Research Article

The Relative Effectiveness of Altruistic vs. Egoistic Messages in Influencing Non-donors' Intention to Donate Blood in Hong Kong

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Abstract: Prior research found that egoistic (vs. altruistic) messages were more effective in influencing the willingness to blood donation in Caucasian British students who were committed blood donors. We investigated what types of messages could effectively influence the blood donation intention of young Chinese students who had never donated blood (non-donors). Participants were asked to read a poster showing either an altruistic or egoistic message that was framed either positively or negatively. Results revealed that Chinese non-donors were more willing to donate blood when they read an altruistic rather than an egoistic message. The negatively-framed egoistic-focused message was the least effective in persuading Chinese non-donors to donate blood. Suggestions for future blood donation promotion campaigns and advertisements were made.

Keywords: persuasive message, blood donation, egoistic, altruistic, Chinese, non-donor

1. Introduction

Blood donation is a typical example of prosocial behavior which is defined as an action that enhances the welfare of others (Batson, 1998). The intention behind donating blood varies from person to person: some studies (e.g., Luo, 2012; Sojka & Sojka, 2008) have found that blood donation is an act triggered by altruistic motives, while other studies have shown it to be an egoistic act, i.e., donating blooding to obtain self-benefit and reward (Ferguson et al., 2008; Lafitte, 2009).

In prior research, Ferguson et al. (2008) investigated the relative power of altruistic vs. egoistic (they used the term benevolent) beliefs in affecting blood donors' intentions. In their study, participants were randomly presented with one of the four leaflets containing either an altruistic message or an egoistic message that was framed either positively or negatively. They found that blood donations were strongly associated with personal (not societal) benefits, and egoistic beliefs were the only beliefs that predicted donors' intentions. Most importantly, they showed that egoistic messages, relative to altruistic messages, were more effective in persuading committed donors to donate blood. No significant framing effect was reported during this study.

Firstly, it should be noted that the participants in Ferguson et al.'s (2008) study were all college students from the United Kingdom, therefore, it is uncertain whether the results from this western study could be generalized to those from a non-western cultural background, such as Chinese college students. Secondly, their western participants were mainly

committed blood donors. In the non-western cultural context, there are many deterrents that hindered people from being committed blood donors. For instance, the Chinese tend to hold the traditional superstitious belief that giving out blood would adversely affect their health as the life energy "Qi" was removed from the body (Tison et al., 2007). Knowing this, it is essential to encourage non-donors to donate blood in a Chinese cultural context. The aim of the current study is to investigate what type of messages are more effective in influencing non-donors' willingness to donate blood in a Chinese cultural context.

To the best of our knowledge, the study by Ferguson et al. (2008) is the only study that has directly compared the relative effectiveness of altruistic vs. egoistic messages in predicting blood donation intention. No similar studies have been done afterward, especially no similar studies have been carried out with a Chinese cultural background and traditions in mind. In the current study, we hypothesize that altruistic messages should be more effective compared to egoistic messages in affecting the Chinese population's intention to donate blood.

To elaborate, Chinese people are generally influenced by Confucius's idea of emphasizing interrelatedness and kindness to others rather than on personal wishes or desires (Markus & Kitayama, 1991), and they tend to have an interdependent self-construal which focuses more on social obligations (see Oyserman et al., 1998) and meeting the needs and expectations of others (Hashimoto & Yamagishi, 2013). Indeed, past research reported that interdependent individuals (e.g., Chinese) showed a greater benevolence when the behavior was beneficial to the social group, especially to the in-group members (Duclos & Barasch, 2014). More related to the current study, Xia et al. (2009) reported that Chinese university students were motivated by both altruistic and humanitarian motives in blood donation. Similarly, Luo (2012) found that altruism was the strongest motivator for blood donation in Chinese people. Other studies using Chinese samples generally supported that volunteer donors are more likely to be motivated by altruism (Tison et al., 2007; Zaller et al., 2005). These findings seem to support that the Chinese were more likely to hold an altruistic belief in blood donation.

