attitudinal outcomes after a year.

Depend. variables	Experiment (n = 151)			Control (n = 158)			Observational (n = 107)		
	Pre	post	p	Pre	post	p	Pre	post	p
Attitude blood	4.37	4.22	<.001	4.26 (.47)	4.19 (.47)	.093	4.45 (.43)	4.28 (.47)	<.001

donation	(.50)	(.37)							
Intention blood donation	4.60 (.70)	4.26 (.73)	<.001	4.46 (.76)	4. 22 (.79)	.002	4.70 (.55)	4.36 (.89)	<.001
Attitude blood bank	7.63 (1.06)	7.13 (1.19)	<.001	7.54 (1.08)	7.06 (1.30)	<.001	7.76 (1.01)	7.33 (1.33)	<.001
Warmth	5.72 (.74)	5. 07 (.92)	<.001	5.69 (.84)	5. 08 (1.01)	<.001	5.77 (.78)	5.16 (1.06)	<.001
Competence	5.89 (.81)	5.37 (1.02)	<.001	5.84 (.82)	5.36 (1.06)	<.001	6.02 (.72)	5.41 (1.18)	<.001
Contemplation donorship	4.15 (1.32)	3.90 (1.37)	.062	3.75 (1.13)	3.75 (1.27)	1.000	4.10 (1.21)	3.72 (1.41)	.015
Contemplation blood bank	3.53 (1.61)	3.94 (1.35)	.005	3.41 (1.50)	3.71 (1.26)	.026	3.47 (1.59)	4.18 (1.40)	<.001

Supplementary Files