

Donor Satisfaction with a New German Blood Donor Questionnaire and Intention of the Donor to Return for Further Donations

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Key Words

Blood donors · New national blood donor questionnaire · Donor satisfaction · Donor return · Donor retention

Summary

Background: The aim of this study was to describe donor satisfaction regarding different aspects of the new German blood donor questionnaire (BDQ) and to assess whether donor satisfaction is associated with the intention to return for further donations. **Methods:** A random number of 6,600 blood donors, donating at the German Red Cross Blood Service Baden-Wuerttemberg – Hessen, were asked to rate their satisfaction with four different aspects of the BDQ. Chi-square statistics was used to test for associations between satisfaction and the intention to return. **Results:** Most of the donors were satisfied with format and layout (72.7%) and the clarity of the questions (72.5%). However, only 39.5% of the donors were satisfied with the scope of the BDQ and 44.3% with the questions about sexual risk behavior. The lowest satisfaction seemed to be among experienced donors and among donors from small municipalities. Among experienced and very experienced donors, a significant association between the satisfaction with the different aspects and the intention to return became apparent. **Conclusion:** When considering the implementation of the BDQ, Blood Donor Services have to weigh up the advantages of increased deferral rates among donors with high-risk behavior against the potential drop-out of dissatisfied blood donors.

Introduction

The annual numbers of blood donations and transfused red blood cell (RBC) concentrates in Germany have risen considerably during the last decade [1]. Due to the increasing number of elderly persons with health concerns, several studies have concluded that the demand for blood transfusions will continue to rise in the upcoming years [2, 3]. The retention and motivation of active donors has thus been described as one of the major challenges for Blood Donor Services to secure the estimated demand for transfusions [4, 5]. A significant proportion of active donors, however, stop donating blood at one point in their donor career for no obvious reason [6, 7].

A considerable amount of literature has been published analyzing factors that influence donor return. These studies showed that older donors, Rh-negative donors, repeat donors, and donors with a high intention to return [8–10] are more likely to donate on a regular basis. Furthermore, donors who reported a positive experience with their last donation showed higher return rates [10–12]. Several aspects that are suspected to have an influence on donor satisfaction, and therefore are important for donor return, have been discussed. Amongst these aspects are waiting times, motivation, and staff competence. Another factor was the experience of an adverse event and the reaction of the Blood Donor Service in order to help donors that suffered from adverse events [13–15].

Recently, a new German Blood Donor Questionnaire (BDQ) has been developed to establish a nationwide questionnaire standard and to improve donor selection [16, 17]. The BDQ has to be filled in by every potential donor to secure blood safety and is an inherent part of the donation process. Therefore, format, scope, and content of the BDQ can directly

be associated with donor satisfaction. During the development of the BDQ it was of great importance to ask the questions clearly and to assess sexual risk behavior. The new BDQ avoids technical terms, overloaded or leading questions, and contains additional questions on sexual contact with new partners within the last 4 months. The nationwide implementation of the BDQ was recently proposed by the Arbeitskreis Blut [17].

A pre-test among first-time donors showed that the clarity of the questions in the BDQ was rated significantly higher than the clarity of the questions in the previous questionnaire, and more potential donors were deferred due to sexual risk behavior [16]. In a recent study among donors of the Red Cross Blood Service, using the BDQ, higher deferral rates due to sexual risk behavior or other relevant medical reasons could be reported. First-time, young and female donors were affected in particular and showed a substantial increase in deferral rates [17].

So far, however, there has been little discussion about the satisfaction of blood donors with the BDQ and whether dissatisfaction with the BDQ has an influence on donor return. To understand this issue better, we analyzed donor satisfaction regarding different aspects of the BDQ. Furthermore, we wanted to assess whether the satisfaction with different aspects of the BDQ could be associated with the intention to return for further donations.

Material and Methods

Study Population

The study population included all allogeneic whole blood (WB) donors, who donated or intended to donate at the German Red Cross Blood Service Baden-Wuerttemberg – Hessen between May 1, 2011 and May 31, 2011, using the BDQ. A random number of 6,600 donors were asked to participate in a mail survey and to rate satisfaction with the BDQ as well as the intention to return for further donations. During July 2011, a self-administered questionnaire was sent to all selected donors along with a personalized introduction letter, a data security statement, and a stamped, pre-addressed return envelope. To avoid an increased recall bias, we did not send any reminder and stopped the data collection on September 30, 2011.