Ferguson et al. (2008) did not find a significant framing effect in their British sample of those who were committed to being blood donors. It is uncertain if message framing is effective in persuading Chinese non-donors. Tversky and Kahneman (1981) argued that people's responses may differ when the message of the same content is framed differently. The difference in self-regulatory tendencies between collectivistic and individualistic cultures could possibly influence how people respond to positively-framed vs negatively-framed messages. People in individualistic cultures are more likely to approach positive outcomes (than avoid negative outcomes) because they want to maintain their independent self-construal and distinguish themselves from others positively. Nevertheless, people in collectivistic cultures tend to avoid making mistakes (than approach positive outcomes), because they want to maintain their interdependent self-construal and harmonious relationship with others (Elliot et al., 2001). Uskul et al. (2009) pointed out that negatively-framed messages would be more effective than positively-framed messages among people from collectivistic cultures, and the opposite is true for people from individualistic cultures.

Interestingly, a study by Balbo et al. (2015) reported that the effectiveness of framing (positive vs. negative) also depends on the perceived social distance from the blood recipient. In their study, they presented western participants with an altruistic message either framed positively or negatively. The positively-framed message states some positive effects of blood donation (e.g., "*Giving blood does save lives*"), and the negatively-framed message states some negative consequences of not donating blood (e.g., "*Not giving blood does not save lives*"). They manipulated the "social distance perception" in participants by letting them read a testimonial written by a blood recipient who was described as either sharing the same age range as the participants (proximal distance) or not (distal distance).

According to Balbo et al. (2015), a proximal social distance perception was established when the blood recipient was described as someone within the same age range as the participants. They reported that, under this proximal condition, participants showed a greater intention to donate blood when they read the negatively- (vs. positively-) framed message. However, when the blood recipient was described as not sharing the same age range with the participants, it constitutes a distal social distance perception between the participants and the recipient. Under this distal condition, the pattern reversed: participants showed a greater intention to donate blood when they read the positively- (vs. negatively-) framed message. In our current study, the participants were non-donors who do not engage in any blood donation activity. It is uncertain whether such non-donor status may or may not allow them to form a connection between themselves and the respective blood recipients.

Summarizing the above, past studies have shown that: a negatively-framed message was generally found to be

more efficient than a positively-framed message in a collectivistic culture (Uskul et al., 2009), and when participants perceived having a distal social distance from the recipient, a positively-framed message was found to be more efficient than a negatively-framed message (Balbo et al., 2015). In our study, our participants are Chinese non-donors who might or might not perceive having a social distance from blood recipients. We aim to explore what message frame (positive vs. negative) would be more effective in persuading these groups of non-donors to donate blood.

1.1 *Blood donation in Hong Kong*

Based on Devine et al. (2010), Hong Kong's blood donation is non-remunerated and voluntary-based. Blood donation activities are administered by "Hong Kong Red Cross Blood Transfusion Service" (HKRCBTS) whose responsibilities are not limited to blood collection, screening, processing, and distribution, but also the recruitment of blood donors (Devine et al., 2010). According to Hong Kong Red Cross (2013), blood supply had increased by 17.2% from 2008 to 2012, but it is expected that people's demand for blood will increase by 25% in the coming 25 years as the population ages (Lee et al., 2008). This implies that the number of blood donors must increase in order to avoid a shortage of blood supply. Hong Kong Red Cross (2013) revealed that college and secondary school students constituted about 70% of the first-time recruited blood donors each year. Given that there will be a great demand for blood in the near future, it would be best that the HKRCBTS run a recruitment program that can effectively persuade young non-blood donors to donate blood. This will be an invaluable help in contributing to the enlargement of the blood donor pool in the future.

A close look at the recruitment campaigns run by HKRCBTS from 2001 to 2016 revealed that HKRCBTS had used both altruistic and egoistic messages in their blood donor recruiting posters. From 2001 to 2016, 15 posters were created, among them, 12 posters used altruistic messages, such as "*Let's join hands to give blood and help the needy*" (2004-2005 poster), but only 2 posters used egoistic messages: "*Every Blood Donor is a Hero*" (2012-2013 poster) and "*Give Blood @ 18, Saving Lives is Cool*" (2010-2011 poster). This was mainly aimed at attracting teenage donors. Another poster was more neutral (e.g., "*Red - The Spirit of Blood Donation*", 2008-2009 poster). Statistics showed that in the years the altruistic posters were used, the average blood collection increased by 1.44%, but in the years the egoistic posters were used, the average blood collection increased by 5.56%. It appears that an egoistic message had more of an effect on blood donation when it comes to a Hong Kong teenage group. This finding seems to be consistent with that of Ferguson et al. (2008). However, it should be noted that from 2002 to 2004 when the altruistic posters were used, Hong Kong was experiencing a SARS (Severe Acute Respiratory Syndrome) breakout and this situational factor could be related to a sharp decline in blood collection (an average of 2.44% drop), making it difficult to clearly delineate the pure effect of altruistic posters on blood collection.

