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U.S. public support for COVID-19 vaccine donation to low- and middle-income countries during the COVID-19 pandemic

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ABSTRACT

As COVID-19 vaccines become available to the public, there will be a massive worldwide distribution effort. Vaccine distribution has historically been unequal primarily due to the inability of nations with developing economies to purchase enough vaccine to fully vaccinate their populations. Inequitable access to COVID-19 vaccines will not just cause humanitarian suffering, it will likely also be associated with increased economic suffering worldwide. This study focuses on the U.S. population and its beliefs about future COVID-19 vaccine donation by the U.S. to low- and middle-income countries.

This study carried out a survey among 788 U.S. adults. Variables include demographics, COVID-19 vaccine priority status, COVID-19 vaccine donation beliefs, and Social Dominance Orientation.

Analyses showed that older respondents were both less likely to endorse higher levels of COVID-19 vaccine donations and were more likely to want to wait until all in the U.S. who want the vaccine have received it; those who identified as Democrats were more likely to endorse higher levels of future COVID-19 vaccine donation than Republicans; and those scoring higher on SDO were both less likely to endorse higher levels of COVID-19 vaccine donations as well as more likely to want to wait until all in the U.S. who want the vaccine have received it. Policymakers, as well as healthcare providers and public health communication professionals, should give consideration to those messages most likely to engender support for global prevention efforts with each audience segment.

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1. Background

As COVID-19 vaccines become available to the public, there will be a massive worldwide distribution effort. Vaccine distribution has historically been unequal primarily due to the inability of nations with developing economies to purchase enough vaccine to fully vaccinate their populations [22]. As was the case with previous outbreaks and vaccines, the high cost of vaccine development also restricts many countries from developing their own COVID-19 vaccine [19]. This means that low- and middle-income countries will likely have to rely on more powerful economies for access to COVID-19 vaccines. However, considering the global nature of this pandemic, the COVID-19 vaccine is a global public good, making universal equitable access to such a vaccine a critical priority [16]. In addition, inequitable access to COVID-19 vaccines will not just cause humanitarian suffering, it will likely also be associated with increased economic suffering worldwide [12].

Vaccine development is traditionally a painstakingly lengthy process, and it typically takes multiple candidate vaccines over many years to produce a safe and effective vaccine [18]. However, in the case of COVID-19, vaccine researchers and funders have been working extraordinarily fast, resulting in multiple prospective vaccines now in final-stage clinical trials. As of November 16, 2020, six vaccines were approved for early or limited use, and 12 vaccines were in Phase III large-scale efficacy tests. In addition, 17 were in Phase II expanded safety trials, 38 in Phase I testing safety and dosage, and more than 87 are under development but not yet in human trials [6]. In mid-November of 2020, COVID-19 vaccines developed by both Pfizer and Moderna were reported to

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be strongly effective according to early data [13,14], and Pfizer's vaccine was approved for use in the second week of December 2020 in the United Kingdom, Bahrain, Canada, and the United States of America [26].

During the 2009 H1N1 swine flu outbreak, the World Health Organization developed a plan for coordination of both donations and funding so the new H1N1 vaccine would more easily reach low-and middle-income nations [27]. The Bill & Melinda Gates Foundation developed a set of principles to guide global pandemic vaccine allocation, which included pandemic vaccines being made available to nations with developing economies at the same time as developed economies [29]. The U.S. announced in September 2009 it would donate 10% of its purchased H1N1 vaccines to nations with developing economies through the WHO [17], but, ultimately, the donations were delayed until at-risk U.S. individuals were able to get the vaccine [15].

A survey among 2079 U.S. individuals by Kumar et al. [15] found considerable support for donation of at least 10% of the U. S. vaccine supply during the H1N1 pandemic. However, many perceived the H1N1 pandemic to be a relatively mild disease, which may have played a role in the subsequent support of vaccine donation [15]. While the ultimate morbidity and mortality of COVID-19 will not be known for some time, it is clearly a more severe disease than H1N1 [7,9], which may affect countries' as well as their citizens' willingness to donate a future vaccine. In addition, Kumar et al. [15] found that party affiliation, U.S. nativity, and income were all significantly related to views of the amount of H1N1 vaccine to be donated with Democrats more likely to support donation than Republicans, immigrants more likely to support vaccine donation than those who were native born, and those who had a lower income more likely to support higher levels of donation than those with higher incomes.

