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COMMENTARY

TRANSFUSION

Rethinking the role of older donors in a sustainable blood supply

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1 | INTRODUCTION

Many countries, particularly high human development index countries, are facing the challenge of an aging population.[1] For Blood Collection Agencies (BCAs) in these countries, an aging population poses two key problems. First, the loss of an increasing proportion of their donor base as donors "age out" of donating. Second, a projected exponential growth in demand for blood products as populations age and disease burden increases, of which many diseases (e.g., cancer) likely require treatment with blood-derived products.[2–5] Historically, increases in demand have been met with initiatives to either reduce demand (e.g., patient blood management)[6] or increase supply.[4] With limited initiatives occurring to curb demand further,[7,8] BCAs need to increase supply. However, as Tran and colleagues noted in their recent commentary,[8] while we teeter on the precipice of increasing demand for blood products, participation rates in donating are falling.[8,9] Thus, there is growing concern about the ongoing sustainability of the blood supply.

Donor recruitment campaigns have historically been targeted at the young.[2,10,11] The assumption underlying this approach is that younger donors are more likely to be healthy and have a long donor career.[12–15] Yet, younger donors are not an all-encompassing solution. As noted, in many countries there is an aging population, meaning that the proportion of the population who are young is diminishing.[1] Further, in this cohort, and in cohorts who are middle aged, the decline in participation in blood donation is particularly pronounced (e.g., 16–24 years,[8] 17–35 years,[16] 25–49 years,[3]). Those recruited from these cohorts are less likely to return and have higher rates of deferral (i.e., be ineligible to donate) than other donors.[2,10,12,17,18]

Further, the assumption that younger donors will have a long donor career does not consider the reality that these donors increasingly face. While younger donors have always been time-poor with limited availability to donate, the casualization of the workforce may exacerbate this trend, with United States survey data finding that 47% of Gen Z respondents reported having three jobs.[8,9,15] In 2023, 36% of US workers identified as part of the gig economy (i.e., casual, flexible employment outside the scope of full-time or part-time employment), with this proportion expected to increase to 50% by 2027.[19] The net effect of holding multiple jobs and time invested at these multiple jobs means that younger and middle-aged people are increasingly time-poor.[19] Further, donors' careers are not continuous, with donors lost to the competing demands of study, work, family, and/or carer responsibilities.[8,20]

2 | OLDER DONOR CONTRIBUTIONS TO THE BLOOD SUPPLY

In contrast to younger donors, donors aged 50 years and older are a potentially more productive cohort. While literature focusing on this cohort of donors is sparse (a point we revisit below), and 50+ years is a broad age range within which much diversity is observed in how people age,[21,22] the productivity of this broad cohort of older adults is borne out when both life-stage and statistics are considered. Adults aged 50+ years represent a life-stage during which people may become more aware of, or have capacity to prioritize, blood donation. For example, some adults may be approaching a time in their life where childcare responsibilities are diminishing, and other caring responsibilities have not yet fully emerged (parents and/or grandchildren). They may be considering, planning for, or actively transitioning out of work (part-time work, retirement), and/or moving to a retirement living community. This life-stage is an ideal time to "plant the seed" for including blood donation as part of their lives or routine, as a new or returning donor. Even if they do not have the personal resources or capacity now, they may do so in future. Older adults may also increasingly be exposed to loved ones, friends, and acquaintances who need blood/blood products, and these experiences could elevate the importance of donating blood in their awareness, and ultimately their desire to donate blood when they have time.

Donors aged over 50 years demonstrate increased growth, higher donation frequency,[3,8,9,14] consistent contributions over time,[2] and fewer adverse events.[18,23] Older first-time donors also have higher rates of return than other first-time donor cohorts (e.g., >80% return of donors aged 60+ years vs. 62% <40 years).[11] Despite these positives, relying on older donors as one of the ways to ensure the ongoing sufficiency of the blood supply has not yet been widely considered (cf. Goldman and colleagues).[24,25] This limited consideration may, at least in part, be due to the debate that has raged around whether "old" blood is of poorer quality than "young" blood.[26,27] However, results regarding the impact of donor age on recipient outcomes are not consistent in observational studies, with several studies showing no significant associations with donor age and recipient mortality.[28–31] To date, no clinical trials exist that examine the impact of donor age on recipient outcomes,[28] thus the debate continues.