1.2 *Overview of the present study*

The goal of our study is to explore the impact of message focus (altruistic vs. egoistic) and frame (positive vs. negative) on Chinese non-donors' blood donation intention. A 2 x 2 factorial experimental study was conducted. Chinese participants were randomly assigned to read one of four messages printed on a poster: positively-framed altruistic message (altruistic-positive), negatively-framed altruistic message (altruistic-negative), positively-framed egoistic message (egoistic-positive), and negatively-framed egoistic message (egoistic-negative).

In order to ensure credibility, we adopted a poster originally designed by HKRCBTS that was used for promoting blood donation in Hong Kong. The original poster design shows a cartoon picture of "a man holding a drill on a rock", and at the top of the picture, "*If blood could be obtained from rocks, there is no need to ask from you*" was written. The name, logo, and telephone number of the HKRCBTS were printed at the bottom of the poster. We embedded one of the following four messages in the lower part of the picture. These messages varied in terms of message focus (altruistic vs. egoistic) and frame (positive vs. negative). The altruistic- vs. egoistic-focused message manipulation is based on those designed by Ferguson et al. (2008) which emphasized either social interests (helping patients) or self-interests (feeling proud of yourself). Also, following Ferguson et al. (2008), in order to compare the effect of positive vs. negative framing, the content of the message remained the same, except that one is framed to convey the benefits attained by donation (gains: attaining a benefit, Kahneman & Tversky, 1979), and the other is framed to convey the benefits not being attained by not donating (loses: not attaining a benefit, Kahneman & Tversky, 1979).

Altruistic-positive message: "*By donating blood, you could save patients' life in critical condition, act now.*" (emphasizing social interest with positive framing)

Altruistic-negative message: "*If you don't want to miss the chance to save patients' life in critical condition, act now.*" (emphasizing social interest with negative framing)

Egoistic-positive message: "*By donating blood, you could feel proud of yourself, act now.*" (emphasizing self-interest with positive framing)

Egoistic-negative message: "*If you don't want to miss the chance to feel proud of yourself, act now.*" (emphasizing self-interest with negative framing).

2. Method

2.1 *Participants*

Seventy-eight undergraduate college students (44 women and 34 men, M_{age} = 19.7, SD = 1.30) participated to fulfill course credit for an introduction to psychology course at a university in Hong Kong. Participants were randomly assigned to one of the four conditions: positively-framed altruistic message condition (altruistic-positive, n = 23), negatively-framed altruistic message condition (altruistic-negative, n = 20), positively-framed egoistic message condition (egoistic-positive, n = 19) and negatively-framed egoistic message condition (egoistic-negative, n = 16).

2.2 *Procedures*

The study obtained ethical approval from the Institutional Review Board and full consent from the participants. Participants were told that the study investigated college students' general attitudes towards blood donation. The study consisted of two parts that required the participants to complete an online Qualtrics survey at their own pace. In Part 1, participants provided the demographic information, and upon completion, they were randomly assigned a computer-generated participation number by the Qualtrics system and instructed to use that number to access Part 2, one week later. This way, the data of the two parts can be matched based on the computer-generated participation number while maintaining participant anonymity. In Part 2, participants were randomly presented with one of the four posters using block randomization. To ensure that participants did process the target message presented in the poster, they were asked to translate the target message into English and to rephrase the benefits of blood donation as conveyed by the target message. They were also asked to answer three yes-or-no questions to ensure their understanding of the target message: did the poster (1) contain a statement "*If you don't want to miss the chance*"; (2) state how the patients are benefited from blood donation; and (3) state how the self is benefited from blood donation.

