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From Victims to Heroes: COVID-19 Convalescent Plasma Donation Awareness, Knowledge, and Willingness among Selected Respondents in the City of Manila

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Abstract

The increasing COVID-19 cases continue to rattle the Philippine healthcare system in determining the most optimal response. Efficient and effective therapeutic strategies—such as the use of convalescent plasma—for managing COVID-19 patients are needed while definitive and universal programs are still in the works. However, the consistency of implementing the COVID-19 convalescent plasma (CCP) therapy heavily depends on the supply of donated plasma units. With this, the study aimed to assess the overall knowledge and awareness of recovered COVID-19 patients regarding convalescent plasma and the factors that can affect their willingness to donate. A non-proportional quota sampling technique was employed to determine the respondents who met the inclusion criteria. Pearson's r test determined a significantly high positive correlation between donor willingness and the factors that motivate individuals to donate CCP (p-value=0.000; r=0.738), indicating that these two variables are directly related. The values obtained from the study show that knowledge demonstrates a significant, very low positive correlation with age (p-value=0.053; r=053), while awareness displays a significant, very low positive correlation with donor willingness (p-value=0.000; r=0.282). These findings suggest that motivational factors should be emphasized in the interventions and recruitment strategies for CCP donation. Continuous efforts in making the process more accessible while assuring security and safety aid to address factors that impede the practice of donating CCP. Lastly, reinforcing educational blood donation campaigns to know more about blood products other than whole blood should be available to the public, especially for the younger generations.

Keywords: blood donation, convalescent plasma, COVID-19, plasmapheresis

Introduction

The devastation brought about by the COVID-19 pandemic emphasized the necessity of strong humanitarianism, as well as an immediate solution to mitigate the wrath of the virus. The increasing COVID-19 cases in the Philippines, along with the new variants of the virus, continue to rattle the healthcare system in determining the most optimal response. This calls for the need of efficient and effective therapeutic strategies for the treatment and management of COVID-19 patients while definitive programs are still in the works. The benefits of using convalescent plasma (CP) in managing COVID-19 patients have been recognized and a response was made by the Department of Health by placing a new program that calls for donors that will sufficiently supply the demand for plasma units.

CP therapy is found to be a potential treatment and prevention tool for COVID-19 (Bloch *et al.,* 2020). It has also been recognized by several researchers that CP therapy is effective in reducing viral load and improving laboratory markers and clinical signs among patients who have either severe of life-threatening COVID-19 (Ahn, *et* al., 2020; Duan *et al.,* 2020; Li *et al.,* 2020; Salazar *et*

al., 2020; Shen *et al.,* 2020; Zhang *et al.,* 2020). Gharbaran (2021) and Avendaño-Sola and colleagues (2020) also restated its effectiveness on preventing the worsening of the COVID-19 patients with the reduction of fatalities and the need for mechanical ventilation when they were given COVID-19 convalescent plasma (CCP) transfusion. In the same studies, it was found that mortality rates in the patients who were given CCP transfusion was 0% while the control mortality rate was 9.3%.

As promising as it may sound, the success and consistency of implementing the CCP therapy heavily depends on the supply of donated plasma units from the volunteer donors. Along with determining factors such as very specific donor criteria, knowledge, awareness, and willingness that are already influencing the success or failure of CCP donation outcomes; one barrier that may exacerbate the struggle of maintaining sufficient plasma units or blood units in general, is the fear that is attributed by the COVID-19 pandemic. This is consistent with a study led by Jawień *et al*. (2021) which showed that respondents believed it was safer to donate blood after the pandemic.

On this account, there is a need for further research due to the fact that CCP donation is still a relatively novel concept to the general public (Alfouzan, 2014). Understanding what can drive these individuals to donate is the key in the improvement of these new guidelines and formulate a better response in gathering these potential donors before factors such as time and motivation disqualify or disinterest them to voluntarily participate. In line with this, the study aimed to evaluate the overall level of awareness and knowledge of respondents in the City of Manila who have recovered from COVID-19 about CCP donation and the factors that can affect their willingness to donate.

Materials and Methods

A non-experimental, quantitative, descriptive, and cohort research design was utilized with a non-proportional quota sampling technique, specifically the snowball sampling technique. Using the sample size calculator by Raosoft Inc., a sampling size of 95% confidence level and 7.6% margin of error was employed for past and potential donors in the City of Manila. From the total number of recovered patients, which is 97,576, a sample size of 164 was obtained. To ensure the consistency of the survey items, a reliability test using Cronbach's alpha was subsequently performed, resulting in an alpha value of 0.965, which depicts excellent reliability.