Outside of demographic predictors of support for vaccine donations, attitudinal variables may play a role. Social Dominance Orientation (SDO) is a belief system favoring social hierarchies and, particularly, that one's own group should dominate and be superior to other groups [21]. SDO has been shown to predict reduced generosity in allocating resources to outgroups, as well as predict feelings of greater social distance from outgroups [1,8,11]. As a result, it is conceptualized in this study to be a primary attitudinal barrier, beyond key demographic characteristics, of supporting donations of COVID-19 vaccines.

This study focuses on the U.S. population and its beliefs about future COVID-19 vaccine donation by the U.S. to low- and middle-income countries. The **Specific Aims** of this study are to assess: (a) what the U.S. public believes about COVID-19 vaccine donation to these countries, and (b) demographic and attitudinal predictors of support for those vaccine donations.

Understanding the drivers of these perceptions is critical to informing messaging campaigns to foster public understanding of COVID-19 as a global pandemic that necessitates global interventions. It is important to note that this study took place in a single moment of the COVID-19 pandemic, when vaccines were not yet publicly available and many questions about access remained Bloom et al. [2]. Nonetheless, as Southwell et al. [25] have argued, it is vital to understand public opinion during the periods when a particular disease first becomes salient at a population level because how people respond to a novel virus and pandemic may depend, at least in part, on experiences they have had with other related diseases, or in other words existing mental models of disease and vaccination. While perceptions are likely to continue to evolve as access and experiences grow, mental models of COVID-19 vaccination may also persist over time. Therefore, asking these research questions specific to the early stages of the COVID-19 pandemic is essential. Subsequently, both prior related literature (e.g., H1N1 epidemic) and theory guided the selection of the specific variables chosen for examination in this study as predictors of public support for COVID-19 vaccine donations (e.g., age, gender, race/ethnicity, education, U.S. nativity, political party identification, health insurance status, COVID-19 vaccine priority status, and SDO).

2. Method

2.1. Sample

Leading survey research firm Qualtrics was hired to recruit participants and administer the online survey. A national quota sample of 788 participants completed the study in July 2020. Quotas were implemented to obtain an equal proportion of each gender (50%) and race/ethnicity (White, Black, Hispanic). Qualtrics recruited participants from their existing database, using a double opt-in process. The study was approved by the Institutional Review Board at a large research university in the Mid-Atlantic U.S.

2.2. Instrumentation

2.2.1. Demographics

Demographic variables collected included age, gender, race/ethnicity, education, U.S. nativity (whether someone was born in the U.S.), and political party identification. Health insurance status was measured by one question, asking whether the respondent had health insurance [15]. The answer to this question was in a dichotomous (yes/no) format.

2.2.2. COVID-19 vaccine priority status

Potential objective priority group was measured by three questions: "Have you been told by a healthcare professional that you have any of the following conditions," followed by a list of likely chronic conditions that, according to the CDC, will determine those in high-risk groups who may be one of the first priorities to get the COVID-19 vaccine [3,15], age in years, and whether a respondent was a current healthcare worker (since both those aged 65 and over as well as healthcare workers are part of the likely priority groups, again according to the CDC) [3].

2.2.3. COVID-19 vaccine donation

Attitudes toward possible COVID-19 vaccine donation were measured using two questions after this introduction: "The U.S. government is donating 10% of the 195 million doses of vaccine it has purchased to the World Health Organization to distribute in poor countries that do not have the resources to buy their own vaccine." We first asked how the respondent rated their ***willingness to donate the specific amount*** of the vaccine (no donation, less than 10%, exactly 10%, and more than 10%), and then asked (except those who answered "no donation") about the ***timing of the potential donation*** (donate after everyone in the U.S. who wants it has gotten the vaccine, donate after those in the U.S. at highest risk have gotten the vaccine, and donate the vaccine now) [15]. The answers to these questions ranged between "strongly disagree" to "strongly agree," measured on a seven-point Likert scale.

2.2.4. Social Dominance Orientation

Social Dominance Orientation was measured using 16 items (e.g., "Some groups of people are simply inferior to other groups" and "Inferior groups should stay in their place") with responses ranging from "strongly disagree" to "strongly agree" on a seven-item Likert scale [21]. Cronbach's alpha for items on the scale was 0.92.

2.3. Statistical analyses

Analyses were performed using SPSS 26.0. Descriptive analyses were performed to report the means and standard deviations of continuous variables and the frequency and proportion of categorical variables. Multiple regression analysis was used to determine the degree to which demographic characteristics, political party affiliation, COVID-19 vaccine priority status, and SDO score predicted willingness to endorse COVID-19 vaccine donations by the U.S. to other, less economically prosperous nations. The effects of the independent variables were expressed in terms of standardized regression coefficients (betas). The amount of variance explained in the model was reported in terms of R^2. Finally, multinomial logistic regressions were run to examine effects of demographic characteristics, political party affiliation, COVID-19 vaccine priority status, and SDO score on preference for the timing of COVID-19 vaccine donations by the U.S.