Afterward, participants' blood donation intention was measured. In the end, they were asked if they have any past blood donation experiences to verify their identity as non-donors. It should be noted that participants also completed a questionnaire measuring the personality variables related to blood donation intention (e.g., self-construal orientation and prosocial personality tendency) in Part 1, and a questionnaire measuring psychological variables related to blood donation intention (e.g., mood state and fatigue level) in Part 2. The justifications and findings of these variables were reported in the Supplementary Materials.

2.3 *Materials*

In our current study, we asked participants to express how much they agree with the statement: "*I intend to give blood in the following three months*" (1 = strongly disagree, 7 = strongly agree). This item was adapted from the Theory of Planned Behavior (TPB) questionnaire (Masser et al., 2009) and acted as our dependent variable. In addition, two items asked about participants' past donation experiences (e.g., the number of blood donations they had made so far, and in the last year). These items were used to ensure that participants were non-donors.

3. Results

Screening. Two independent raters judged the written works of the participants (Cohen's kappa, $\kappa = .66$, $p < .001$), and disagreements were resolved through discussion. Data of participants who showed incorrect understanding of the target message (i.e., those who had incorrectly translated and rephrased the target message; those who answered the three yes-or-no questions incorrectly), and/or those who indicated that they had previously made at least one blood donation were removed ($n = 27$), leaving 51 non-donors for data analysis ($n = 15$ in altruistic-positive condition, $n = 16$ in altruistic-negative condition, $n = 11$ in egoistic-positive condition, and $n = 9$ in egoistic-negative condition).

A two-way ANOVA was conducted with message focus (altruistic vs. egoistic) and framing (positive vs. negative) as between-subject independent variable, and blood donation intention as the dependent variable. The main effect of message focus was significant, $F(1, 47) = 5.60$, $p = .02$, $\eta_p^2 = .11$, observed power = .64. Participants reported a greater intention to donate blood when the messages were altruistic-focused ($M = 3.87$, $SD = 1.52$) than when the messages were egoistic-focused ($M = 3.00$, $SD = 1.26$). The main effect of framing was not significant, $F(1, 47) = 2.59$, $p = .12$, $\eta_p^2 = .05$, observed power = .35. The interaction effect of message focus and framing was marginally significant, $F(1, 47) = 3.82$, $p = .057$, $\eta_p^2 = .08$, observed power = .48 (see Figure 1).
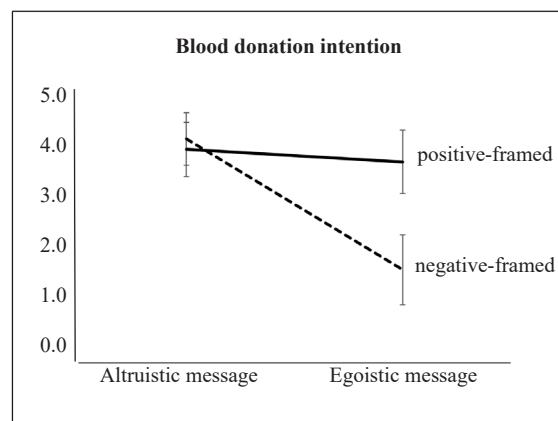

Figure 1. The interaction effect of message focus and framing on blood donation intention among Chinese non-donors. Error bars show 95% confidence intervals

