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RUNNING HEAD: Bone marrow donor registration, gender and risk

Exploring the role of gender and risk perceptions in people's decisions to register as a bone marrow donor

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Abstract

Increasing the number of bone marrow (BM) donors is important to ensure sufficient diversity on BM registries to meet the needs of patients. This study used an experimental approach to test the hypothesis that providing information about the risks of BM donation to allay unsubstantiated fears would reduce male and female participants' perceptions of risk for donation and joining the Australian BM Donor Registry (ABMDR). Males' and females' intentions to register on the ABMDR, their attitudes, norms, and perceived behavioural control (efficacy) in relation to registering were explored also. Participants were allocated randomly to either a risk (exposed to risk information about BM donation) or no risk (not exposed to risk information) condition. In partial support of hypotheses, exposure to risk information did reduce perceived risk for registering on the ABMDR for males only. Participants in the risk condition also demonstrated lower scores on attitude (males only) and intention compared to participants in the no risk condition. These findings highlight the complex role of risk perceptions and gender differences in understanding people's decisions to join a BM registry.

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Key words: bone marrow registry, bone marrow donation, risk, gender

Bone marrow (BM) registries around the world have access to a substantial number of potential donors; however, research suggests that numbers are still insufficient to meet demands [1-2]. A larger pool of potential donors will improve the chances of finding an unrelated Human Leukocyte Antigen-matched donor for those individuals who need a transplant but are unable to find a match within their family. As of December 2009, 173,257 donors were registered on the Australian Bone Marrow Donor Registry (ABMDR) [3]. In Australia, donors are retired from the registry at 60 years of age and it is important to maintain the balance of donors on the registry to ensure that sufficient diversity is available to meet the needs of patients [3]. One specific objective of the ABMDR is to increase the recruitment of donors under the age of 40 years who are currently under-represented on the registry [3]. Younger people, particularly those aged between 18 and 30 years, are optimal targets for recruitment because these donors will remain on the registry for a longer period of time and are more likely to be in good health [3]. Therefore, to increase the pool of donors aged below 40 years, an important endeavour and a key focus of the current research, is to understand the factors that may encourage this population to join the ABMDR.

Relatively few studies have considered the psychosocial factors influencing decisions to donate BM, and particularly, to join the registry. Bone marrow donation (BMD) studies have focussed on attitudes [4], motives [5], and ambivalence about donating [6]. For participating in a BM typing drive, one study compared donors and non donors on a number of variables including demographic factors, locus of control, perceived self-competence, and anxiety about medical procedures [7]. Results showed that participants who were better educated about the donation process were more likely to participate in the drive than those who held misconceptions or were fearful of the process. Furthermore, donors were more likely to have donated blood in the past and to have friends who also participated in the drive compared to non donors. Another study [8] explored the factors influencing registered and

non-registered BM donors' decisions and found that gender (being female), knowledge about BM transplantation, and information about BM transplantation were among a range of predictors of people's intentions to register as a BM donor. A more recent study [2] examined how rational and emotional appeals affected people's intentions and attitudes towards registering and found that, compared to rational appeals, emotional appeals resulted in increased intentions to register as a donor. Collectively, these studies suggest that there are a number of possible factors that may potentially inform a person's decision to donate BM or register as a BM donor including attitudes, normative influences, efficacy/control, knowledge/information, and demographic factors. In addition to these factors, the current study focuses specifically on the role of risk and gender in people's decisions to register as a BM donor in Australia.

In the BM context, perceptions of risk about the BMD process and giving a blood sample (an essential step in joining the registry) are likely influences impacting not only upon intentions but also attitude, norms, and efficacy. For instance, previous research involving risk perceptions has suggested that individuals may be more likely to engage in risky behaviour if they understand and feel they have personal control over the risk than those who do not [9]. However, there is uncertainty about the role of risk perception in relation to both BM and blood donation decision-making [10-11] with some studies suggesting that the influence of perceptions of risk or fear may be overemphasised (see 12 for a review of these studies) and others suggesting that greater perceptions of risk and associated fears reduce willingness to donate BM [7, 13] and blood [10]. While there are a range of factors that could potentially influence participation in a bone marrow registry such as age, past blood donation history [14], ethnicity, and education [15], we focussed on gender and controlled for any influence of previous blood donation by including non-donors only in our study.