The selection of respondents in the study was based on the criteria for eligible CCP donors that is formulated by the Department of Health. This includes individuals who are residents of Manila, between the age of 18 to 65 years old, weighing at least 50 kilograms, was previously diagnosed with COVID-19, and with or without experience in blood donation. Meanwhile, respondents who did not meet the criteria for eligible CCP donors were excluded from the study, as well as those who do not reside in the City of Manila or who have permanent residence in the city but were not residing during the pandemic and who have not had COVID-19 or unsure if they had the virus.

A five-part survey questionnaire was conducted to assess the awareness, knowledge, and willingness of selected respondents based on questionnaires from Masilamani and Ganapathy (2020), Soriano (2019), Deepa Viswasini and Abilasha (2020), and Masser *et al*. (2020). Sections of the survey consisted of (1) demographic profile, (2) blood donation practice, (3) awareness of CCP therapy and donation, (4) knowledge on CCP therapy and donation, and (5) willingness to donate CCP. A consent form was also disseminated to ensure that the respondents wishes to participate or not in the study and that the details they encoded are truthful. The responses obtained from the survey questionnaire were organized and extracted using Microsoft Excel before importing to SPSS.

Statistical analysis of the data utilized IBM SPSS Statistics (Version 25) software. From this, a Pearson r correlation was used to examine significant correlations between two variables and it was also used to measure the strength of their relationship. As a result, the correlation among awareness, knowledge, willingness, motivators, and barriers was determined, in which a p-value of less than or equal to ≤0.05 was considered statistically significant.

Results and Discussions

Demand for CCP significantly increased during the COVID-19 pandemic due to its therapeutic benefits to those infected with the virus. Learning and understating what factors influence people to donate CCP can help increase the number of donations upon implementation of donation programs. Additionally, raising awareness play a critical role in the propagation of convalescent plasma as a potential treatment option for COVID-19.

Studies made by Kumar *et al.* (2020) and Perenc and Peczkowski (2021) emphasized how awareness to CCP donation positively influence convalescent plasma donation and how people develop a more favorable response towards it. However, a greater awareness does not necessarily equate to donation, thus, there is a need to strengthen campaigns that gear towards actual voluntary donation (Awad Al-oufi & Alghamdi, 2021). This is where it may be important to assess the following variables that may play a part in determining their overall awareness of CCP donation.

Table 1. Level of Awareness on COVID-19 Convalescent Plasma Donation

	Mean										
	Gender		**Age (years)**					**Blood donation experience**		**Willing to donate blood in the future**	
	Male	**Female**	**18-28**	**29-38**	**39-48**	**49-58**	**59-64**	**Yes**	**No**	**Yes**	**No**
I am aware of COVID-19 convalescent plasma donation.	2.83	3.25	3.24	2.77	2.77	3.11	2.33	3.27	2.86	3.11	2.20
I am aware of the mechanisms of COVID-19 convalescent plasma donation.	2.57	2.75	2.76	2.56	2.31	3.00	2.00	3.05	2.33	2.73	1.80
I am aware of the guidelines for COVID-19 convalescent plasma donation.	2.47	2.78	2.69	2.53	2.38	3.00	2.30	3.04	2.27	2.68	1.90
I am aware of the indications of COVID-19 convalescent plasma donation.	2.39	2.65	2.60	2.59	2.46	2.67	1.67	2.90	2.20	2.58	1.80
I am aware of the contraindications of COVID-19 convales-	2.36	2.52	2.47	2.47	2.15	2.67	2.00	2.86	2.07	2.49	1.80

cent plasma donation.											
I am aware of the side effects of the COVID-19 convalescent plasma donation.	2.33	2.61	2.52	2.49	2.15	2.78	1.67	2.83	2.16	2.53	1.70
Overall mean	**2.49**	**2.76**	**2.71**	**2.57**	**2.37**	**2.87**	**2.00**	**2.99**	**2.30**	**2.69**	**1.87**
Interpretation: 4.21-5.0 extremely aware; 3.41-4.20 moderately aware; 2.61-3.40 somewhat aware; 1.81-2.60 slightly aware; 1.00-1.80 not all aware											