Follow-up *t*-tests showed that participants reading altruistic-focused messages were equally willing to donate blood regardless of whether the message was positively-framed ($M = 3.80$, $SD = 1.66$) or negatively-framed ($M = 3.94$, $SD = 1.44$), $t(29) = -.25$, $p = .81$; $d = .09$, 95% $CI = [-.62, .79]$. However, participants reading egoistic-focused messages reported a greater intention of blood donation when the message was framed positively ($M = 3.64$, $SD = 1.29$) than negatively ($M = 2.22$, $SD = .67$), $t(18) = 2.98$, $p = .008$; $d = 1.34$, 95% $CI = [.34, 2.31]$. Also, when the messages were positively-framed, participants reading altruistic- and egoistic-focused messages did not show any significant difference in their blood donation intention, $t(24) = .27$, $p = .79$; $d = .11$, 95% $CI = [-.67, .88]$. However, once the messages were negatively-framed, participants reading an altruistic-focused message reported a significantly greater blood donation intention than when they were reading an egoistic-focused message, $t(22.5) = 4.06$, $p < .001$; $d = 1.69$, 95% $CI = [.72, 2.63]$. Further analysis revealed that except for egoistic-negative message which induced the lowest blood donation intention, $F(3, 47) = 3.38$, $p = .03$, $\eta_p^2 = .18$, observed power = .73 (vs. altruistic-positive, $p = .009$; vs. altruistic-negative, $p = .004$; vs. egoistic-positive, $p = .03$), all the other three types of messages (altruistic-positive, altruistic-negative, egoistic-positive messages) produced the same persuasive effect, all ps $> .05$.

4. Discussion

The goal of our study is to examine what type of message is relatively more effective in influencing young Chinese non-donors' blood donation intention. Using a similar design by Ferguson et al. (2008), the present study demonstrated that within a Chinese cultural context, Chinese non-donors reported a greater intention to donate blood when they read the altruistic-focused messages than when they read the egoistic-focused messages. Such a finding is inconsistent with that of Ferguson et al. (2008) who reported an opposite result with Caucasian British students who are committed donors.

While past studies (e.g., Markus & Kitayama, 1991) implied the interdependent-oriented Easterners would be more influenced by negatively-framed messages (Uskul et al., 2009), same as Ferguson et al.'s (2008) study, our study did not find any significant framing effect. It should be noted that in Balbo et al.'s (2015) study, they found a significant framing effect. Nevertheless, they did not mention whether their participants are committed blood donors or non-donors. In future studies, it is critical to recruit both committed donors and non-donors and systematically compare their responses.

Blood donation is a high-cost prosocial behavior. It is non-remunerated and involves risks such as potential infection, loss of bodily fluid, and pain during and after the donation process. It is important to identify effective ways to promote blood donation in advertisements and campaigns. The findings of our study have implications for HKRCBTS. Our findings suggested that by emphasizing altruistic belief in advertisements, it could effectively recruit new blood donors in a Chinese cultural context. Our data suggested that while an altruistic-focused advertisement is effective in inducing the blood donation intention of non-donors regardless of whether the message was positively- or negatively-framed, an egotistic-focused advertisement is effective in affecting non-donors' blood donation intention only when the message was positively-framed than negatively-framed. Indeed, we found that a negatively-framed egoistic-focused message was the least effective in persuading Chinese non-donors to donate blood. With regard to the fact that most of the first-time blood donors are recruited from secondary schools in Hong Kong, we suggest that more promotional materials with an altruistic theme and positive frame could be used in campus settings.

There are some weaknesses in our study. First, due to the small sample size, some of our analyses might have been underpowered. A larger sample is needed to examine the same phenomena in a future study. Second, we adopted one item to measure participants' blood donation intention. Although this followed Ferguson et al.'s (2008) practice, we suggest that future studies could use a battery of items to measure blood donation intention in order to increase the validity. Moreover, although Ferguson et al. (2008) argued that intention of blood donation is the strongest predictor of actual blood donation behaviors (see also Webb & Sheeran, 2006), we suggest that future research could employ a longitudinal approach to further track participants' actual blood donation behaviors. In addition, the current study focused on Chinese non-donors without a direct comparison of the pattern of findings from Western (e.g., UK, US) non-donors. It would be ideal for future studies to replicate the findings by comparing both Eastern non-donors (for whom altruistic appeals shall work better) and Western non-donors (for whom egoistic appeals shall work better) within a single study.

Also, the current research was a cross-sectional study in which participants' donation intention prior to exposure to messages was not measured. To ensure the donation intention across groups is purely due to the effect of persuasive messages, future research could measure participants' donation intention before reading messages as a pre-test. Lastly, participants in the current study are all college students, future studies could explore if the results of the current study could be generalized to older non-donors or other prosocial behaviors within the Chinese cultural context, such as volunteering or organ donation — a taboo and sensitive idea among the Asian community.

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Conflict of interest

The authors declare that they have no competing interests.

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