



THE EFFECTS OF OCCUPATIONAL HEALTH NURSE-INITIATED EDUCATION ON WORKERS KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING BLOOD DONATION

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Summary

Aim. The authors' aim was to assess the level of knowledge, attitudes, and practices (KAP) regarding blood donation among workers after an occupational health nurse-initiated education.

Material and methods. The authors providing educational brochure on blood donation via company-wide Intranet and company newsletters, then the survey was conducted between August and December 2010 in a major company, using a convenience sampling method. In the course of the survey an anonymous, self-completion questionnaire has been developed based on the Eurobarometer 41.0 (1995): Europeans and Blood, supplemented with the authors' own questions. They used mixed-mode data collection: traditional paper-based questionnaire and web-based survey. The authors analysed the gathered data with Microsoft Excel 2003 software, using a descriptive statistical method and chi-square tests.

Results. The survey was completed by 483 self-registered workers. The sample consisted of 63% male and 37% female. The respondents were between the ages of 18-60 years. 68% of the sample judged their state of health to be very good or excellent. 82% of respondents were donors. After the education more than three quarters (88%) of total respondents had good knowledge of blood donation. 53% of the respondents cited the company internal communication as main source of information regarding blood donation.

Conclusions. The authors stress the importance of educating and informing workers, because based on the results it can be concluded that education by occupational health nurses can positively contribute to strongly increase KAP towards blood donation among workers and might lead to higher blood donation rates.

Key words: occupational health nurse, blood donation, education

INTRODUCTION

Based on literature review, it can be stated that blood donation is a highly relevant issue worldwide (1, 3-6). For the safe and continuous blood supply it is essential to recruit healthy and dependable donors, who lead a lifestyle of low-risk of getting infected and donate blood regularly (1, 6). In these days one of the main aim is to increase the awareness of the general population regarding blood donation. Findings of earlier researches showed that the greater part of donors are under employment (1, 5). Occupational health nurses (OHN) are at the frontline in helping to protect and promote the health of working populations. Although workplace health promotion is a core concept in occupational health nursing there was no study referring to promotion

of blood donation among workers from the occupational health nurses' point of view.

AIM

The intention of the survey is to determine the level of knowledge, attitudes, and practices (KAP) regarding blood donation among workers after an occupational health nurse-initiated education. Our hypothesis was that education can increase the KAP level in order to enlarge the number of possible blood donors in the future.

MATERIAL AND METHODS

After providing educational brochure on blood donation via company-wide Intranet and company newsletters a survey was conducted between August and

December 2010 in a major company in Hungary, using a convenience sampling method. In the course of the survey an anonymous, self-completion questionnaire has been developed based on the Eurobarometer 41.0 (1995): Europeans and Blood (EB41.0), supplemented with our own questions (3). The original version of the questionnaire was prepared in English language. In a first step we translated it into Hungarian. The results of this first translation were checked by a group of English speaking native Hungarians. The new version was translated back to English language by a professional translator (native English speaker). The differences between the re-translated English version and the original English version were examined and discussed. On the basis of the comments made, a third version of a questionnaire (pre-test) was designed. Following an internal testing the survey was pilot-tested in a convenience sample of 15 individuals from the company. The purpose of this pilot study was to determine item clarity for the participants. The results of the pilot-test showed the adequacy of the data collection instrument for the proposed research objectives. The final survey had 20 questions. The survey is composed of three sections: (a) socio-demographic background, (b) knowledge about blood donation, and (c) attitude regarding blood donation. We used mixed-mode data collection: traditional paper-based questionnaire and web-based survey. Paper-based questionnaire were distributed to workers visiting the company's occupational health units and via the company's Intranet. As the survey was anonymous there was no follow up of respondents. To increase the participation rate, two reminder pop-up messages were placed on the company's Intranet webpage after two months, and 15 days before the closing date of the survey. For the purposes of our analysis, both the paper-based (N = 180) and online (N = 303) responses are combined in a joint database. The analysis was performed applying descriptive statistical methods and chi-square tests, calculated by Microsoft Excel 2003 software.

RESULTS

The information in this survey has several limitations that must be considered when reading the data. The major limitations of the survey is that the response rate was N = 483, and it relies on a mixed-mode self-report method of data collection. It allows less control over the number and type of participants and it is possible that certain groups of workers did not have access to the intranet. These may slightly limit the generalizability of the survey results.

As the size of the population to which the survey was circulated is unknown due to the distribution network, it is not possible to calculate response rates for the survey. The survey was completed by 483 self-registered workers. Table 1 shows some socio-demographic characteristics of the studied workers with significance levels. A total of 394 (82%) workers had donated blood at least once in the past. Of blood donors 45 (11.42%) had

only donated once, 133 (33.75%) had given blood a few times, and more than half, 216 (54%) were regular repeat donors. The majority of donors 301 (76.4%) had given blood during the past six months, 65 (16.5%) had given blood within a year, 28 (7.1%) had last attended a session over a year ago. The main motivational factor for donation was sense of moral duty for almost half, 189 (48%) of the donors.