The study showed that females, respondents aged 49-58 years old, those who have blood donation experience, and those who are willing to donate blood in the future were somewhat aware of CCP donation (Table 1). These are consistent with the findings of Perenc and Peczkowski (2021), in which female respondents exhibited more awareness. However, this is contradicted by the results from a study made by Nigatu and Demissie (2015) which showed how men are more frequent blood donors than women. The results of this study may be attributed to the fact that women are more active and participative in the blood donation process. Meanwhile, older respondents have more opportunities to hear and learn about the nature and mechanism of CCP donation. Moreover, COVID-19 recovered patients and active or frequent blood donors are probably more directly exposed to greater and more targeted information regarding CCP donation through pre-donation counseling and education. The study also revealed that respondents who were willing to donate blood in the future had better awareness of the procedure and criteria of CCP donation compared to the respondents who had no intention of donating blood. With the observed results, the intent of willing respondents to donate blood could be attributed to their adequate knowledge of CCP donation. While the reluctance of unwilling respondents to donate could be due to their limited awareness on the matter, this finding is consistent with a study conducted by Majdabadi *et al*. (2018) wherein low awareness contributed to a lack of interest and poor participation in blood donation practices. On a similar note, Li *et al*. (2020) also discussed that raising awareness would both motivate potential donors and enhance retention among current donors.

Table 2. Level of Knowledge on COVID-19 Convalescent Plasma Donation

Variables	Poor	Moderate	Good
Gender			
Male	14	39	22
Female	20	46	23
Age			
18-28 years old	19	52	25
29-38 years old	12	18	13
39-48 years old	2	9	2
49-58 years old	0	5	4
59-64 years old	1	1	1
Blood donation experience			
Yes	13	33	32

No	21	52	13
Willing to donate blood in the future			
Yes	32	78	44
No	2	7	1
n=164; Interpretation: <50% poor; 50-75% moderate; >75% good			

Table 3. Level of Willingness to Donate COVID-19 Convalescent Plasma

Variables	**Mean**
Gender	
Male	4.0800
Female	4.0112
Age	
18-28 years old	4.0833
29-38 years old	3.8837
39-48 years old	4.1538
49-58 years old	4.4444
59-64 years old	3.3333
Blood donation experience	
Yes	4.2179
No	3.8837
Willing to donate blood in the future	
Yes	4.1429
No	2.5000
n=164; Interpretation: 4.21-5.0 extremely willing; 3.41-4.20 moderately willing; 2.61-3.40 somewhat willing; 1.81-2.60 slightly willing; 1.00-1.80 not all willing	

Majority of the respondents had a moderate level of knowledge on CCP donation (Table 2) which indicates that they were relatively familiar with donor and recipient requirements, indications, contraindications, and procedures of CCP. Details like intervals between donation, eligibility of recipients, and volume of plasma collected where respondents got it wrong also shows the need for improvement in the dissemination of information where there is a need for blood products like CCP. A poor level of knowledge was also observed in respondents who do not have experience in blood donation and are not willing to donate blood. Having sufficient and correct knowledge was linked significantly with a good attitude and practice that will eventually help propel people to donate more blood or plasma (Alfouzan, 2014; Saeed, 2020). Moreover, most respondents were moderately willing to donate CCP, with those who have blood donation experience being extremely inclined (Table 3). It can be connoted the respondent's identity in donating as whole blood donors did not lessen their willingness in donating plasma due to its longer and more complex process as it is congruent with their principle of being an altruistic giver (Thorpe *et al.*, 2019). In contrast, there are also cases like in Bagot *et al.*'s study (2015) wherein the idea of converting to donating plasma was said to threaten their identity as whole blood donors which developed unwillingness to donate CCP. Furthermore, the factors that affect willingness are similar between the blood donation and the plasma donation; however, lower willingness has been associated with the latter (Piersma & Merz, 2019).

Table 4. Level of Knowledge on COVID-19 Convalescent Plasma Donation

Motivators	Mean	Interpretation
Signaling reluctant altruism	3.76	Agree
Altruism from adversity	3.98	Agree
Post-traumatic growth	3.75	Agree
Moral and civic duty to help research	3.81	Agree
Patriotism and control	3.46	Agree
Reluctant altruism	3.75	Agree
Overall mean	**3.75**	**Agree**
Interpretation: 4.21-5.0 strongly agree; 3.41-4.20 agree; 2.61-3.40 neutral; 1.81-2.60 disagree; 1.00-1.80 strongly disagree		

The study revealed that the strongest motivator of a person to donate CCP was altruism from adversity, which revolves around a person's gratitude and reciprocity (Table 4). This aligns with the study of Vollhardt and Staub (2011), which expressed that individuals who had suffered from adverse life events are more likely to help the people in need as compared to those who had not. The study also shares the same finding as with Masser *et al*. (2020), in which they expounded on how altruism from adversity is influenced by both gratitude and debt. These findings clearly suggest that the respondents are willing to donate because they are grateful for surviving a traumatic event; hence, pushing them to participate in the fight against COVID-19. Considering that altruism from adversity is the strongest motivator, focusing on recovered patients and emphasizing the gratitude that they felt as survivors will be a useful tool in encouraging them to donate CCP.