Alternatively, aging and older donors are often positioned in the literature as undergoing an inevitable decline where older people transition to become recipients of blood products, rather than donors.[3] While statistics may support this perspective,[32,33] many older people age well.[24] Yet, excluding workplace or team-based initiatives that may include older adults, older people generally are not typically targeted as first-time donors for mass recruitment by BCAs in marketing campaigns.[34] Older adults also do not seem to spontaneously start donating, with only 6% to 13% of adults aged 50+ years beginning their donation career at this age.[18]

Rather than viewing the "aging out" of donors as problematic, or older adults as recipients rather than donors, it is perhaps time that BCAs instead consider older donors as a potential core strength of their donor base.[9] Acknowledging that individuals at different ages and life-stages likely have varied personal resources and capacity, donors aged 50 years and older are a largely untapped resource for recruitment given most campaigns focus on younger audiences.[34] Revisions by BCAs to upper age limits for donation,[24,34] and the removal of the variant creutzfeldt-jakob disease (vCJD) permanent deferral criteria in a number of countries,[35–37] also mean an increase in the number of donors in this older cohort who may be eligible to donate. Older donors are a dedicated and growing cohort, with increasing healthy-life expectancy and, potentially more time availability (for those with reducing caring responsibilities or at a life-stage enabling part-time work or retirement), who have the potential to sustain the blood supply in the short–medium term.[9,38,39]

3 | WHAT DO WE KNOW ABOUT WHAT MOTIVATES AND DETERS OLDER ADULTS FROM DONATING?

Understanding older adults and what motivates and deters them from donating is critical to ensuring their

ongoing participation and ultimately the sustainability of the blood supply. However, consistent with their neglect as a cohort of donors, little research has been conducted that is specific to older adults as donors. None has focused exclusively on donors who began donating aged 50 years or older. This limitation is compounded by the fact that what is known about this cohort is largely derived from questionnaires completed by older adults who have donated. We lack an understanding of what may motivate older adults who have never donated to begin, and what may motivate older adults who donated only once or twice in their lifetime to return. Semi-structured interviews with donors, non-donors, and lapsed donors would go some way to alleviating this knowledge gap and providing key information to underpin recruitment strategies for older donors.

The few studies available, including those that made age comparisons between existing younger and older (50+ years) donors, provide us with some insight into what may particularly motivate this group of donors. Broadly, these can be categorized into contextual factors (e.g., perceived need for donations, helping others),[40–45] perceived personal resources to be able to donate (e.g., having time or being in good health),[38,43,44,46] and their own personal needs (e.g., wanting to do something useful).[38]

The barriers reported by older adults and donors can be broadly categorized into personal resources and organizational factors. The personal resource barriers identified to date typically center on health and relate to anticipated (e.g., feeling old, tired) and actual health conditions or physical limitations,[38,47–51] or the perceived impact of donating on health (e.g., fainting, dizziness, needle stick site).[38,43,49,50,52] However, some older adults note that due to their lifestyle commitments they are (still) too busy to donate.[38,43,50] Consistent with other groups that have historically not been the focus of recruitment efforts (e.g., African American donors),[53] organizational barriers comprise issues of access to donation opportunities (e.g., center location, lack of public transport),[47,54,55] and the perceived bureaucracy surrounding donating (e.g., arbitrary age limits, lack of effective engagement with donors).[24,38,48,56]

For older adults, health appears to be a central theme in both encouraging and deterring donation; those in good health feel they should donate, and those who have poor health or anticipate a health impact of donating do not donate. Yet, the degree to which perceived and actual health truly impacts donation decisions needs more intensive exploration in older adult populations.[57] Older adult and donor perspectives on the broader intersection between aging, health, and donation are also likely important in determining willingness to donate, but an exploration of this is currently lacking in the research literature.[57]

4 | WHAT ROLE COULD BLOOD DONATION PLAY IN HEALTHY AGING?