Our choice to focus specifically on gender is based on previous research examining motivations to join a bone marrow registry [2, 8] which suggested that gender (being female) was associated with an increased likelihood of decisions to become a registered bone marrow donor. Furthermore, there is research to suggest that different factors may inform females' and males' decisions about BMD. Females are generally more willing to donate [13, 16] and register [8] as BM donors, whereas males are more likely to actually donate and to have a more positive BMD experience [5, 16]. Other studies, however, have not found evidence for the impact of gender on willingness to donate BM [15]. Gender may also have an impact on perceptions of risk with some research suggesting that, compared to females, males have much lower risk perceptions [17] and males and females process information differently [18]. A central aim of this study, therefore, was to further explore the role of risk perceptions of the BMD process in people's decisions about joining the registry and to establish if these risk perceptions as well as key psychosocial constructs differ based on gender.

The Current Study

In the current study we focus specifically on younger people aged 18 to 40 years who believe they are medically eligible to donate and who have not previously donated blood to maintain consistency with the ABMDRs' focus to maximise recruitment of donors under the age of 40 years. To determine how perceived risk informs people's BMD registration decisions, this study manipulated the amount of risk information participants were exposed to using two experimental groups: a *risk* (received information about the BM and peripheral blood stem cell [PBSC] donation process) and a *no risk* (did not receive this information) condition. In addition, the Theory of Planned Behaviour (TPB) measures [19] of attitude (positive or negative evaluation of a performing a behaviour), subjective norm (perceived approval/disapproval from important others for performing a behaviour), and perceived behavioural control (PBC; the amount of control over or efficacy a person believes they have

for behavioural performance), as well as risk associated with different aspects of BMD registration (blood donation, registration, and actual BMD [BM and PBSC]) were included to understand how the provision of risk (or no risk) information impacted upon factors that may potentially inform people's BMD registration intentions. The possibility that gender would have an effect on TPB variables and risk perceptions was explored also. Specifically, it was hypothesised that:

(H1) males and females exposed to risk information (*risk* condition) would have higher knowledge comprehension scores compared to males and females not exposed to risk information (*no risk* condition).

(H2) males and females in the *risk* condition would report lower levels of perceived risk for blood donation, PBSC donation, BMD, and registration, than those not exposed to risk information (*no risk* condition). This prediction is based on the idea that BMD may still be regarded by a proportion of the population as a risky and painful procedure (although it is possible that this perception may be changing with the increasing prevalence of PBSC) and it could reasonably be expected that risk scores in relation to donating and joining a registry would be high. It was hypothesised that, by exposing participants in the experimental condition to information about the risks associated with BMD and the procedure itself, as well as raising awareness about the less invasive procedure of PBSC donation, these participants would have a more realistic perception of the risks involved which would then be reflected in lower risk scores and increased knowledge comprehension scores.

(H3) males and females exposed to the risk condition would have higher attitude, subjective norm, PBC, and intention scores for registering, compared to males and females in the no risk condition.

Method

Preparation of the Experimental Manipulation (Pilot Study)

A pilot study was conducted initially to test the experimental risk manipulation. A convenience sample ($N = 20$) of university students aged 18 to 40 years was recruited (16 females; $M_{age} = 26.0$ years, $SD = 5.4$; 60% had never donated blood before, 30% had donated blood in the past, and 10% donated blood regularly). A *no risk* (no risk information provided) or a *risk* (provided information about BMD risks) version of the questionnaire was distributed to participants in a similar fashion to the main study. Measures of perceived risk, registration intentions, and comprehension questions were included also (see the main study description). Analysis of Variance (ANOVA) compared comprehension scores, perceptions of risk, and intentions between the two conditions. Participants in the *risk* condition perceived lower levels of risk associated with BMD compared to participants in the *no risk* condition, suggesting that the experimental risk manipulation was successful (Table 1).