On the other hand, despite being deemed agreeable by the respondents, patriotism and control gained the lowest mean score among the six motivators. This finding is consistent with the study of Masser *et al*. (2020), where patriotism and control also obtained the lowest mean score among all the motivators provided. During this pandemic, the government and popular media framed the pandemic as a war; hence, the term patriotism has been commonly used (Benziman, 2020). However, despite this framing of COVID-19, the data shows that patriotism is not the strongest driving factor that pushes the respondents to donate CCP and may need further strengthening and revamping to encourage COVID-19 recovered patients to donate.

Next, moral and civic duty to help research gained second to the highest mean score. This motivator highlights the respondents' desire to help advance the research related to coronavirus treatment because it can potentially benefit their family and friends if they get ill and because it is the morally right thing to do. Guglielmetti Mugion *et al.* (2021) asserted that moral obligation strongly impacts the intention to become a blood donor. The data presented indicates that focusing on their desire to help the people close to them and injunctive norms would be a good tool in recruiting potential CCP donors.

Signaling reluctant altruism obtained the third highest mean score. This motivator encompasses having a positive image, sharing the respondent's experience with others, being uniquely able to help others, and the person's fulfillment. This is in congruent to Ferguson (2015) which detailed that even though donating is an altruistic act, it can be motivated by a more selfish reason. These findings are supported by the study of Masser *et al*. (2020) which revealed that signaling reluctant altruism is considered as a significant motivator of a COVID-19 recovered patient to donate blood. In view of these findings, it is important to consider strengthening this motivator alongside altruism from adversity to intensify the campaign of CCP donor recruitment. This suggestion is supported by

Chell and Mortimer (2014) which asserted that the donor recruitment campaigns have limited success because they rely on pure dimension of altruism and should also focus on impure altruism.

Post-traumatic growth obtained the second to the lowest mean score. Post-traumatic growth involves the respondent's belief that it is their duty as a COVID-19 survivor to donate because it makes them a stronger person. This statement aligns to the finding of Krause *et al*. (2020), which details that post-traumatic growth is a positive change that transpires after struggling with a challenging life crisis. In a study conducted by Collier (2016), the positive change felt by the respondent revolves around appreciation in life, a newfound sense of personal strength, and a desire to help others. Furthermore, this is consistent with the study of Masser *et al*. (2020), which expressed that the perceptions of the COVID-19 recovered patients in one's strength and finding the meaning to one's survival can potentially motivate them to donate. In the same study, post-traumatic growth was significantly below the scale midpoint alongside patriotism and control. These findings can indicate that post-traumatic growth is not a strong motivator compared to the others, although it can still generally be improved given that the respondents still consider it a motivator.

Lastly, reluctant altruism alongside post-traumatic growth also obtained the second to the lowest mean score. Reluctant altruism is when a person helps others because of the lack of trust that others would donate (Ferguson *et al.*, 2011). In the study of Masser *et al*. (2020), reluctant altruism did not differ significantly from the scale's midpoint. These findings indicate that even though this motivator influences blood or CCP donation, it is not strong enough yet and can be attributed to the motivator's novelty and need for further study. However, this can still be further strengthened given that reluctant altruism is an essential motivator for the first-time and novice donors because of the high levels of free-riding rate (Ferguson *et al.*, 2011). Hence, focusing on the negative emotions that COVID-19 recovered patients feel towards free-riding and lack of trust in other people may encourage these reluctant altruists to donate CCP.

Overall, these motivators contribute to a person's overall willingness to donate. Understanding how these motivators affect one's willingness and formulating a plan to incorporate all of these in campaigns would increase the number of CCP donors. Furthermore, knowing what weakness to improve and aspects to strengthen would undoubtedly boost the number of newly recruited donors.