18% of the total respondents have never given blood. Of those who had never given blood the majority (64.4%) had thought to do. The main reason for not donating blood was lack of time to donate (56.6%). Other reasons were fear of needles (18.3%), medical problems (10%), fear of infections (8.3%) and all other reasons were fewer than 5%. 3.72% of studied workers have had a blood transfusion.

Table 2 shows the level of knowledge of the studied workers. After an OHN-initiated education more than three quarters (88%) of total respondents had good knowledge of blood donation. The maximum awareness was about blood transfusion is blood type-specific (99.8%), whereas the minimum awareness was about maximum age exist for blood donation (55.3%).

Figure 1 presents the knowledge of the participants in the current study about available blood supply in the blood banks. Moreover, the majority of respondents (89%) think, that the safety of transfusion has improved over the past ten years.

Survey respondents were asked about the main source of information regarding blood donation. 53% of respondents cited the company-wide Intranet, company magazine and posters at workplace. Media (television, radio, media website, newspapers) was cited as the main source of information by 38% of respondents. 7% cited discussions with family, friends and colleagues and 2% cited social networking sites (Facebook, iwiw, etc.).

DISCUSSION

Several investigations and statistics were done on blood donor's KAP, which mainly focus on the main sources of potential blood donors in order to motivate them via direct contact (1, 5, 7). We think, OHNs luckily in a specific position to involve more workers for blood donation. Our hypothesis was to test this idea in a large Hungarian company, which started to participate in blood donor campaigns initiated by an OHN.

The company's OHN edited several educational brochures, articles, and advertisement on blood donation via company-wide Intranet and newsletters, which were followed by our present analysis. This was not surprising, information provided by the company-wide Intranet motivate potential donors mainly (53%) due to micro-social attitude effects; in contrast with EB41.0, where mass-media: mainly TV, general newspapers, and radio took the main contribution. In this latter study, workplaces as a source of information was negligible.

Socio-demographic content of our sample (tab. 1) fit to the studied group by EB41.0, however 82% of our survey respondents had donated blood previously instead

Table 1. Socio-demographic characteristics and self-rated health status of the respondents (N = 483).

Characteristics		Donors (N = 394) n (%)	Non-donors (N = 89) n (%)	Total (N = 483) n (%)	Chi-square	Significance
Gender	Male	269 (89)	33 (11)	302 (63)	30.15	0.00
	Female	125 (69)	56 (31)	181 (37)		
Age group	18-24 years	21 (75)	7 (25)	28 (6)	14.74	0.002
	25-39 years	282 (85)	51 (15)	333 (69)		
	40-54 years	88 (77)	26 (23)	114 (24)		
	over 55 years	3 (37)	5 (63)	8 (2)		
Place of residence	Urban	329 (80)	82 (20)	411 (85)	4.26	0.04
	Rural	65 (90)	7 (10)	72 (15)		
Level of education	Incomplete secondary	2 (40)	3 (60)	5 (1)	5.99	0.05
	Secondary	177 (81)	41 (19)	218 (45)		
	Higher	215 (82)	45 (18)	260 (54)		
Marital status	Single	62 (82)	14 (18)	76 (16)	4.68	0.20
	Married	306 (83)	64 (17)	370 (76)		
	Divorced without partner	24 (73)	9 (27)	33 (7)		
	Widowed without partner	2 (50)	2 (50)	4 (1)		
Number of children	At least one child	239 (81)	56 (19)	295 (61)	0.15	0.69
	None	155 (82)	33 (18)	188 (39)		
Self-rated health status	Fair or less	10 (83)	2 (17)	12 (2)	5.39	0.15
	Good	108 (76)	35 (24)	143 (30)		
	Very good	224 (85)	40 (15)	264 (55)		
	Excellent	52 (81)	12 (19)	64 (13)		

Table 2. General knowledge about the donation of blood in the population under study (N = 483)

No.	True or false statements, and questions for estimating the knowledge levels	Correct answer N (%)	False answer N (%)
1	People who had a tattoo or piercing within the last year is not eligible to donate blood	370 (76.6)	113 (23.4)
2	Maximum age for blood donation exist	267 (55.3)	216 (44.7)
3	Different blood groups exist	475 (98.3)	8 (1.7)
4	Giving blood reduces the amount of blood in your body forever	438 (90.7)	45 (9.3)
5	Have to eat and drink plenty of fluids before blood donation	416 (86.1)	67 (13.9)
6	Blood donations are tested for diseases	461 (95.4)	22 (4.6)
7	Blood is made up of several components which can be manufactured into different medicinal products	422 (87.4)	61 (12.6)
8	Once collected, blood cannot be stored. It must be immediately given to a patient	467 (96.7)	16 (3.3)
9	Plasma is a component of blood	441 (91.3)	42 (8.7)
10	Anybody can receive blood from anybody else	482 (99.8)	1 (0.2)
11	Maximum number of donations permitted a year	439 (90.9)	44 (9.1)

of 30% within the EU12. This percentage is higher than recorded in other studies also. E.g. the latest Eurobarometer 72.3 (EB72.3) carried out in 2009, in the 27 EU Member States, showed that only the 37% of the European citizens had previously donated blood, while in Hungary the average was 44%. (4) Our sample donor group was male dominated (68%) and the willingness of blood donation

was found to be decreasing with the age significantly in accordance with a German survey (7). Higher education level and urban life effect positively on the willingness to donate (1, 2). Family- and children-related surveys influence blood donation habit, but not significantly. It was also interesting, that the self-rated health status of the 98% respondents were good or higher.