Insert Table 1 about here

Participants

Participants ($N = 204$, $M_{age} = 21.0$ years; $SD = 4.7$, $Range = 18-40$ years) were predominantly female (68.1%), had never donated blood before (73.5%; 18.6% had donated blood before, 7.8% donated blood regularly), and self-reported low levels of knowledge about BMD ($M = 2.7$, $SD = 1.3$; 73.6% scored 3 or below on scale). Few participants knew someone who had donated BM or PBSC (< 10%), who needed or was currently waiting for a BM transplant (18.2%), or had already registered on the ABMDR (7.8%).

Design and Procedure

The design was between groups to enable comparison of participant responses from the *risk* and *no risk* conditions. Prior to data collection, the study received ethical clearance from the institutional review board. The questionnaire was administered to students across two university campuses in Queensland, Australia. Participants were informed of the study and that participation was voluntary, anonymous, and confidential. Participants were

allocated randomly to receive one of two versions of the questionnaire, representing either the *risk* or *no risk* condition. These questionnaires were identical with the exception that participants in the *risk* condition were provided with extra information about the BM/PBSC donation process and the risks involved. This information was replicated exactly, with permission, from the ABMDR information brochure for potential donors [20]. The questionnaire initially outlined basic information about the ABMDR, followed by questions about demographic characteristics and self-reported knowledge about and personal experience with BMD. The TPB constructs (attitudes, subjective norm, PBC, intention) were then assessed, followed by blood donation, PBSC donation, BMD, and registration risk measures (presented in that order). To conclude, seven multiple choice questions served as a check of the experimental risk manipulation and participants' comprehension of the information provided in each condition (further details about the information provided or measures used are available from the second author). Eligible participants received research participation credit as a thank you for their time. The remaining participants who were not eligible for research participation credit received a small token of appreciation (a chocolate) for their participation.

Target Behaviour

The target behaviour was joining the ABMDR in the next 6 months, and included three steps: making an appointment with the Australian Red Cross Blood Service to donate blood, filling out a consent form to join the registry, and donating blood for the purpose of testing and tissue typing. It should be noted that this study did not measure actual registration behaviour; instead, in line with TPB specifications [19], it used intentions as a proximal measure of behaviour. Intentions are commonly used in place of a behavioural measure, particularly for behaviours involving donation [21] where the gap in time between intention formation and actual behaviour may be lengthy thus eroding the stability of the intention-

behaviour relationship. Furthermore, intentions have been shown to account for approximately 30% of the variance on average in behaviour [22-23].

Measures

Demographic measures. Demographic items included gender (*male, female*), age in years, blood donation frequency (*never donated before, donated before, donate regularly*), and self-reported knowledge about BMD (Overall, how would you rate your knowledge of the topic of BMD? 1 *very poor* to 7 *excellent*).

TPB measures. Most questions were worded positively, with some negatively worded items to reduce bias, and scored using 7-point Likert scales (1 *strongly disagree*, 7 *strongly agree*), unless otherwise specified. Intention (4 items, $\alpha = .93$; e.g., “I intend to join the ABMDR in the next six months”), attitude (7 items scored on 7-point semantic differential scales, $\alpha = .86$; e.g., “For me, to join the ABMDR in the next six months would be?” 1 *good* to 7 *bad*), subjective norm (3 items, $\alpha = .68$; e.g., “Those people who are important to me would want me to join the ABMDR in the next six months”) and PBC (2 items reflecting self-efficacy only^a, $r = .65, p < .001$; e.g., “I am confident that I could join the ABMDR in the next six months”) related to registering on the ABMDR in the next six months were all measured according to TPB specifications [19].