3. Results

Respondents had an average age of 45.9 (sd = 17.1) years, 34.0% were non-Hispanic White, 33.4% were non-Hispanic Black, and 32.6% were Hispanic (see Table 1). Most had health insurance (87.7%) and educational attainment of less than a bachelor's degree (60.8%). Respondents were 48.1% Democrat, 21.7% Republican, and 30.2% Independent.

Table 1
Demographics of the overall sample.

Characteristics	% (n)
Education	
Less than bachelor's degree	60.8% (n = 479)
Bachelor's degree or higher	39.2% (n = 309)
Gender	
Male	50.0% (n = 394)
Female	50.0% (n = 394)
Age, years	
Mean, SD	45.9, 17.1
Race/ethnicity	
White	34.0% (n = 268)
Black	33.4% (n = 263)
Hispanic	32.6% (n = 257)
Health insurance	
Yes	87.7% (n = 691)
No	12.3% (n = 97)
U.S. nativity	
Yes	90.4% (n = 712)
No	9.6% (n = 76)
Political party	
Democrat	48.1% (n = 379)
Republican	21.7% (n = 171)
Independent	30.2% (n = 238)
Vaccine Priority Status	
Healthcare workers	
Yes	6.2% (n = 49)
No	93.8% (n = 739)
Chronic Disease	
Yes	44.2% (n = 348)
No	55.8% (n = 440)
Age (65 or older)	
Yes	19.0% (n = 150)
No	81.0% (n = 638)
Overall	
Yes	54.3% (n = 428)
No	45.7% (n = 360)

3.1. Views on the amount of COVID-19 vaccine donated

As shown in Table 2, 40.9% of respondents felt that a donation of 10% of purchased vaccine by the U.S. to less prosperous countries was "just right;" 39.6% felt the U.S. should donate more than 10% of its vaccine, in contrast to 11.2% who felt that the country should not donate vaccine at all, and 8.4% who felt that a donation of less than 10% would be appropriate.

To investigate predictors of COVID-19 endorsement of vaccine donation by the U.S. to other nations, a multiple linear regression was carried out (Table 3). The model significantly predicted level of future COVID-19 donation preference, $F(11, 776) = 6.897$, $p < .001$, $R^2 = 0.089$.

Older respondents endorsed lower levels of COVID-19 vaccine donations from the U.S. to other nations compared to those who were younger. Those who reported a Democratic Party affiliation endorsed higher levels of COVID-19 vaccine donations compared to those identifying as Republicans. Finally, higher social dominance orientation beliefs were associated with lower levels of COVID-19 vaccine donations (Table 3).

3.2. Views on the timing of COVID-19 vaccine donations

All respondents other than those who felt that the U.S. should not donate any vaccine were asked if the vaccine should be donated after those in the U.S. had received it or at a time such that those at risk in other countries could get it concurrently with those at risk in the U.S. Of those, 41.1% felt that vaccine should be donated "now so that people at risk in poor countries can get the vaccine at the same time as those at risk here" compared to 27.9% who felt that "donations should be made after those at risk here got the vaccine" and 31.0% who felt that "donations should happen only after those who want the vaccine in the U.S. had received it" (Table 4).

Multinomial logistic regressions were run to determine whether there were effects of demographics and social dominance orientation on preference for the timing of COVID-19 vaccine donation by the U.S. to other less prosperous nations. The odds ratios and 95% CIs for donating "as soon as possible" vs. "donating once everyone who wants the vaccine in the U.S. has received it," "donating as soon as possible" vs. "donating once everyone at high risk in the U.S. has received it," and "donating once everyone at high risk in the U.S. has received it" vs. "donating once everyone who wants the vaccine in the U.S. has received it" are presented for each participant characteristic in Table 5. Two of the demographic characteristics—insurance status and age—as well as SDO were significant predictors of preference for timing of vaccine donation (all *p*-values < 0.05).