Table 5. Barriers Affecting Willingness to Donate Convalescent Plasma

Barriers	Mean	Interpretation
Worry that others will know of COVID-19 infection	1.744	Strongly disagree
Infection and process risk to self and others	1.859	Disagree
Logistics	1.925	Disagree
Not well enough	1.861	Disagree
Generic donation fears	1.866	Disagree
Lack of trust in institutions	1.689	Strongly disagree
Fear of re-infection	1.817	Disagree
Overall mean	**1.823**	**Disagree**
Interpretation: 4.21-5.0 strongly agree; 3.41-4.20 agree; 2.61-3.40 neutral; 1.81-2.60 disagree; 1.00-1.80 strongly disagree		

Logistical barriers like inconvenience due to traveling to blood transfusion centers and difficulty in donating due to lockdown quarantine restrictions and limited transportation acquired the highest mean. This indicates that traveling affects the accessibility of blood collection centers that call for CCP donation and has the highest possibility of being the barrier that can greatly impact the decision to donate (Table 5). In the study of Ronse *et al*. (2018), proper assistance and incentives were allocated, including reimbursement for transport costs, which led blood donors to be more optimistic to donate. Making the burden of travelling lighter, either through incentives, reimbursement, or moving blood donation drives, can help benefit the supply of CCP donations.

Moreover, generic donation fears which includes fear of blood, fear of needles, possible adverse events acquired the second highest mean. It is possible that most of these people have experienced blood donation or extractions as these concerns are mostly observed in first time donors. As a result, preparation materials are and sufficient explanation on what to expect in the apheresis process is given before collection to ease their anxiety while giving a better donation experience (Masser *et al.*, 2020). Experience can help encourage donors to donate again in the future and invite others to give CCP.

Self- perception of being not well enough obtained the third highest mean. It consists of concerns like thinking there are others who are more fit to donate, requires more time to recover from the infection, have been through enough recently, stayed for a long time in hospital establishments already, and physically incapable to donate. This conclusion is validated with the research by Pereira *et al.* (2020), signifying that a donor's behavior is influenced by their own perception. Therefore, if an individual believes that to have control over a particular action, the more likely they are to initiate the behavior. For instance, the screening process in blood donation serves as an assurance for the donors that the whole process will be harmless; hence, the intent to donate blood is stronger due to the influence of self- perception in one's attitude.

The barriers having the fourth and fifth highest mean are concern about infection and process risk to self and others, and fear of reinfection. Despite all these uncertainties about infectiousness, the respondents disagree

with these risks as factors that prevent them from donating. Moreover, a similar situation can be noted in the Netherlands where there was an increase in donor willingness particularly in populations with increased risk to of contracting COVID-19. During the procedure, a donor cannot practice physical distancing. In addition, risk factors like old age and high regional COVID-19 transmission rates did not stop people in contributing to the blood supply (Spekman *et al*., 2021).

Lastly, the barriers that obtained the lowest mean scores are worry that others will know of their COVID-19 infection and lack of trust in institutions. In Ronse *et al.*'s study (2018), stigmatization of a community led to sharing experiences that formed trust and solidarity among the survivors. Due to this collective gathering, it influenced one another to help and donate, knowing that they also experienced having the infection and they are the only ones capable of participating in CCP donation.

Nevertheless, respondents still disagree that these conditions hinder their intention to donate which can be seen in Masser *et al*.'s study (2020) where motivators created a bigger impact as compared to barriers in pursuing their intention to help and contribute through CCP donation rather than stopping due to potential deterrents.

Pearson r test was used to identify the possible correlation not only between the awareness, knowledge, and willingness of COVID-19 recovered patients with one another, but also their motivators and barriers. It revealed a significantly high positive correlation between willingness and motivators. This implies that the presence of more motivators can result in a greater willingness to do-

nate CCP in the future. According to Zhang *et al*. (2021), motivators such as altruism and humanitarian concern are positively correlated with one's willingness, and donors with higher-level motivation would be more likely to donate (Table 6). Furthermore, Senaldi (2019) also stated how effective recruitment requires knowing and understanding donor motivations and applying them to possible donors. Boosting the factors that motivate a person to donate will augment their willingness and, in turn, will increase the number of possible CCP donors. With regards to the relationship of barriers with willingness and motivators, both outcomes revealed a significant moderate negative correlation, which may mean that despite the presence of potential barriers that may discourage an individual to donate, certain motivators and one's willingness still dominate a person's choice to partake in donating blood.