Perceived risk measures. A separate risk perception measure comprising 5 items was created for each type of risk [24-27]: perceived risk of blood donation ($\alpha = .83$), PBSC donation ($\alpha = .88$), and BMD ($\alpha = .89$). Example items include: “In general, how dangerous do you think giving a blood sample [PBSC donation/BMD] is?”, 1 *not at all dangerous* to 7 *very dangerous*; and “How risky do you think giving a blood sample [PBSC donation/BMD] is?”, 1 *not at all risky* to 7 *extremely risky*. The risk associated with joining the ABMDR was assessed using one item: “How risky do you think joining the ABMDR is?”, 1 *not at all risky* to 7 *extremely risky*.

Comprehension Measures. Comprehension questions consisted of a series of 7 multiple choice questions based on the information provided to both conditions about the ABMDR and the extra information presented only to the *risk* condition. An example item is: “How long do you have to wait after a BMD until you can resume normal daily activities?”, a) *two or three days*, b) *a week* c) *immediately*, d) *two weeks*, e) *I don’t know*. Responses to each question were re-coded and scored as 1 *correct* or 0 *incorrect/don’t know*. The scores for the 7 questions were then added to give a total comprehension score out of 7.

Statistical Analysis

Sample size calculations for appropriate power of .80 and generalisability were based on the desired ratio of 15 to 20 observations per independent variable [28]. Initially a chi-square test was performed to check for group randomization. Analysis of Variance (ANOVA) was used to establish a successful experimental manipulation for the group overall. Separate two-way between groups ANOVAs were then conducted to establish the effect of the experimental condition and gender (and their interaction) on the dependent variables of comprehension score, intention, attitude, subjective norm, PBC, and risk perceptions (blood, PBSC, and BMD, and registration).

Results

Group Randomization and Manipulation Check

Prior to analyses, those participants who self-reported they were medically ineligible to donate BM and participants who reported having donated blood in the past were removed from analyses leaving a total of 141 participants (47 males, 94 females, $M_{age} = 21.33$ years, $SD = 4.57$, $Range = 18-40$ years). Of the 141 participants 67 were allocated to the *risk* condition (15 males, 52 females) and 74 to the *no risk* condition (32 males, 42 females). Conditions were compared on all demographic variables and the only significant difference was gender, $\chi^2(1) = 6.88$, $p = .009$, with the *risk* condition containing fewer males than the

no risk condition. Subsequent analysis showed a significant difference overall between the two conditions on the comprehension questions, $F(1, 136) = 12.85, p < .001, (M_{risk\ condition} = 4.11, SD = 1.99; M_{no\ risk\ condition} = 2.99, SD = 1.67)$, indicating that the experimental manipulation was successful.

Comprehension, Perception of Risk and TPB Variables as a Function of Gender and Experimental Condition

Knowledge comprehension. To test H1, that males and females exposed to risk information will report higher knowledge comprehension scores than males and females not exposed to risk information, a 2 x 2 ANOVA was conducted. The means and standard deviations for comprehension score as a function of gender and experimental condition are presented in Table 2. The results show a significant main effect for condition, $F(1,134) = 7.62, p = .007, \text{partial } \eta^2 = .05$, but not for gender, $F(1,134) = 1.64, p = .202, \text{partial } \eta^2 = .01$. The interaction between condition and gender was not significant, $F(1,134) = 0.15, p = .700, \text{partial } \eta^2 = .00$. These results provide support for H1, that participants in the risk condition (irrespective of gender) had higher knowledge comprehension scores compared to participants in the no risk condition.