Older respondents were more likely to favor waiting to donate until all who want the COVID-19 vaccine in the U.S. have received it versus as soon as possible (OR: 1.02, 95% CI 1.01,1.03); respondents without insurance were more likely to favor waiting to donate until all who want the COVID-19 vaccine in the U.S. have received it versus as soon as possible (OR: 2.09, 95% CI 1.14, 3.87) as well as more likely to favor waiting to donate until all who are at high risk for COVID-19 in the U.S. have received the vaccine versus as soon as possible (OR: 2.10, 95% CI 1.16,3.79). Respondents endorsing higher SDO were more likely to favor waiting to donate until all who want the COVID-19 vaccine in the U.S. have received it versus as soon as possible (OR: 1.21, 95% CI 1.01, 1.46).

4. Discussion

Within this sample, we found that 80.5% of all respondents were in favor of endorsing the U.S. donating 10% or more of the

Table 2
Characteristics of respondents to question regarding the scale of vaccine donation.

	Should not donate	Should donate < 10%	Should donate 10%	Should donate greater than 10%
Total (N = 788)	11.2% (n = 88)	8.4% (n = 66)	40.9% (n = 322)	39.6% (n = 312)
Education				
<Bachelor's	69.3% (n = 61)	54.5% (n = 36)	61.2% (n = 197)	59.3% (n = 185)
Bachelor's or higher	30.7% (n = 27)	45.5% (n = 30)	38.8% (n = 125)	40.7% (n = 127)
Gender				
Male	55.7% (n = 49)	54.5% (n = 36)	50.3% (n = 162)	47.1% (n = 147)
Female	44.3% (n = 39)	45.5% (n = 30)	49.7% (n = 160)	52.9% (n = 165)
Race/ethnicity				
White	48.9% (n = 43)	36.4% (n = 24)	36.3% (n = 117)	26.9% (n = 84)
Black	26.1% (n = 23)	36.4% (n = 24)	32.3% (n = 104)	35.9% (n = 112)
Hispanic	25.0% (n = 22)	27.3% (n = 18)	31.4% (n = 101)	37.2% (n = 116)
Health insurance				
Yes	85.2% (n = 75)	86.4% (n = 57)	88.5% (n = 285)	87.8% (n = 274)
No	14.8% (n = 13)	13.6% (n = 9)	11.5% (n = 37)	12.2% (n = 38)
U.S. nativity				
Yes	93.2% (n = 82)	89.4% (n = 59)	91.3% (n = 294)	88.8% (n = 277)
No	6.8% (n = 6)	10.6% (n = 7)	8.7% (n = 28)	11.2% (n = 35)
Political party				
Democrat	35.2% (n = 31)	22.7% (n = 15)53.5	46.9% (n = 151)	53.5% (n = 167)
Republican	28.4% (n = 25)	54.5% (n = 36)	23.9% (n = 77)	15.4% (n = 48)
Independent	36.4% (n = 32)	22.7% (n = 15)	29.2% (n = 94)	31.1% (n = 97)
Chronic disease				
Yes	45.4% (n = 40)	43.9% (n = 29)	48.4% (n = 156)	39.4% (n = 123)
No	54.5% (n = 48)	56.1% (n = 37)	51.6% (n = 166)	60.6% (n = 189)
Healthcare worker				
Yes	5.7% (n = 5)	7.6% (n = 5)	5.0% (n = 16)	7.4% (n = 23)
No	94.3% (n = 83)	92.4% (n = 61)	95.0% (n = 306)	92.6% (n = 289)

Table 3
Linear multiple regression predicting future COVID-19 vaccine donation willingness.

Variable	Beta	p-value
Education: Bachelor's degree	0.051	0.143
Age	−0.127	0.002*
Gender: women	−0.029	0.458
Race: Black (Ref: White)	0.021	0.644
Race: Hispanic (Ref: White)	0.056	0.208
Insurance	0.033	0.352
U.S. nativity	−0.021	0.563
Political: Democrat (Ref: Republican)	0.105	0.035*
Political: Independent (Ref: Republican)	0.047	0.313
Vaccine priority group: Chronic disease	−0.031	0.408
Vaccine priority group: Healthcare worker	−0.002	0.955
Social Dominance Orientation (SDO)	−0.224	<0.001*

