

How do people become plasma and platelet donors in a VNR context?

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Abstract

Background: The demand for therapeutic plasma-derived products poses a challenge to blood collection agencies (BCAs). In 2014–2015, the volume of plasma sent for fractionation met 17.7% of Quebec's needs for immunoglobulins. This article aims to offer an exploration of the paths blood donors follow in order to become plasma and platelet donors (PPDs).

Study Design and Method: This analysis is based on semi-structured interviews with 50 PPDs in Quebec, Canada. Our analysis focused on the occurrence of events and the presence of contextual elements identified through: (1) factual data on PPDs; and (2) what PPDs identified as being an influence on their donation experience. This information was synthesized using a typology of trajectories.

Results: Six typical trajectories have been distinguished, first by the presence (19/50 respondents) or absence (31/50) of blood donation as a family tradition. Of the latter 31 donors, some pointed instead to inherited family values as having a significant influence on their commitment (11/31). Donors' careers were then distinguished as having started early (34) or late (16). Sub-types then appeared with the addition of other contextual elements, motivation profiles, and circumstances under which the conversion to apheresis donation occurred.

Conclusion: Our findings suggest the existence of diversified donor trajectories, and confirm the importance of conducting more in-depth analyses of the sequence of events occurring along PPDs career. BCAs should develop strategies carefully tailored to different potential clienteles if they wish to convert whole blood donors to apheresis donation, and also focus on recruiting and retaining young PPDs.

KEYWORDS

blood donation, blood donation career, plasma, platelet

1 | INTRODUCTION

The increased demand for therapeutic plasma-derived products, due to the number of medical conditions that can be treated using intravenous immunoglobulin (IVIGs),^{1,2} poses

a real challenge to blood collection agencies (BCAs). In 2014–2015, the volume of plasma sent for fractionation met 17.7% of Quebec's needs for immunoglobulins.³ Fractionation is a process that isolates and purifies the proteins that will be used to manufacture medications. Héma-Québec,

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the BCA for the province of Quebec, is attempting to increase its degree of self-sufficiency by appealing to voluntary nonremunerated (VNR) donors. In Quebec, as is the case in many countries,^{4,5} plasma and platelet donors (PPDs) are traditionally recruited among whole blood donors (WBDs), but apheresis and whole blood donations differ in a number of ways. Apheresis donation can only be made at permanent collection sites. There are currently eight collection sites equipped for apheresis donation in Quebec; four centers devoted to the collection of plasma for fractionation have been open for less than three years. Apheresis donation processes are also more time-consuming, since saline and red blood cells (RBC) must be returned to the donor. A typical visit to the collection center (from the point a person walks through the door to the point he exits) takes a minimum of 45 minutes for plasmapheresis, and up to three hours for plateletpheresis as compared to 15 minutes for whole blood donation. In addition, in Canada, whereas a whole blood donor may only donate once every 56 days, a plasma donor may donate every 6 days, and a platelet donor every 14 days. The recent increase in plasma donations in Quebec is largely due to the fact that it is now possible to make both plasma and platelet donations during the same appointment every 14 days, rather than every 56 days as was the case previously.

The majority of research on apheresis donation has focused on donors' socio-economic profiles,⁶⁻⁸ conversion process,^{5,9-13} barriers (deterrents),¹⁴⁻¹⁸ and donors' motivations.^{6,7,9,19-27} Some of these studies were conducted in countries where remuneration for plasmapheresis or plateletpheresis is available.^{4,17,18,23,25} Data compiled by the Australian Red Cross Blood Service in a VNR context reflected a higher proportion of older, retirement-aged men in the active pool of plasmapheresis donors.²⁸ A survey conducted by Veldhuizen and van Dongen²⁴ revealed equal numbers of men and women among plasma donors registered in the program for three years or less. Women seem to have a higher rate of discontinuation of the practice due to their greater number of complications and reactions following plasma donation.^{18,29} The motivators most frequently cited by PPDs were prosocial.⁹ Some studies highlighted the importance of the interpersonal relationships developed with collection staff and other donors, the ease of developing a routine, the ability to increase one's number of donations, or developing a sense of belonging to a blood donation "elite".^{5,7,8,20,22,26-28}

The Australian Red Cross Blood Service is currently conducting a pilot test to compare the feasibility of offering new donors the option to choose between whole blood or plasma by apheresis. Notwithstanding, in many VNR contexts, recruitment for apheresis is mostly done by soliciting whole blood donors.^{5,22} Psychological research suggests that different determinants have been associated with the intention to

convert to apheresis: age, frequency of WB donations, feeling good and being proud, a sense of obligation, perceived social pressure, ease, and confidence.^{5,7,11,13,24} Personalized communications from the BCA were also positively associated with intention to convert.^{7,11} Critical belief analysis revealed that the family's influence was vital to conversion, but support of colleagues was more important to the continuation of plasmapheresis.¹³ Not all WBDs, however, are prepared to convert to apheresis donation.^{13,15,17} According to Veldhuizen et al.,²⁴ "different donor profiles for whole blood and plasma donors already exist before the very first donation experience" (p. 1684). If their profiles are different, maybe they follow different paths to develop their donation career.