Survey Instrument

The participants of the survey were asked to rate satisfaction with four different aspects of the BDQ: i) format and layout, ii) clarity of the questions, iii) scope of the questionnaire and iv) questions about sexual risk behavior. For the first three aspects (i–iii) a 5-point Likert scale was offered ranging from ‘very dissatisfied’ (1) to ‘very satisfied’ (5). The satisfaction with the questions about sexual risk behavior (iv) was assessed using a 5-point Likert scale with ‘too personal’ (1) and ‘suitable’ (5) as endpoints. Donors with a score of 4 or 5 were considered to be satisfied, donors with a score of 3 to be neutral, and donors with a score of 2 or 1 to be dissatisfied.

To measure intention to return for further donations, the participating donors were asked ‘How likely is it, in general, that you continue to give blood at the German Red Cross Blood Service?’. Responses were captured using a 5-point Likert scale from ‘very unlikely’ (1) to ‘very likely’ (5). Donors with a score of 4 or 5 were considered to have a high intention to return and donors with a score of 1, 2 or 3 to have a low intention [10].

Finally, the participants were asked for sociodemographic information, including age, gender, education, postal code, and prior donation history. Based on the postal codes, we were able to identify the total population in the municipalities of the participating donors [18]. Study design and questionnaire were positively approved of by the local ethic committee (Mannheim, 2011-306N-MA).

Statistical Analysis

The proportion of satisfied, neutral and dissatisfied blood donors were calculated for each aspect. This was followed by a subgroup analysis during which donor characteristics (sex, age, education, population figure, and donation history) were correlated with donor satisfaction. Chi-square tests were performed, and p values < 0.05 were considered significant. The association between donor satisfaction and the intention of a future donation was tested using chi-square statistics. The tests were performed separately for novice donors (0–4 previous donations), experienced donors (5–25 previous donations), and very experienced donors (>25 previous donations) as previous studies hypothesized that donation history might influence the perception of the BDQ [16, 17]. The distinction between ‘novice’, ‘experienced’ and ‘very experienced’ donors was chosen according to previous studies [19]. However, due to sample size limitation, we did not separate analysis for first-time donors. The statistical package SPSS 19 (SPSS, Inc., 2009, Chicago, IL, USA) was used for the calculations.

Results

A total of 6,600 self-administered questionnaires were mailed to donors who donated or intended to donate during May 2011. Until the end of September 2011 a total of 3,131 (47.4%) completed questionnaires were returned. Due to missing values for relevant questions, 673 questionnaires were excluded from the analysis. The analysis sample consisted of 1,293 (52.6%) men and 1,165 (47.4%) women with an average age of 44.8 years. The majority of the participants were either experienced (42.2%) or very experienced donors (40.2%) with 5–25 or more than 25 previous donations. 35.4% of the donors reported that they have a high educational level (advanced school education), and 36.8% had a medium educational level (intermediate school education). Over half of the surveyed donors (71.1%) lived in a municipality with less than 20,000 inhabitants, 23.7% of the donors in municipalities with more than 20,000 inhabitants, and 5.2% in large cities (>100,000 inhabitants).

Most of the donors surveyed were satisfied with format and layout of the BDQ (72.7%) and with the clarity of the questions (72.5%). The lowest satisfaction with these formal aspects seemed to be among men, among donors with a lower education, among donors from small municipalities, and among very experienced donors (table 1). In contrast to these results, the satisfaction with both other aspects of the BDQ was much lower. Only 39.5% of the donors were satisfied with the scope of the questionnaire and only 44.3% with the questions about sexual risk behavior. The subgroup analysis indicate that young donors, men, higher educated donors, donors from small municipalities, and donors with frequent previous donations showed the lowest satisfaction with the scope of the

Table 1. Satisfaction with four different aspects of the BDQ by donor characteristics