Perceived risk. To test H2, that males and females exposed to risk information will report lower perceptions of blood donation, PBSC donation, BMD, and registration risk than males and females not exposed to this information, separate 2 x 2 ANOVAs with each risk construct as the measured variable were conducted. Means and standard deviations for each of the risk constructs as a function of gender and experimental condition are displayed in Table 2. For *blood donation risk*, there was no significant main effect for condition, $F(1,135) = 1.19, p = .277, \text{partial } \eta^2 = .01$, or gender, $F(1,135) = 0.64, p = .425, \text{partial } \eta^2 = .01$, and the condition x gender interaction was not significant, $F(1,135) = 1.40, p = .239, \text{partial } \eta^2 = .01$. For perceptions of *PBSC donation risk*, the ANOVA showed a significant main effect for gender, $F(1,139) = 8.79, p = .004, \text{partial } \eta^2 = .06$, but not condition, $F(1,139) = 1.76, p =$

.187, partial $\eta^2 = .01$, and the interaction was not significant, $F(1,139) = 0.98, p = .324$, partial $\eta^2 = .01$. Similarly, for *BMD risk* perceptions, results again showed a significant main effect for gender, $F(1,138) = 5.35, p = .022$, partial $\eta^2 = .04$, but not condition, $F(1,138) = 0.16, p = .688$, partial $\eta^2 = .00$, or their interaction, $F(1,138) = 0.64, p = .427$, partial $\eta^2 = .01$. For both perceptions of PBSC donation and BMD risk, these results indicate that females had higher perceptions of risk than males, irrespective of experimental condition.

In relation to ANOVA analysis of perceptions of *risk for joining the BM registry*, the condition x gender interaction approached significance, $F(1,137) = 3.60, p = .060$, partial $\eta^2 = .03$. Further analysis of the simple main effects for males and females between each condition revealed a significant difference between conditions for males, $F(1,43) = 4.30, p = .044$, partial $\eta^2 = .09$, but not between conditions for females, $F(1,90) = 0.45, p = .507$, partial $\eta^2 = .01$. Specifically, in partial support of H2, males had significantly lower registration risk scores in the risk condition compared to males in the no risk condition (Table 2).

TPB variables. To test H3, that males and females exposed to information about the risks of BMD would report higher scores on the TPB constructs of intention, attitude, subjective norm, and PBC compared to those not exposed to risk information, separate 2 x 2 ANOVAs with each TPB construct as the measured variable were conducted (see Table 2 for means and standard deviations for each of the TPB constructs as a function of gender and experimental condition). For *intention*, there was a significant main effect for condition, $F(1,136) = 5.24, p = .024$, partial $\eta^2 = .04$, showing that participants in the risk condition had lower intention scores compared to participants in the no risk condition. The main effect for gender was not significant, $F(1,136) = 2.56, p = .112$, partial $\eta^2 = .02$, nor was the condition x gender interaction, $F(1,136) = 0.01, p = .941$, partial $\eta^2 = .04$.

For *attitude*, the condition x gender interaction was significant, $F(1,136) = 5.26, p = .023$, partial $\eta^2 = .04$. The simple main effects for males and females between each condition,

were explored separately. There was a significant difference between conditions for males, $F(1,45) = 8.84, p = .005$, partial $\eta^2 = .16$, but not between conditions for females, $F(1,91) = 0.02, p = .887$, partial $\eta^2 = .00$. Specifically, in contrast to H3, males had significantly lower attitude scores in the risk condition compared to males in the no risk condition (Table 2).

For *subjective norm*, there was no significant main effect for condition, $F(1,137) = 1.35, p = .247$, partial $\eta^2 = .01$, or gender, $F(1,137) = 0.22, p = .642$, partial $\eta^2 = .00$, and the condition x gender interaction was not significant, $F(1,137) = 0.13, p = .717$, partial $\eta^2 = .00$. Similarly, for *PBC*, the main effects were not significant for condition, $F(1,137) = 1.59, p = .210$, partial $\eta^2 = .01$, or gender, $F(1,137) = 0.37, p = .543$, partial $\eta^2 = .00$. The interaction was also not significant, $F(1,137) = 1.97, p = .163$, partial $\eta^2 = .01$.