In 1991, Piliavin and Callero published a study on WBDs' donation career.³⁰ They found that family tradition and knowledge of blood donation context were important factors for the beginning of a donor career. In the long term, donors would be more influenced by intrinsic motivations and would identify more closely with the blood donation cause. Psychological studies confirmed variations between novices, early career donors, and established whole blood donors.^{9,21,31-36} Like most other researchers, Piliavin and Callero³⁰ did not seek to understand how individuals experienced donation on a personal level, but rather attempted to get an overall perspective on the donation experience. They reiterate the fact that there are multiple paths leading to regular donation. It is probably also the case for PPDs but, to our knowledge, their situation has not been studied by Piliavin and Callero or by other researchers thus far.

In response to these gaps in the literature, this study seeks to provide an exploratory analysis of PPDs' career based on 50 in depth face-to-face interviews conducted with plasma and platelets donors, in Quebec, Canada. These interviews provided information related to the beginning of the donor career, as well as personal and social factors that contributed to significant career's shifts.

In preparing this article, we drew on sociological theories of processes, which seek to understand how certain phenomena occur.³⁷ According to Pettigrew,³⁸ a process is "a sequence of individual and collective events, actions, and activities unfolding over time in a context" (p. 338). A sequence is an ordered succession of events.³⁹ Sequential analysis is a standard in psychology, but is also present in sociology, where the focus is often studying turning points or careers.^{39,40} In sociology, the procedural approach favors the use of qualitative data, even if this data is treated in a quantitative manner.³⁷ Action is always considered as occurring within a given context.^{38,40} Sequential analysis must therefore include an examination of the various elements that make up a certain configuration.⁴¹ These can include: (1) elements of the past—the origin of the career and the past of individuals; (2) opportunities or constraints within a local or national

context; (3) relationship-based elements—family and friends who have an influence on the process; and (4) elements related to the individual's position in the social structure (professional life, marital status, etc.). Based on this theoretical framework, this article aims to offer an initial analysis of the different paths donors may follow in order to become PPDs.

2 | MATERIALS AND METHODS

2.1 | Semi-structured qualitative interviews (SSQI) sample selection

The targeted number of respondents was 50 subjects. In 2014, we conducted a questionnaire-based survey (QBS) in order to compare the motivations and the practical experiences of WBDs to those of PPDs.²⁷ For this survey, sampling (18- to 55-year-old group) was done by accessing and extracting information from Héma-Québec's donor information system (Progesa). In the QBS, PPDs were defined as those who had previously given 4 plasma or platelet donations, including a donation in the 6 months prior to the survey. PPD participants in the QBS were asked if they would like to take part in a qualitative follow-up survey. The first sample for the SSQI study (18 to 55-year-old group) was drawn from this subgroup: Thirty-three percent of PPD respondents (162/473) agreed to be contacted by the research team and gave their telephone number for the follow-up. To ensure that the SSQI sample was highly diverse, we stratified all of the 162 QBS cases where respondents had agreed to participate. They were stratified first geographically into 3 groups (Montreal, Quebec City, Trois-Rivières), then by gender (50/50), and finally by age groups (20–29, 30–39, 40–49, and 50–55). Four groups were also defined based on their PPD history since 2006: (1) 3 to 25 donations; (2) 26 to 50 donations; (3) 51 to 100 donations; and (4) over 100 donations. A total of 36 PPDs were randomly selected to take part in the qualitative study (22%, 36/162). To complete our target and include a 56- to 70-year-old group, 120 subjects were randomly selected from the Progesa database, following the same criteria used for the QBS: PPDs were defined as those who had previously given 4 plasma or platelet donations, including a donation in the 6 months prior to the survey. The Progesa database includes information about geographical location, age group and blood donation history. It was then possible to use the same categories to stratify this new group as those used for the 18- to 55-year-old group. The first 14 donors contacted over the phone agreed to take part in this study. Considering the fact that respondents recruited from the 56- to 70-year-old-group were not part of the QBS, they were specifically instructed to fill out the questionnaire (at home) prior to the interview.