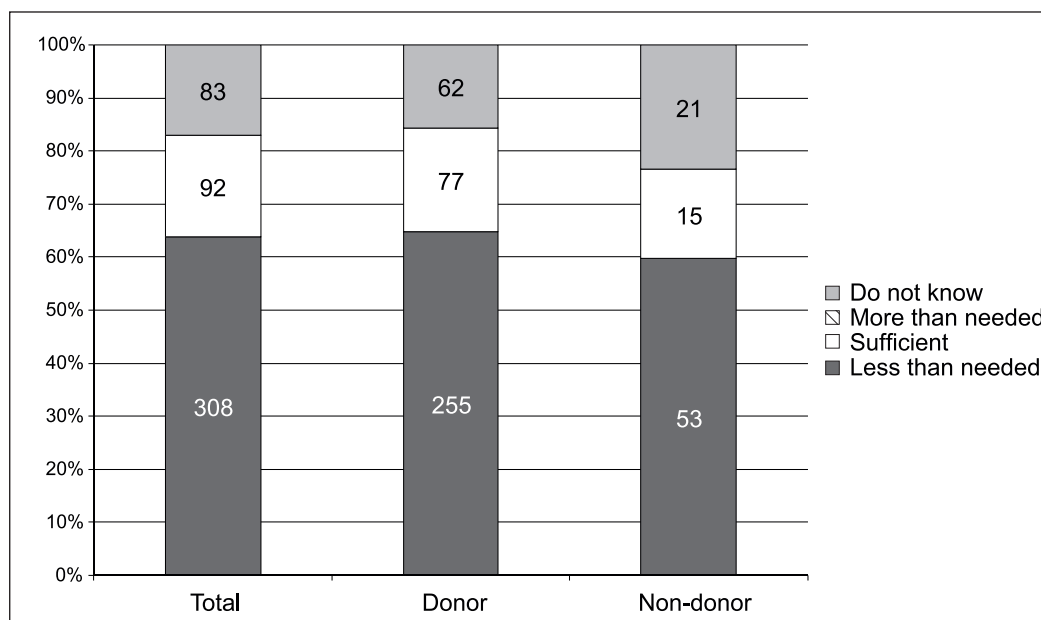


Fig. 1. The knowledge regarding blood supply level at blood banks (N = 483; p < 0.05). (We note category "More than needed" was not chosen by anyone).

Based on table 2 the general knowledge of the studied works about blood donation was higher (88%) in comparison with the knowledge of the participants of the EB41.0 (39.8%) (3) and for non-European study (75%) in which latter a similar, but not the same questionnaire was used (5). The majority of our respondents (89%) think that the safety of transfusion has improved over the past ten years, compared to 57% (EU27) and 51% (HU) recorded in the EB72.3 (4). Based on figure 1 it was concluded that the studied workers are well informed about blood supply level at blood banks also. 64% knows that stored blood amount is less than needed.

The present research shows that after an OHN-initiated education the level of the knowledge of the population under study regarding blood donation was higher in comparison with the general knowledge in this field.

CONCLUSIONS

Occupational health nurses can greatly contribute to safe national blood supply by identifying and advis-

ing potential blood donors. The authors stress the importance of educating and informing workers, because based on the results it can be concluded that education by OHNs can positively contribute to strongly increase KAP towards blood donation among workers and might lead to higher blood donation rates. □

References

1. Buciuniene I, Stonienė L, Blazevičienė A et al.: Blood donors' motivation and attitude to non-remunerated blood donation in Lithuania. *BMC Public Health* 2006; 6: 166.
2. Chliaoutakis J, Trakas DJ, Socrataki F et al.: Blood donor behaviour in Greece: implications for health policy. *Soc Sci Med* 1994; 38: 1461-1467.
3. Europeans and Blood, Eurobarometer 41.0. European Commission (EC) 1995.
4. Blood donation and blood transfusion. Eurobarometer 72.3 European Commission (EC) 2010.
5. Javadzadeh Shahshahani H, Yavari MT, Attar M, Ahmadiyeh MH: Knowledge, attitude and practice study about blood donation in the urban population of Yazd, Iran, 2004. *Transfus Med* 2006; 16: 403-409.
6. Tomonkó M: A vradók alkalmasságának alapelvei és a hazai követelmények. *LAM* 2006; 16(2): 131-138.
7. Tscheulin DK, Lindenmeier J: The willingness to donate blood: an empirical analysis of socio-demographic and motivation-related determinants. *Health Services Management Research* 2005; 18: 165-174.

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