	Satisfied with ...															
	format and layout				clarity of the questions				scope of the questions				questions about sexual risk behaviour			
	satisfied %	neutral %	dis-satisfied %	chi-square	satisfied %	neutral %	dis-satisfied %	chi-square	satisfied %	neutral %	dis-satisfied %	chi-square	satisfied %	neutral %	dis-satisfied %	chi-square
Total	72.7	20.7	6.7		72.5	18.4	9.1		39.5	22.2	38.3		44.3	12.2	43.5	
Sex				23.0***				5.7								5.4
Men	68.7	23.2	8.1		70.5	19.6	10.0		35.3	20.7	43.9		42.2	12.5	45.4	
Women	77.1	17.9	5.1		74.7	17.2	8.2		44.1	23.8	32.1		46.8	11.8	41.4	
Age, years				44.1***				8.3								38.0***
18–29	77.0	20.0	3.0		69.1	21.2	9.7		37.3	27.2	35.5		47.2	14.7	38.0	
30–44	75.5	20.5	4.0		75.6	16.6	7.8		35.0	23.9	41.1		36.7	12.9	50.4	
45–54	69.9	22.9	7.2		71.5	19.5	9.0		37.3	21.8	40.8		43.1	11.5	45.4	
55+	70.0	18.5	11.5		72.6	17.1	10.3		48.4	17.3	34.4		51.9	10.3	37.7	
Education				28.6***				17.0**								2.0
Low	68.8	20.3	10.9		67.9	19.4	12.7		45.5	21.6	32.8		45.1	10.8	44.1	
Medium	73.7	21.5	4.9		74.4	17.6	8.0		39.7	22.1	38.2		43.8	13.2	43.0	
High	74.7	20.1	5.2		74.0	18.5	7.5		34.5	22.7	42.8		44.3	12.2	43.5	
Population				11.6				3.0								34.8***
0–5,000	70.0	22.8	7.2		71.4	19.7	8.9		34.0	24.8	41.2		39.6	11.6	48.8	
5,000–20,000	71.4	21.3	7.3		71.7	18.6	9.7		38.6	21.1	40.4		42.4	11.8	45.7	
20,000–100,000	77.2	17.2	5.7		74.6	17.5	7.9		45.1	20.9	34.0		48.0	13.9	38.1	
100,000+	74.0	22.8	3.1		74.0	16.5	9.4		42.5	29.9	27.6		63.8	9.4	26.8	
Previous donations				69.5***				18.6**								34.9***
0–4	81.5	17.1	1.4		74.1	18.5	7.5		47.4	28.3	24.3		54.0	13.6	32.5	
5–25	73.8	21.8	4.4		74.5	18.5	6.9		38.5	23.5	37.9		43.0	13.6	43.3	
26+	67.7	21.0	11.3		69.6	18.3	12.1		37.1	18.1	44.8		41.6	10.0	48.4	

Table 2. The intention to return among novice, experienced and very experienced donors by donor satisfaction

Variable	Intention to return among novice donors with up to 4 donations			Intention to return among experienced donors with 5–25 donations			Intention to return among very experienced donors with more than 25 donations		
	yes %	no %	p value	yes %	no %	p value	yes %	no %	p value
Total	90.7	9.3		93.4	6.6		91.6	8.4	
Format and layout of the questions			6.4*			13.0**			48.9***
Satisfied	92.0	8.0		94.9	5.1		95.4	4.6	
Neutral	86.3	13.7		89.9	10.1		87.5	12.5	
Dissatisfied	66.7	33.3		84.8	15.2		76.8	23.2	
Clarity of the questions			8.7*			15.1**			28.8***
Satisfied	93.1	6.9		95.0	5.0		94.5	5.5	
Neutral	84.8	15.2		90.2	9.8		87.8	12.2	
Dissatisfied	81.2	18.8		84.7	15.3		80.8	19.2	
Scope of the questions			5.9			16.8***			44.2***
Satisfied	92.6	7.4		96.3	3.7		97.0	3.0	
Neutral	92.6	7.4		95.1	4.9		96.6	3.4	
Dissatisfied	84.6	15.4		89.4	10.6		85.1	14.9	
Questions about sexual risk behaviour			4.7			16.4***			35.1***
Satisfied	93.1	6.9		96.2	3.8		96.8	3.2	
Neutral	91.4	8.6		95.8	4.2		96.0	4.0	
Dissatisfied	86.3	13.7		89.8	10.2		86.2	13.8	

*p > 0.05, ** p > 0.01, *** p > 0.001

questionnaire. Satisfaction with the questions about sexual risk behavior was lowest among donors older than 54 years of age, donors from small municipalities, and very experienced donors.

The participating donors showed a high intention to return for further donations. Among all donors, 92.2% answered that it is likely or very likely that they continue to give blood. As shown in table 2, the highest intention was found among experienced donors, followed by very experienced and novice donors. Among experienced and very experienced donors, there was a significant association between the satisfaction with the different aspects and the intention to return. The higher the satisfaction with each aspect of the BDQ, the higher the intention to return (all corresponding p values of the chi-square statistics were <0.01). Interestingly, novice donors with less than 5 previous donations showed lower satisfaction with the format and layout as well as with the clarity of the questions.

Discussion

The aim of our study was to describe donor satisfaction with the BDQ and to clarify whether satisfaction is associated with the intention to return for further donations. Our data show high satisfaction with format and layout and with the clarity of the questions, but low satisfaction with the scope of the BDQ and the questions about sexual risk behavior. Fur-

thermore, the analysis indicate that there is a clear association between satisfaction and the intention to return for further donations, in particular among experienced and very experienced donors.