Insert Table 2 about here

Discussion

This study explored the role of psychosocial factors and risk perceptions in people's decisions to join a BM registry with a specific focus on gender differences. An experimental manipulation whereby participants were allocated to either a *risk* (exposed to information about BMD risks) or *no risk* (not exposed to risk information) condition revealed that participants in the risk condition demonstrated higher knowledge comprehension scores than participants not exposed to risk information; an effect that was not moderated by gender (supporting H1). This finding suggests that the information currently provided by the ABMDR for potential BM donors appears sufficient to increase awareness about the risks associated with and the process of BM and PBSC donation. In terms of risk perceptions, male participants exposed to risk information had significantly lower perceptions of risk for registering as a BM donor (partially supporting H2); suggesting that the information contained in the ABMDR brochure was sufficient to address any potential concerns of male participants toward joining the BM registry. Male participants had lower perceptions of risk

for PBSC donation and BMD also, compared to females irrespective of exposure to risk information. While contrary to H2, this finding is somewhat consistent with previous research suggesting that, in general, males have relatively low perceptions of risk, compared to females [17]. Alternatively, the information in the ABMDR brochure presented to both conditions may have introduced new fears for female participants or evoked a stronger emotional fear-based response for females, than males [29]. A recent study on BMD appeals found that affective appeals were more effective in motivating participants to register than rational appeals [2], suggesting the importance of continued experimental investigations of affective reactions and risk perceptions related to the BMD process and registration. Perceptions of risk for blood donation did not differ based on experimental condition or gender; a finding that is potentially explained by the fact that the risk information provided did not specifically address the risks of blood donation.

The study also explored differences in scores on the TPB constructs of intention, attitude, subjective norm, and PBC, for participants exposed to the risk and no risk condition as well as the potential moderating effect of gender. The findings were contrary to expectations (H3), with scores on intention significantly lower in the risk condition, compared to the no risk condition; an effect that was not moderated by gender. In addition, male participants in the risk condition reported significantly lower attitudes toward registration, compared to males in the no risk condition. Findings for subjective norm and PBC did not differ by condition or gender. These findings suggest that exposing participants to information that communicates a realistic portrait of the process of and potential risks associated with BM donation and registration may discourage people from forming positive intentions and attitudes toward registration (especially for males).

Together, the findings of this study have several applied implications. The gender differences in perceptions of risk and attitude highlighted in the current study suggest that

promotional materials developed specifically to address the informational needs of males and females may be needed. Effective programs and strategies to increase registration may also be those designed to improve an individual's attitude and intentions to undertake the steps involved in registration. While the provision of accurate and risk-related information is essential to ensure potential donors are making informed decisions to register, in addition to this information, it may also be critical to place a greater emphasis on the positive outcomes of registration and donation. For example, to increase a positive affective response to registration, positive personal stories from recipients and donors of BM donations may be effective [30]. Such information, and a greater focus on positive outcomes of donation and registration, could easily be incorporated in existing resources designed to inform potential bone marrow donors' decision-making, such as the ABMDR brochure.

Limitations and Future Research Directions

Although this study has several strengths including the use of an experimental approach, an examination of gender as a moderator, and a focus consistent with the ABMDRs directive to recruit donors aged below 40 years of age, the sample comprised predominantly female, university students and may not reflect the general population. Another concern relates to comprehension of the risk information provided; it may be possible that participants did not truly understand the risks outlined by the brochure (e.g., risk of undergoing a general anaesthetic). Results may be more representative of memory recall rather than true comprehension and future research may wish to include additional comprehension checks.

While we adopted the assumption in this study that perceptions of risk for BMD were inflated and that a successful experimental manipulation presenting risk information would reduce risk scores to reflect more accurate risk perceptions, this perspective limited our understanding of actual risk perceptions in the sample studied. Results of the study showed that exposure to risk information decreased risk perceptions for registering as a BMD for

males; however, it is unclear whether perceptions of risk were already low in this particular group or if the reduction in risk perception scores does indeed reflect an increased awareness and understanding of the risks involved as assumed. From an ethical perspective, it is important for future research to overcome these limitations by establishing initially whether risk perceptions are accurate or inflated which could be achieved by including both a pre- and post- intervention measure of risk perceptions as well as assessments of knowledge comprehension and TPB constructs. A qualitative approach may also assist in increasing our understanding of the accuracy of risk perceptions and determining how risk information impacts on BMD and registration decisions. In addition, a qualitative approach would assist in further elucidating why attitudes and intentions decreased.