2.2 | Semi-structured protocol and interview procedures

The QBS questionnaire and the SSQI interview guide were inspired by our previous qualitative studies on blood donors' motivations and practices.⁴² The first question of the QBS concerned motivators for blood donation. Several sources were used in selecting and formulating the proposed answer choices.²⁷ Respondents were given the opportunity to check off the five answers out of 22 that they consider relevant when asked about their motives for donating blood. They were also permitted to add their own reasons. During the SSQI interviews, the research team drew on the answers given in the QBS. Respondents were asked to explain: (1) the reasons why they had selected each of their 5 motives and, (2) the meaning given to each of these. In the SSQI, in addition to discussing their motivations with respondents, other topics were included: (1) family history and knowledge of blood donation before the first donation experience; (2) background to the first donation (whole blood and apheresis); (3) blood donation experience and career shifts over the years; and (4) demographic characteristics. All interviews were carried out in French, between August 1 and September 29, 2014. They were held either at the respondent's home, at a blood collection center or at our research institute, and lasted anywhere from 45 minutes to 2 hours. They were conducted using an anthropological approach, meaning that the question grid used was less formally structured than it would have been for a regular interview. This means that even if the motivations' discussion was based on the answers provided to the QBS, the exchange remained informal and allowed the respondent to make any additions he deemed necessary when describing his motivations. All interviews were recorded and transcribed. Ethics approval was delivered by both the university center and Héma-Québec. Full details on the methodology, protocol development, and interview procedures used are provided elsewhere.⁴³

2.3 | Data analysis

SSQI data was first analyzed manually using a classification grid. The team retained themes in accordance with the interview guide's sections: (1) demographic profile; (2) blood donation history; (3) practical aspects; (4) symbolic meanings; (5) motivations; (6) relational aspects; and (7) institutional aspects. Each theme was then subdivided according to similarities between participants' answers or emphasis on specific points. Interviews were coded accordingly, line by line, re-read by the main researcher, and compared with other interviews to derive consistent themes as well as variations which point to extreme cases.

According to the sociological theories of processes we chose to draw on, the path to apheresis donation must be

seen as the result of a sequence of events that is unique to each person, occurring within a given context. Our analysis focused on the occurrence of events and the presence of contextual elements identified through: (1) factual data on the study's participants, and (2) what the latter identified, through the interview or questionnaire, as exerting an influence on their donation experience. This information was synthesized using a typology of trajectories.⁴⁴ This typology aimed to distribute the 50 donors among a restricted number of relatively homogenous groups that are distinct from one another. The first step involves building trajectories using variables indicating whether or not a donor experienced a given event at a certain age. The first groups assessed in this manner were then subdivided using a decision-tree model.^{44,45} Establishing typical trajectories allows for individuals to be grouped together according to the manner in which their stories are the most similar.⁴⁶ The proposed classification remains exploratory: its objective is to identify regularities based on hypotheses put forward in existing literature.

2.3.1 | History and transmission through family (before the age of 18)

Several studies have concluded that having family members who are donors is a determinant of first-time blood donation.^{30,32,47–49} Certain donors recognize that their behavior is instead influenced by altruism being transmitted through the process of familial socialization⁵⁰ (see also: ref. [48]). However, this altruistic socialization (at times stemming from the transmission of religious values) must occur in combination with other factors in order for individuals to choose blood donation over other charitable activities.

2.3.2 | Awareness of the need for blood products: transfusion recipients in the immediate circle

Personally knowing someone who has received blood transfusions is clearly an incentive for first-time blood donation.^{30,47} If this event occurs before the age of 18, within a context where the future donor has received altruistic socialization he deems significant, the combination of these two occurrences can lead the individual to choose blood donation over a different charitable cause.

2.3.3 | Age at time of first donation

Strategies for recruiting new donors aim to convince individuals to give blood as soon as they are of age to do so. This is precisely why BCAs hold mobile blood drives in educational institutions. Donors' families also incite young people to

give blood for the first time starting at the age of 18.⁵⁰ In fact, for some, giving blood when they turn 18 is considered a form of initiation into adulthood.⁴² It is therefore likely that those who are young when they give blood for the first time have a significantly different profile than those whose first donation occurs much later in life.

2.3.4 | Circumstances surrounding first-time whole blood donation

External pressures (family, friends, and group) have often been identified as determinants of first-time WB donation.^{30,32,36,47,51} Given how important intrinsic motivations are to the continuation of a blood donor's career,^{5,30,33,36} it might be interesting to distinguish, early on in the process, those who made first-time donations as a result of such pressures from donors who did not.