Previous studies showed that the BDQ increases donor deferral and may be a valuable tool to reduce the risk for the transmission of infectious diseases [17]. Furthermore, a high satisfaction with the clarity of the questions is apparent among first-time donors [8]. Our data confirms the satisfaction with the clarity of the questions. Furthermore, there is also a high donor satisfaction with format and design of the questionnaire. These findings lead to the conclusion that the efforts to develop a BDQ with visually appealing and easily understandable questions have been successful.

The scope of the questionnaire, however, was rated much lower by the participants of our survey. Only 4 out of 10 interviewed donors were satisfied, and the majority was either neutral or dissatisfied. The reason for this may lie in the fact that great emphasis was put on the clarity of the questions in the BDQ. To avoid overloaded questions, asking for a larger number of distinct information, the BDQ consists of more than 30 questions. The results of our study indicate that the majority of the blood donors would prefer a shorter questionnaire.

Particularly men, young and higher educated donors, and very experienced donors from small municipalities showed a low satisfaction with the scope of the questionnaire. The sex- and education-specific results were consistent with previous

studies on donor satisfaction [11]. It was hypothesized that a very strong altruistic orientation among women leads to a higher satisfaction among female donors, whereas different perceptions of the value of time could be responsible for the differences between low- and high-educated donors [11]. Rural-urban differences in donor satisfaction have not been described in previous studies [10,–12]. The evidence from this study suggests that particularly donors from small municipalities were dissatisfied with the new BDQ and with the questions on sexual risk behavior.

The low donor satisfaction with the scope of the questionnaire among experienced and very experienced donors that was shown in our study may be explained by the strong customization to a previous blood donor questionnaire that consisted of fewer questions. Novice donors with only few donation experiences are less customized and may therefore be more satisfied than experienced or very experienced donors. However, even among novice donors less than half of the participants in our survey were satisfied with the BDQ. This leads us to the conclusion that there is a particular need to improve the scope of the BDQ.

Furthermore, a considerable part of the donors were dissatisfied with the questions about sexual risk behavior and rated them as ‘to personal’. Particularly middle-aged donors from small municipalities with frequent previous donations felt uncomfortable answering these questions. It is likely that the high proportion of unsatisfied donors were caused by the intention to intensify the questions on sexual risk behavior in the BDQ and to optimize donor selection. The increased deferral rates especially due to sexual risk behavior or other relevant medical reasons such as surgery, drug treatment, or travel history reported in previous studies suggest that the optimization of donor selection may have been successful and could justify the nationwide implementation [17]. From a donor retention perspective, however, the high dissatisfaction with questions about sexual risk behavior appears to be problematic for several reasons.

Donors that were dissatisfied with their last donation experience, due to intimate questions about their sexual risk behavior, may end up complaining. If donors made the experience that the blood establishment does not respond to the complaint properly they may not return for further donations [20, 21]. Previous studies showed that donor satisfaction is indeed associated with donor return [10, 12]. The results of our study also show that the intention to return was lowest among donors with a low satisfaction. This supports the previous research in that field and let us assume that dissatisfaction with the questions about sexual risk behavior make donor retention more difficult. Furthermore, donors who were disappointed by the questions about sexual risk behavior and the handling of their complaints may talk negatively about their

experience and influence other (potential) donors [20]. Hence, a high proportion of donors who were dissatisfied with their last donation may also hamper the recruitment of new donors. Previous studies showed that personal invitations are very important for first-time donors [22, 23].

However, the main emphasis of the current study investigated the association between satisfaction and the intention to return, and we cannot finally confirm that donor return was really influenced by the BDQ. This should be considered when interpreting the results of the study. Although information on donor return was not available, we noted that the intention to return was associated with donor return in previous studies and appears to be a reliable predictor [24, 25]. Furthermore, our study was influenced by the long period between the donation and the field period of our satisfaction survey. Recall bias may have influenced the results and would have probably led to a high proportion of excluded questionnaires due to missing values. Nevertheless, our analytic sample still consists of more than 2,400 respondents.

The data of our donor survey show that the blood donors were satisfied with format and layout of the BDQ, whereas the satisfaction with the scope of the questionnaire and the questions about sexual risk behavior was much lower. A clear association could be established between donor satisfaction and the intention to return for further donations. These findings suggest that the BDQ, which increases deferral rates due to sexual risk behavior or other relevant medical reasons, is not accepted by all donors. This is particularly true for experienced donors from small municipalities. Hence, the Blood Donor Services have to weigh up the advantages of increased deferral rates among donors with high-risk behavior against the potential drop-out of dissatisfied blood donors. A future study investigating the long-term satisfaction with the BDQ could be very helpful in this respect.

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