Overall, our understanding of what motivates and deters older donors, and specifically older adults who begin (or return after a long-term lapse) to donate, is limited. No research has focused on these cohorts. Nor has there been an exploration of whether motives and barriers to donation differ within older age cohorts based on individual characteristics or circumstances (e.g., age, gender, ethnicity, work status, socioeconomic status), or cultural norms within or across countries. Thus, we acknowledge that our commentary and examples given below may not apply to all older adults (e.g., those aged in their 50s), and may be specific to some ages or lifestages only (e.g., those who are retired and/or have reduced caring responsibilities). It is also not known whether motives and barriers change over time as donors become more experienced or donate different products. However, despite these gaps in our understanding, insights from the limited literature suggest that blood donation could serve an important function for older adults.

Models of psychosocial development[58] position a need to be useful as part of generativity (i.e., concern for, and acts that promote the well-being of, future generations)[59,60] which is a challenge that adults in mid-life are proposed to face as they age.[58] Adults in later life may also possess a desire to be or feel useful (i.e., inner desire) which is proposed to be one of several key motivational sources for generativity.[59,61] Older adults who frequently feel useful compared to those who rarely feel this way have shown better health trajectories,[62] and those who have persistently high versus low feelings of usefulness have decreased mortality risk.[63] Thus, for those who need to feel useful, have more capacity, and who feel able, blood/blood product donation could fulfill this inner desire to feel useful and contribute in a way that does not require a time-intensive or long-term commitment (unlike traditional forms of volunteering), and may potentially have indirect health benefits. Donation enables a positive and valued contribution to the community by helping those who need blood/blood products,[40] and the act of donating may signal to older adults that they are healthy and aging well through their continued eligibility to donate.[34,64]

5 | HOW ELSE MAY DONATION BENEFIT OLDER ADULTS?

Like volunteering, blood donation enables older adults to continue contributing to society,[65] and the oft-cited warm glow after donating is not only critical for blood donor retention,[66] but can also contribute to positive self-perceptions while aging. Further, blood/blood product donation may provide social benefits. For some, donation provides them with an opportunity to socialize (e.g., through conversations with staff),[67] connect with friends or friendship groups (e.g., donating together),[68] or be part of a workplace team or initiative. Maintaining social connections and integration may increase available support, build social capital, reduce loneliness, and protect older adults against morbidity and mortality.[68,69] Donation as an activity may also foster community mobility as donors access blood collection locations via driving or public transport, and community participation as they combine their donation with other activities (e.g., shopping for groceries, coffee with friends). Community mobility and participation in turn contribute to improved mental and physical well-being and quality of life.[70] However, the potential for BCAs to stem social disconnection or loneliness and improve self-esteem and well-being in older adults is unexplored, and the role of blood donation in facilitating aging well is unknown.[34]

6 | WHY DON'T OLDER ADULTS START DONATING?

Despite the positive benefits that older adults donating may yield for both the blood supply and for this cohort of donors, older adults may not feel welcome or wanted by BCAs. Upper age limits for donors vary significantly between countries[34] and this variation results in some older donors perceiving these age limits as arbitrary.[24,38] Further, a lack of effective communication and a lack of solicitation with this cohort excludes potential donors.[48,56] The focus on the young in recruitment campaigns highlights the need for BCAs to be more inclusive of older adults and address any resulting misperceptions that exist about age eligibility requirements. Similar to adults from ethnic and other minority populations, older adults, especially those from migrant or ethnic minority backgrounds, may not see themselves represented in recruitment campaigns and therefore fail to connect themselves as similar to others who donate.[71] Co-design with older adults from diverse backgrounds to develop age-relevant recruitment materials is likely needed to promote inclusiveness, provide relevant exemplars, and address barriers to participation of older adults who wish to be donors.[72]