Table 6. Correlation Between Awareness, Knowledge, and Willingness and Motivators and Barriers

		Knowledge		**Willingness**		**Motivators**		**Barriers**	
	mean	**r**	**p-value**	**r**	**p-value**	**r**	**p-value**	**r**	**p-value**
Awareness	2.636	0.382	**0.000**	0.282	**0.000**	0.047	0.550	-0.038	0.629
Knowledge	2.070			0.241	**0.002**	0.127	0.105	-0.287	**0.000**
Willingness	4.043					0.738	**0.000**	-0.688	**0.000**
Motivators	3.702							-0.688	**0.000**

Conclusion

The research sought to assess the levels of awareness, knowledge, and willingness of selected Manila City residents regarding CCP donation. During a time of need, the assessment of these variables could be instrumental to the strengthening of local donation campaigns. Based on a quantitative and descriptive analysis of those three variables, it can be concluded that awareness, knowledge, and willingness are vital determinants of CCP donor behavior. The respondents of the study were slightly aware to somewhat aware of CCP donations in the Philippines. In terms of knowledge, the respondents showed moderate knowledge regarding the matter. Lastly, respondents were slightly to extremely willing to donate CCP, with the majority being moderately willing.

As a synthesis of the results of the study, a significant very low positive correlation was established among the variables awareness, knowledge, and willingness; hence, indicating their interconnected nature. This finding emphasizes the major role of community-based interventions in simultaneously increasing or enhancing the people's awareness, knowledge, and willingness of CCP donation. Moreover, it was discovered that other factors such as barriers and motivators, which are significantly correlated to willingness, should be eradicated and maximized, respectively, to effectively invoke the target population into donating CCP. Furthermore, demographic variables like age, blood donation experience, and willingness to donate must also be considered in planning out strategies for donor recruitment since the study discovered that older and more experienced respondents were more likely to donate.

Awareness, knowledge, and willingness are vital factors that affect a person's inclination towards participating in CCP donation. The following are ways in which these three factors could be strengthened. Since awareness is the first step in making CCP donation known among the public, it could be enhanced by making information readily accessible to people, especially to the younger generations. As Masser *et al.* (2020) puts it, awareness is the initial step for effective persuasion.

Therefore, assurance of the people's safety and security should also be established as early as this stage to eradicate any barriers that inhibit them from donating CCP. Subsequently, knowledge needs to be strengthened since convalescent plasma is a novel concept for most Filipinos. As a result, people may be hesitant to donate. There must be a comprehensive blood donation education (campaigns or programs) that focuses on different blood components. In this way, when the need arises again, people would be knowledgeable of the donation process. Moreover, the dissemination of accurate information is vital to eradicate fear and stigma surrounding CCP or even general blood donation, which in turn could enhance the participation of potential donors in CCP donation. Given the interconnected nature of awareness and knowledge with willingness, strengthening of both factors are vital to increasing willingness among prospective donors. Lastly, to enhance willingness, recruitment strategies must maximize the different motivators to encourage participation among prospective donors. In most studies, the correlation between motivators and willingness is expected. It is the reason why motivators are greatly studied as it contributes on how to angle the message and invoke the target population into donating. Most blood donation recruitment programs are founded on the understanding of the target population as they are essential in trying to match their message based on what motivates people to donate. On the other hand, identifying barriers is essential in pinpointing and mitigating possible issues that lower a person's inclination to donate by dispelling myths or adjusting operation procedures. Furthermore, the disagreement on the barriers is found to be consistent with its significant correlation with willingness. This means that these barriers do not affect in the voluntary decision making of a potential donor and that barriers are often negligible in the presence of various motivators that leads to increased willingness when in the decision to voluntarily donate blood.

To the best of our knowledge, this study is the first in the Philippines to evaluate the awareness, knowledge, and willingness of Filipinos with regards to COVID-19 convalescent plasma donation. With this in mind, this study could be further improved upon with the following recommendations. A larger sample size would be ideal to have a higher confidence level and a smaller margin of error to yield more accurate results. Inclusion of more populations could help in evaluating the impact of cultures and beliefs on blood donation. Other possible barriers should be studied to better understand donor behavior and to improve current blood donation programs. Moreover, it is advised that the performance of in-person data collection be conducted to allow interactions with a larger number of respondents. Lastly, respondents should be categorized based on demographics to identify which aspects could be strengthened or maximized in recruitment strategies.

Overall, the novelty surrounding CCP donation in the Philippines presents a new challenge to blood donation facilities and other concerned organizations. With the assessment of the awareness, knowledge, and willingness of potential donors, the findings of this study could serve as a reference to the development of timely strategies for donation campaigns.

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