2.3.5 | Evolution of donor career and converting to plasma and platelet donation

Psychological research on blood donation has demonstrated that factors such as perceived behavioral control, self-efficacy, self-identity, and self-positive image help explain the retention of WBDs and their conversion to apheresis donation.^{4,11,21,24,35} Certain contextual elements—such as the presence of donors or transfusion recipients in one's immediate circle, awareness of the need for blood products in different spheres of activity, one's state of health and other aspects of one's private life—may also influence career continuation, intensity of the practice, and conversion to apheresis donation. Institutional conditions can also be a determining factor, specifically where conversion is concerned.^{7,11,35}

2.3.6 | Motivation profiles

Motivations stated by respondents in the QBS and in the SSQI constitute a direct source of information about determining factors in their donation career. For example, donors may have been influenced by blood donors or recipients in their immediate circle and they will declare this influence has one of their main motivations for giving blood. The analysis of the complete list of 22 motivations proposed in the QBS shows that they can be grouped into subsets, contributing to define specific profiles of donors.

3 | RESULTS

3.1 | SSQI population profile

In keeping with the selection criteria, equal proportions of women and men were selected for the qualitative panel

TABLE 1 Demographic variables for PPDs from the semi-structured qualitative interviews (SSQI) panel and the BCA's panel, 2014–2015

	SSQI		BCA's panel n = 9915		SSQI	
	n = 50	%	%		n = 50	%
Region						
Quebec city	20	40	32		19	38
Montreal	20	40	22		26	52
Trois-Rivières	10	20	7		5	10
Gender						
Women	25	50	22			
Men	25	50	78			
Age						
18–29 years	10	20	25			
30–39 years	10	20	13			
40–49 years	9	18	14			
50–55 years	7	14	48			
56 and over	14	28				
PP donations - 2006–2014						
3–25 donations	22	44				
26–50 donations	13	26				
51–100 donations	9	18	n/d			
Over 100 donations	6	12				
Civil status						
Single					19	38
Married-common law					26	52
Divorced-separated-widowed					5	10
Level of education						
Elementary/High School					8	16
CÉGEP					25	50
University					5	10
Occupation groups						
Manager					4	8
Professional					10	25
Teacher					3	6
Technician					7	14
Health care assistant					2	4
Office, sales and other support					8	16
Factory/construction worker					5	10
Other					1	2
Unemployed					2	4
University student					8	16
Health sector workplace (or field of study)					12	24
Retired ^a					9	18

^aRetired participants are included in the occupation groups' distribution, based on their former occupation.

(Table 1). In the BCA apheresis panel, women represented 22% of PPDs and 45% of plasma donors (not shown). The age group distribution for the SSQI was similar to the BCA panel. Few donors had a high number of PP donations. In the BCA panel, no >7% of PPDs had over 10 donations/year (not shown). Also, the SSQI panel included donors from Trois-Rivières (10/50), where the plasma collection center had only been open for a few months at the time of the survey. The majority of respondents were married, but this sample included a significant number of single respondents as well as divorced/separated/widowed respondents. In terms of education, most respondents were well educated (50% Cégep [In Quebec, CEGEP (for *Collège d'enseignement général et professionnel*) is an educational stage between high school and university, and is comprised of professional technical programs (3 years) and general pre-university programs (2 years).], 34% university). Many of them also held skilled jobs (8% managers, 25% professionals, and 6% teachers). Almost a quarter of these jobs (or university programs where students are concerned) were related to the health sector.

3.2 | Events and contextual elements throughout the PPDs' career

Close to half of the study's participants had been made aware of blood donation before the age of 18, either because at

least one relative (father, mother, grandmother) was a blood donor (19), they had volunteered with the BCA and/or they knew someone who had received a transfusion (7, including 4 whose parents were donors) (see Table 2). Of 27 respondents who had given blood for the first time at the age of 18, 11 had at least one parent who was a donor. Three began their career as donors late in life (at 30 or 45 years of age), after another family member (brother, sister, daughter) adopted the practice. In all three cases, the donors quickly converted to apheresis donation. A good proportion began giving whole blood by 20 years of age (34/50). Half of respondents could not recall if they had made their first WB donation alone or if they were accompanied by someone else. Among the 25 others, 12 were alone when they first donated blood and the remaining were accompanied by someone else. Five of the 12 respondents who claimed they had gone alone when donating blood for the first time did so at school. Group-type donations seem more frequent at the workplace. First-time WB donations most often occurred at mobile blood drives.