In addition to not feeling wanted or needed, some older donors may also uniquely perceive a personal need to retain their blood. That is, they may perceive that they cannot spare it,[49,71] or believe that donating will lead to accelerated aging, loss of vitality, permanent weakness, and anemia.[73] Reflecting the exclusion of older adults from donating other substances of human origin, and the historical application of upper age limits for blood donation, older adults may also think their blood is inferior to that of younger donors.[74] Beliefs related to the quality of the product and the impact of donating may be shaped by gender and by culturally specific understandings of the impact of aging on the body.[57] Alternatively, these beliefs may originate in commonly held associations between aging and physical decline that extrapolate to assumptions about blood donation as unsafe for older people,[34] ultimately resulting in older people perceiving that they have limited efficacy to donate. Educational outreach by BCAs in community settings frequented by older adults may go some way to addressing any misperceptions about donating blood at an older age and alleviating older adults' concerns.

7 | WHAT MAKES A GOOD DONATION EXPERIENCE FOR OLDER DONORS?

Once BCAs successfully communicate to older donors that they are not only wanted but needed, the challenge then becomes ensuring that these first-time (or long-lapsed) donors have a good donation experience. It is well established that a positive donation experience increases the likelihood of donor return, and experiencing anxiety, adverse events, and deferrals are all deterrents.[75] However, in contrast to research focusing specifically on the management of younger donors (e.g., decreasing vasovagal reactions [VVRs] and interventions to improve retention),[76] there is an absence of research exploring the specific experiences and management of older donors. It may be that these and other previously identified factors such as a convenient location of donor centers and mobile units, flexibility in opening hours, easy access, and reduced wait times are equally important for older donors as they are for other donors.[77–79] Interactions with staff are also a key service quality indicator, and less optimal interactions lead to donor loss. In one study comparing age differences in satisfaction with the blood donation process, older donors (aged 40+ years) compared to younger donors (many of whom were first-time donors) appeared less satisfied with aspects such as the receptionist, donor interview, and customer service of the collections staff.[80]

A good or positive donation experience, however, is not simply the absence of a negative experience. Adding features to reduce anxiety and stress may foster a more supportive donation environment for donors. For instance, low environmental stimulation such as silence (e.g., reduced background noise, no daytime television) or providing real or simulated nature-based features (e.g., naturally lit waiting rooms, a garden view or greenery, non-threatening nature-themed art on the walls) can contribute to creating a supportive and less stressful environment for donors.[81–84] Interventions that add to the donation experience by increasing personal connection with BCA staff were also more successful at creating a positive experience for first-time donors and increasing their return.[75] Identifying and matching expectations of first-time older donors is also likely critical so that their experience is satisfying.[75] Those who view blood/blood product donation as an opportunity for social interaction may have the expectation of a personalized and sociable atmosphere.[85] Yet, these types of connections are typically discussed by regular donors who are familiar with staff[68] or who donate with others. Center design and processes may also make it difficult to meet these expectations in a context where efficient donor throughput is often a key performance indicator.[67,75] Regardless, these insights as they apply to older donors are purely speculative. Simply put, we do not know what the donation experience is like for donors aged 50 years and older or what a good experience entails for this cohort.

8 | ADVERSE EVENTS AND OLDER DONORS

While donor adverse events negatively impact the chances of a positive donation experience, the overall safety of blood donation appears unaffected by aging per se.[25] Where comparisons of donor safety based on age have been undertaken, these comparisons typically categorized older donors as those aged over 70 or 80 years. In a Biomedical Excellence for Safer Transfusion Collaborative across five countries, older donors (aged >71 years) had lower VVRs compared to donors aged 24–70 years. Older donors also had lower (male) or similar (female) rates of VVRs with loss of consciousness (LOC), compared to the respective sex in the younger age group (24–70 years).[25] Moreover, older donors have been shown to tolerate blood loss as capably as younger donors and are less at risk of iron deficiency compared to younger donors.[34]