Future studies should seek to identify also the contribution of risk to the prediction of intentions and behaviour within an established theoretical framework such as the TPB to increase our understanding of the role of risk in BMD registration decisions, and to establish whether risk is an important factor in decision-making in the face of other constructs such as a positive attitude informed by the desire to help others. Finally, this study used people's intentions as a proxy measure for behaviour rather than an actual behaviour measure of BMD registration. Although this approach is common practice in TPB- related research, future studies should focus on actual registration behaviour.

Conclusion

In conclusion, the findings of this study suggest the need to consider gender differences in decision-making about BM donation and registration, as well as the need for continued examination of theoretical constructs including perceptions of risk which may explain people's motivations for BM-related behaviour such as joining the registry. Although the experimental manipulation was successful, and a reduction in perceptions of risk for BM registration for males was evidenced, the findings of the current study overall

suggest that the elements that decrease perceived risks need clarification and warrant further investigation. Identification of the factors that can be manipulated successfully to encourage people to register on a BM donor registry, particularly those instilling accurate perceptions of risk and increasing positive perceptions of BM donation and registration outcomes, have the potential to increase registration and ultimately save the lives of those in need of a BM transplant.

Footnotes

^a Four items reflecting the two aspects of perceived controllability and self-efficacy (Ajzen, 1991) were initially used to measure PBC. However, due to the items loading poorly with each other, and the two perceived control items having no correlation with intention ($r = .06$, $p = .393$, and $r = .05$, $p = .493$), only the two self-efficacy items were used in the current study as a measure of PBC.

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Table 1

Means, Standard Deviations, and ANOVAs for Risk Items as a Function of Experimental Condition - Pilot Study (N = 20)

Measure	Risk <i>M</i> (SD)	No Risk <i>M</i> (SD)	<i>F</i>	<i>p</i>
Comprehension test scores	5.50 (1.27)	3.67 (1.80)	6.68	.019
Blood Donation Risk	2.00 (0.99)	2.10 (0.67)	0.07	.795
Bone Marrow Donation Risk	5.00 (0.82)	5.90 (0.74)	6.69	.019
Registration Risk	3.30 (1.42)	4.00 (1.33)	1.29	.270

Table 2

Means and Standard Deviations for TPB and Risk Items as a Function of Experimental Condition and Gender - Main Study (N = 141)

Measure	Gender	Experimental Condition	
		Risk <i>M</i> (<i>SD</i>) (<i>n</i> = 67)	No Risk <i>M</i> (<i>SD</i>) (<i>n</i> = 74)
Comprehension score	Male	3.64 (2.21)	2.81 (1.80)
	Female	4.23 (1.94)	3.12 (1.58)
Intention	Male	2.82 (1.25)	3.40 (1.10)
	Female	3.23 (1.51)	3.77 (1.20)
Attitude	Male	3.69 (1.24)	4.69 (0.99)
	Female	4.61 (1.14)	4.64 (1.14)
Subjective norm	Male	3.96 (1.31)	4.25 (0.88)
	Female	4.12 (1.01)	4.27 (1.04)
Perceived behavioural control	Male	4.33 (1.70)	4.30 (1.22)
	Female	3.82 (1.33)	4.50 (1.39)
Blood Donation Risk	Male	2.27 (0.93)	2.29 (1.03)
	Female	2.67 (1.22)	2.21 (0.92)
Peripheral Blood Stem Cell Donation Risk	Male	3.03 (0.96)	3.53 (1.08)
	Female	3.88 (1.23)	3.96 (1.13)
Bone Marrow Donation Risk	Male	3.60 (0.88)	3.88 (1.01)
	Female	4.32 (1.49)	4.23 (1.12)
Registration Risk	Male	1.80 (1.08)	2.67 (1.42)
	Female	2.88 (1.72)	2.66 (1.44)