When respondents were asked to identify the events and contextual elements that had the biggest influence on their career as donors, they mentioned: (1) the illness or death of a loved one (15); (2) knowing a PPD (9); (3) awareness of the need for blood products acquired through their studies in the field of health (4); (4) working or volunteering in this field

TABLE 2 Events and contextual elements throughout the PPDs' career

PPDs n= 50		PPDs n= 50	
Before 18 years old		Other significant events throughout the career	
Family history of blood donation	16	Having known PP donor	9
Familiarity with BD or having known someone who needed blood	7	Having known someone who needed PP or blood	15
First WB donation – age		Being close to blood needs at work/as volunteer	8 4
18 years old	27	Familiarity with blood needs in field of study	8
19–20 years old	7	Other personal events	3
21 years old and over	16	Conversion to PPD - circumstances	
First WB donation - circumstances		Proposed by family member or friend	7
Alone	12	Directly proposed by BCA's employee	13
With a family member	4	Having seen documentation or equipment during a WB donation – asked for information	12
With a friend/in a group	9	In the course of a conversation with BCA's employee or volunteer	11
Do not remember	25	Advertisement announcing the opening of a new collection centre	7
First WB donation – site			
At school	17		
At work	6		
At another mobile collection centre	16		
At a permanent collection centre	11		

or with a vulnerable clientele (8); and, (5) personal situations (3). Contextual elements may have had the effect of strengthening the motivation of donors, increasing their frequency of donation, convincing them to become PPDs or converting them to this practice if they were already WBDs.

All of the respondents remembered the circumstances leading up to their first plasma or platelet donation. Seven were invited by a friend or a family member. In the other cases, the influence of the BCA was a determining factor, regardless of whether it was the donor, an employee or a volunteer that took the initiative. Marketing campaigns, documentation available at the collection site, apheresis equipment in plain view of WBDs, and face-to-face discussions were all measures that helped convert individuals to apheresis donation.

3.3 | Motivation profiles

Similarities between donor careers were provided through the analysis of blood donation motivations declared by respondents in the QBS and in the SSQI. Four distinct profiles were drawn up following the compilation of results (Table 3). The first profile (19 respondents) refers to those for whom blood donation is a *family tradition*. This may have been declared as a motivation directly in the questionnaire—“*Blood donation is a tradition in my family*”—or rather confirmed during the interview when the respondent: (1) indicated the presence of blood donors in his family and (2) explained that he chose “*Helping others is in my nature*” in the questionnaire as a motivation, while referring to the fact that he had inherited this donor “nature/identity” from

his family. The second profile (12 respondents) refers to donors who inherited their altruistic nature from their parents, but who personally chose blood donation as a cause. They have many traits in common with those who fit the first profile; what sets them apart is the absence of experience with blood donation in their family. The third profile (11 respondents) is different from the second insofar as the donor's altruistic personality does not stem from any declared family influence. During the interview, these donors confirmed that they decided to give blood following their own personal norms. The fourth, and last, profile (8 respondents) refers to donors who expect external recognition and/or personal gain stemming from their blood donation—a profile that has been noted in previous research.^{11,22,52}

3.4 | Typical trajectories

As the previous results might suggest, a donor's trajectory is distinguished, first, by the presence (19/50 respondents) or absence (31/50) of blood donation as a family tradition. Certain donors point instead to inherited family values as being a significant influence on their commitment as blood donors (11/31). Whether influenced by their families or not, donors' careers were then distinguished as having started early (34) or late (16). Six typical trajectories can therefore be created based on these preliminary distinctions (see Table 4). Subtypes then appeared with the addition of other contextual elements, certain motivation profile characteristics and circumstances under which the conversion to apheresis donation occurred.

TABLE 3 Proportion of PPD respondents for each selected motivator in the questionnaire (including elements added during the interviews), and distribution of PPDs respondents according to four motivations profiles

QBS Motivators	QBS n = 50	+ info from SSQI	Profile 1 ^a	Profile 2 ^b	Profile 3 ^c	Profile 4 ^d
			n = 19 %	n = 12 %	n = 11 %	n = 8 %
My blood can save lives	36		79	64	91	50
Helping other people is in my nature	32	Family = 21	58	83	0	0
		No family = 11	0	0	82	25
I think there is a strong need for blood products	28		58	50	64	50
It gives me a sense of pride	25		53	42	36	75
It's a positive thing to do and requires little effort	25		47	33	82	37
It's my civic duty/a way to help out the community	16	+ 1	26	25	36	63
I give thinking that a member of my family or a close friend could need blood someday	17		42	42	18	25
Someone close to me has received one or more blood transfusions in the past	14	+ 2	32	58	18	13
I like to have goals (20, 50, 100, 200 donations, etc.)	8	+ 2	21	0	0	75
I receive telephone reminders from Héma-Québec	8		5	25	27	13
It's an activity that encourages you to monitor and take care of your health	5	+ 3	11	17	18	25
I have a rare and sought-after blood type	5	+ 4	21	8	18	25
It gives me confidence that others will give if I need it later	4		5	17	9	0
Blood donation is a tradition in my family	4		21	0	0	0
I feel recognition from people around me	4		0	0	9	37
My religious practice or convictions have encouraged me to donate	3	+ 7	26	33	9	0
It gives me energy in the following days	2		5	8	0	0
A blood drive is being held near where I live or near my workplace/place of study	2		11	0	0	0

^aProfile 1 = Tradition of blood donation in the family.