Recent examinations of donor complication rates have taken a more nuanced approach, accounting for age, sex, donor experience, and/or collection type. Paalvast and colleagues[86] found that overall VVRs decreased with age regardless of collection type (whole blood, plasma) or donation experience. However, when the severity of syncopal reaction and age were considered, moderate/severe syncopal reactions (which were typically low overall at 0.04%) were found to be higher in plasma donors aged over 65 years. Similar rates of moderate/severe syncopal reactions were observed for older (65+ years) and younger (18–23 year old) whole blood donors.[86] When considering off-site VVR with LOC or major injury, female donors aged 75 years and older had higher adjusted odds ratios of experiencing these events, regardless of collection type.[87] Speedy and colleagues[88] similarly reported that VVRs decrease with age; however, returning upper-aged (>80 years) donors had higher rates of LOC (vs. younger donors), and new upper-aged (>70 years) donors had higher rates of off-site VVRs (vs. younger donors). Both groups compared to younger donors had higher rates of VVR requiring offsite medical care.[88] Thus, there are new concerns about delayed adverse events, particularly in older donors aged over 70 years, that warrant informing first-time and current older donors about the potential risk and incorporating this information into blood donor eligibility requirements.[87,88] Beyond these concerns, and acknowledging that donor safety may vary across age groups, older donors as a broad cohort appear to be able to donate relatively safely with a lower likelihood of VVRs than younger donors consistently reported,[25,87,88] indicating that they still have many good years of giving remaining.

9 | HEALTH, DEFERRALS, AND OLDER DONORS

While age in and of itself does not lead to deferral from blood donation, donors can become temporarily or permanently ineligible to donate (i.e., deferred) for a range of medical issues. Statistically, the risk of these medical issues occurring increases with age and is likely more prevalent in donors aged over 65 years.[24,89] Thus, including increasing numbers of older adults in the donor pool (e.g., removal of upper age limits, vCJD criteria) may also lead to increased deferrals in this age group.[89] Older donors, compared to younger donors, are temporarily deferred more often (male) or at similar rates (female) for hemoglobin levels below the cutoff or other reasons (e.g., their responses to the donor history questionnaire).[25] Older adults (aged 65 years and over) are more likely to be temporarily or permanently deferred for conditions such as heart disease, cancer, renal disease, diabetes, and stroke compared to younger donors.[89]

Deferrals can have a negative impact on donors' well-being and temporary deferrals may lead to short- or long-term donor lapse.[90,91] For instance, donors who received notification of temporary deferral described negative responses including, but not limited to, anger, frustration and rejection.[91] While the reaction to deferral is likely linked to the reason for the deferral, it is also probable that the reaction to deferral is commensurate with the personal importance of donation to the individual. As suggested, being able to donate may have particular significance for older adults in terms of their self-perception as healthy and contributing to society, and their social engagement.[92] Consistent with this, being deferred may have more wide-ranging implications for older donors' subjective well-being than for younger donors.[65,93,94] Such disruptions to identity can have significant negative impacts on older people and need to be proactively and effectively managed by BCAs if more older adults are encouraged to start donating. However, research exploring the impact of deferral on older donors is still needed, while acknowledging that most older donors will not be deferred.[89]

10 | CONCLUSION

BCAs face increasing challenges in maintaining the blood supply due to aging populations and growing demand for blood products. Recruitment efforts have traditionally focused on younger people, based on the assumption that they will have longer donor careers. However, participation in blood donation by these younger cohorts is declining. In contrast, older people (aged 50+) represent a largely untapped resource who, as donors, have high return rates, consistency in donation, and fewer adverse events. Despite some hesitations around "older blood," evidence suggests that older donors are valuable, healthy contributors to the blood supply. Further, being a blood donor can provide older people with a sense of ongoing health, purpose, and social connection, all of which contribute to reducing morbidity and mortality. However, many older adults do not see themselves as the target of recruitment efforts by BCAs, and there is limited understanding of their specific motivations, deterrents, and preferences for their donor experience. Addressing these knowledge gaps to improve the donation experience for older donors will help them feel valued, strengthen the blood supply, and foster positive outcomes for both donors and recipients.

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