^bProfile 2 = Family altruistic/religious values' inheritance.

^cProfile 3 = Personal norms/altruism.

^dProfile 4 = Indirect reciprocity/personal benefits.

3.4.1 | Part of family life

Donors typically following this trajectory were first influenced by the fact that their parents were already blood donors. As one might expect, donors following this trajectory are also grouped together in the first motivation profile (*family tradition*). They made their first WB donation as soon as it was possible to do so. These particular donors identified with the cause because it was part of their family history—in certain cases, for over two generations. Some had even made a habit of donating together as a family. In some instances, the

conversion to apheresis donation occurred because another member of the family was already a PPD. Among younger donors, the conversion can occur quickly. For others, becoming a PPD was a natural part of one's blood donor career, and a commitment to be transmitted to one's own children.

3.4.2 | Rediscovering the legacy

Those whose parents were blood donors may not necessarily want to follow in their footsteps. However, following a given

TABLE 4 Typical plasma and platelet donors' trajectories

Family model/no	First WBD	Events/contextual elements	Trajectory type	Illustrative quote (sex, age, region, plasma/platelet donations' number, 2006–2014)	Conversion to PPD
Family tradition (n=19) • Family donors before 18	Early (18–20 years old)	• Natural continuance • Going to the blood drive together	1. Part of family life (13)	I would always say, “When I turn 18, I’ll finally be able to give blood.” My parents had always been blood donors and I couldn’t wait to start donating blood myself. [...] In fact, I was the one who first starting donating platelets, and when I told my parents about it, they thought it sounded interesting. So, we started donating blood as a happy little trio. We were all plugged in at the same time [laughs]. (W, 28, Mtl, 14 PPD)	Fast (Less than 10 WBDs) • Personal invitation • BCA or donor initiative Late (few years) • BCA or donor initiative • BCA marketing, leaflet
• Motivations: tradition or inherited donor’s “nature”	Late (26–53)	• Family: serious illness or death/transfusion	2. Rediscovering the legacy (6)	My father had been donating blood for years. [...] Then, my brother died. I didn’t have any money to donate to the cause, but I knew that plasma could help heal burn victims. [...] Now, giving blood is just a normal part of my life. (W, 31, TR, 5 PPD)	Fast • Specific events Late • BCA initiative
Family altruistic transmission (n=12) • No family donor before 18 • Motivation: inherited altruistic “nature”	Early (18–20)	• Off-family awareness for BD • Studies/Health sector • Transfusion	3. Early co-occurrences (8)	It comes from my family. We were 8 kids, so everyone had to help. Plus, all the members of my family were part of a community movement. I was introduced to blood donation when I was part of a youth movement. [...] When they told me I could donate more regularly, I kept giving but switched over to apheresis donation. (W, 70, Mtl, 27 PPD)	Fast • Off-family awareness Late • Specific events • BCA initiative, leaflet
	Late (27–40)	• Priority to other commitments • Family: serious illness or death/transfusion	4. Blood donation: a new commitment (4)	My grandmother helped considerably. [...] I volunteer. I am part of four different organizations that help families. It’s just in my nature. [...] My uncle had stomach surgery and that really influenced me. It was a real trigger. [...] Thursday mornings are sacred—that’s when I donate plasma. (W, 69, Qc, 73 PPD)	Fast • Specific events • Personal invitation Late • BCA initiative

(Continues)

TABLE 4 (Continued)

Family model/no	First WBD	Events/contextual elements	Trajectory type	Illustrative quote (sex, age, region, plasma/platelet donations' number, 2006–2014)	Conversion to PPD
Individual act (n = 19) • No family model • Motivations: “nature”–personal norms (9) or personal benefits (8)	Early (18–22)	<ul style="list-style-type: none"> • Off-family awareness for BD • School blood drive • Studies/Health sector • BCA Marketing • To know blood group 	5. Wholly-assumed blood/PP donor identity (14)	<p>Even before I turned 18, I remember seeing the ads and being interested in blood donation. A friend of mine and I made a pact. We agreed that we would donate for the first time when we turned 18.</p> <p>When I first donated, I really liked how good it made me feel, so I kept doing it. Héna-Québec was the biggest influence in helping me understand that I could have an impact on others. [...] One par-ticular nurse told me “If you want to increase your number of donations, you could always donate platelets. Here’s a brochure.” When I saw the number of donations I could make, I was interested. (M, 24, Mil, 64 PPD)</p>	<p>Fast</p> <ul style="list-style-type: none"> • BCA initiative, marketing • Late • Personal invitation • BCA or donor initiative • BCA leaflet
	Late (30–52)	<ul style="list-style-type: none"> • Blood drive at work (group) • Work/health sector • Self: transfusion • Civil status 	6. Late vocation (5)	<p>I’m the kind of person who enjoys helping others. I’m really involved in my community. I’ve always been that way. [...] I decided to give blood because I received transfusions myself. [...] What really interests me now is donating plasma because I can give every 6 days. Donating plasma is a way for me to make up for what I didn’t donate when I was younger. (M, 66, TR, 18 PPD)</p>	<p>Fast</p> <ul style="list-style-type: none"> • Work/Health sector • BCA leaflet • Late • BCA or donor initiative • BCA marketing

event—for example, if a loved one becomes ill and needs blood transfusions, or perhaps even plasma or platelets—having parents who were involved in this practice can take on a whole new meaning. For some, the event itself allowed them to understand the value of plasma or platelets; after only a few WB donations, they quickly converted to apheresis. For others, the conversion was slower and unrelated to whatever initiated the first WB donation. This trajectory also includes donors associated with the motivation profile 1 (*family tradition*). The career path of the donors associated with the second profile (*family altruistic inheritance*) follows rather one of the next two trajectories.

3.4.3 | Early co-occurrences

Many recognized that they had inherited family or religious values favorable to civic engagement, and had also been made aware of blood donation because a friend had received transfusions or they frequented an environment conducive to such awareness—for example, while studying to become a nurse. Rapid conversion to apheresis was more likely among young people who had been informed of the usefulness of these products before their first donation. Various reasons explained late conversion.

3.4.4 | Blood donation: a new commitment

Among respondents who inherited altruistic family values, some only took an interest in blood donation later in life. They initially modeled their parents' social commitment by involving themselves in other causes. The illness or death of a loved one was usually a turning point in their lives. The situation made them aware of the need for blood products because their loved one experienced this need firsthand. In certain situations, death itself was the most significant event: donors chose a cause that would allow them to save lives because they were personally unable to save the life of their loved one. Rapid conversion to apheresis donation can be explained by the fact that the donor's loved one received plasma or platelets or that a friend was also a PP donor. Late conversion was connected to the initiative of a BCA employee or volunteer who suggested this practice.

3.4.5 | Wholly embraced blood/PP donor identity

Certain respondents always knew they would give blood despite the fact that no one in their family was a donor or was involved in any social commitment. These are the donors associated with the third motivation profile (*personal norms/altruism*). Others were made aware of the cause either through people other than family members whom they

consider to be significant in their lives, because they were influenced by the BCA's advertising campaigns, because the BCA held a blood drive at their school, or because respondents were made aware of the importance of blood products in a class at school. Whether it occurred early or late, interest in plasma or platelet donation often originated during the blood drive itself—for example, after seeing the apheresis equipment and asking what it was used for. Included among these donors are those who began their donor career in one of the new dedicated plasma collection centers; in this case, they were motivated by advertising for the center's opening. Some of the donors associated with the fourth motivation profile (*indirect reciprocity*) are present in this group. They were convinced, among others by the BCA, that blood donation was a significant way to help their community.

3.4.6 | Late vocation

The last five (of 8) donors associated with the fourth profile (*indirect reciprocity/personal benefits*) are grouped together around this last trajectory. These respondents had never thought about giving blood until specific circumstances motivated them to do so. This might have been a blood drive held at their workplace, which they attended with colleagues. Some respondents did not work in a health-related profession, but had a job—in administration or construction, for example—that occasionally took place in hospital settings. Others referred to personal reasons: having received a transfusion or wishing to demonstrate that they are responsible citizens, even if they “are single and have no children.”

3.5 | Demographic differences and typical trajectories

The cross analysis of trajectories with respondents' sociodemographic characteristics reveals very little. Men and women were divided equally in all trajectories. Field of study or work (health) proved significant in the case of certain participants who did not have family members who were donors. The T1 trajectory (*part of family life*), characterized by a rapid conversion to apheresis donation, was composed entirely of young people under the age of 35 (equal number of men and women) who were frequent donors and very committed in their blood donor careers (average of 75 donations between 2006 and 2014). Donors with the highest number of donations were more commonly those who had individual donor careers (T5 and T6) or altruistic transmission careers (T3 and T4), hence confirming the influence of intrinsic motivation (individual or transmitted) on the practice. Late careers (T6, late conversion to apheresis), for their part, included older individuals with a low number of donations.

4 | DISCUSSION

Although results of previous studies can be used to create a profile of the typical PPD, our aim was rather to demonstrate that there is more than one path leading to apheresis donation. Previous research has emphasized the importance of family influence in relation to the first-time blood donation. Our results show that familial influence can be just as significant when one has no blood donors among their relatives. Since familial socialization helps build one's identity, inheriting altruistic values provides fertile ground for the development of intrinsic altruistic motivations, which are an integral part of the donor's personality. We observed that conversion to apheresis donation can also occur through the family's influence (donors or transfusion recipients) (see also: ref. [22]). BCAs should continue to think about the best way to guide and support families, especially when the latter are eager to instill a desire to give blood in their children.

In some cases, contextual elements can help strengthen the moral conviction of individuals or their sense of obligation toward their loved ones. Other donors, however, are hardly affected by external events—their practice of giving blood stems more from how they personally benefit from it. This situation is similar to that observed by Szymanski,²² who cited the case of socially isolated individuals who found platelet donation to be a significant source of self-esteem, an opportunity to be part of a special group.

The fact that the T1 trajectory (*part of family life*) was composed entirely of very committed young people under the age of 35 contrasted heavily with the traditional image of a PPD: an older man who converted to this practice after a relatively long career as a WBD. These results confirmed the existence of a potential PPD clientele that can be recruited outside the traditional pool of WBDs, even within the context of VNR blood donation. Nevertheless, converting WBDs will remain a major strategy for BCAs and blood collection employees should attempt to recruit donors who are the most interested in the advantages associated with apheresis donation. BCAs can also focus on certain contextual elements when developing activities to increase public awareness of plasma-derived products—for example, by specifically targeting those studying in health-related fields. Misje et al.³² were surprised to discover that healthcare professionals were underrepresented among blood donors. Our rather small sample, on the other hand, included a fair number. In addition to this, our study showed that various types of jobs (including administration and construction) are occasionally conducted in a hospital setting, which increases the pool of individuals who might be made aware of the need for blood products.

We also observed that mass-marketing activities publicizing the opening of plasma collection centers did indeed attract a new clientele of PPDs, but their long-term commitment toward the cause remains to be proven.

Like any other study, ours has its limitations. First, the QBS and SSQI studies were conducted on samples of blood donors in Quebec, Canada, who may differ from donors in other countries. We should also point out that plasma and platelet donors were grouped together for the purpose of this study. One reason for this is that, in Quebec, donors increasingly make both plasma and platelet donations during the same appointment. A similar grouping has been effected in previous studies as well. This was the case for Bednall and Bove,⁹ when they produced their meta-analysis of blood donors' motivations, and also for Ringwald et al.,¹⁷ in their analysis of the reasons for the non-return of apheresis donors. Lastly, the conclusions drawn here cannot be generalized, because of the qualitative method used. The findings of this study are indeed limited by the unavoidable compromises in terms of reliability and generalizability that must be made in qualitative research, in order to enhance interpretive validity. Despite this, data on motivations and demographics have been triangulated from two different sources (the QBS and the SSQI). The results were influenced by the fact that motivations were self-reported in both studies—socially desirable responses may therefore have biased results to some degree. Events were also reported in retrospect, whereby a recall bias may have come into play. In the future, a longitudinal study following donors as they evolve throughout their career might enable researchers to overcome these limitations. Finally, while generalizability is not a criterion that applies in qualitative research, the exploratory scope of the study would nonetheless have been enhanced with a larger sample of respondents.

5 | CONCLUSION

In the context of VNR blood donation, recruitment to apheresis traditionally occurs through WB donation. Given the increased demand for therapeutic plasma-derived products, BCAs must find new ways to recruit PPDs. Our exploratory findings suggest the existence of diversified donor trajectories, and confirm the importance of conducting more in-depth analyses of the reasons by which donors justified giving blood, but also of the sequence of events occurring along their career, which are embedded in a specific context. Our results suggest that BCAs should develop strategies more carefully tailored to different potential clienteles if they wish to convince WBDs to convert to apheresis donation, and also that BCAs should focus on recruiting and retaining young PPDs.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interests relevant to the publication of this article.

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