future COVID-19 vaccine to less economically prosperous countries. However, this study used a panel sample with quotas for race/ethnicity, and while that allowed us to compare specific subgroups, it also means the sample may well be distorted by the underlying demographics of the sample, which may skew toward a greater willingness to donate COVID-19 vaccine doses. While we present the aggregate descriptives, therefore, we do so with appropriate caution: these percentages are not representative of the population. A study in 2012 focusing on the H1N1 vaccine found that 77.5% of participants were willing to donate 10% or more. The authors of that study, Kumar et al. [15], wondered whether the high percentage was in part due to the perception that H1N1 was relatively mild in nature and if such a percentage would be lower in the context of a more serious outbreak. However, COVID-19, as it turns out is more serious than H1N1, both in morbidity and mortality, and yet the favorability for donation is only slightly higher than in the previous H1N1 study. These results suggest the possibility of more public support for COVID-19 vaccine donation by the U.S. to low- and middle-income countries than policymakers may expect. This may be driven by the severity of the COVID-19 pandemic both within and across countries, as well as greater awareness of transnational spread through the early implementation of global travel restrictions [23]. Despite the differential impact of race/ethnicity and socioeconomic status in many research studies, the commonly touted aphorism that "we are all in this together" may actually characterize a potential substantial portion of the American public's approach to vaccine donation. Again, however, there is reason to believe our sample may have a greater tendency toward donation than the U.S. population, and the actual level of willingness to donate is likely to be lower. Even with this sample, though, survey respondents still indicated some preference for the U.S. with regard to the timing of vaccine donations, with 58.9% of respondents suggesting that donations not occur until at least some threshold of domestic vaccination has taken place.

4.1. Willingness to donate and time of donation

Multiple linear regressions and multinomial logistic regressions showed that older respondents were both less likely to endorse higher levels of COVID-19 vaccine donations and were more likely to want to wait until all in the U.S. who want the vaccine have received it. This may be because older adults are a higher-risk group themselves and, as a result, might be more concerned about their own health or that of their peers. In addition, respondents without insurance were more likely to want to wait until all in U.S. who want the vaccine have received it, as well as more likely to want to wait until those at high risk in U.S. have received it. This may signal concerns about vaccine access among economically vulnerable adults and speaks to the importance of developing and communicating a strong plan for equitable vaccine access *within* the U.S. Being uninsured remains disproportionally common among those with incomes under 133% of the Federal Poverty Level [5].

Those who identified as Democrats were more likely to endorse higher levels of future COVID-19 vaccine donation than Republi-

Table 4
Characteristics of respondents to question regarding the timing of vaccine donation.

	Donate after those who want get it	Donate after at-risk get it	Donate now so that at-risk everywhere have access
Total	31.0% (n = 217)	27.9% (n = 195)	41.1% (n = 288)
Education			
<Bachelor's	60.8% (n = 132)	57.4% (n = 112)	60.4% (n = 174)
Bachelor's or higher	39.2% (n = 85)	42.6% (n = 83)	39.6% (n = 116)
Gender			
Male	52.5% (n = 114)	54.5% (n = 36)	43.1% (n = 124)
Female	47.5% (n = 103)	45.5% (n = 30)	56.9% (n = 164)
Race/ethnicity			
White	38.7% (n = 84)	34.4% (n = 67)	25.7% (n = 74)
Black	31.8% (n = 69)	29.7% (n = 58)	39.2% (n = 113)
Hispanic	29.5% (n = 64)	35.9% (n = 70)	35.1% (n = 101)
Health insurance			
Yes	86.6% (n = 188)	84.6% (n = 165)	91.3% (n = 263)
No	13.4% (n = 29)	15.4% (n = 30)	8.7% (n = 25)
U.S. nativity			
Yes	91.7% (n = 199)	91.3% (n = 178)	87.8% (n = 253)
No	8.3% (n = 18)	8.7% (n = 17)	12.2% (n = 35)
Political party			
Democrat	46.1% (n = 100)	48.7% (n = 95)	55.2% (n = 159)
Republican	23.5% (n = 51)	21.5% (n = 42)	16.3% (n = 47)
Independent	30.4% (n = 66)	29.7% (n = 58)	28.5% (n = 82)
Chronic disease			
Yes	47.0% (n = 102)	44.1% (n = 86)	41.7% (n = 120)
No	53.0% (n = 115)	55.9% (n = 109)	58.3% (n = 168)
Healthcare worker			
Yes	6.5% (n = 14)	6.2% (n = 12)	6.3% (n = 18)
No	93.5% (n = 203)	93.8% (n = 183)	93.2% (n = 270)

Table 5
Multinomial Logistic Regression: Predictors of vaccine donation timing.

	p-value Donate after all who want vs. Donate ASAP	Donate after all who want vs. Donate ASAP, OR (95% CI)	p-value Donate after all who at high risk vs. Donate ASAP	Donate after all who at high risk vs. Donate, ASAP OR (95% CI)
Age	0.001*	1.021 (1.008,1.034)	0.586	0.996 (0.984,1.009)
Vaccine priority: Chronic disease	0.850	0.963 (0.648,1.431)	0.386	0.836 (0.557,1.254)
Vaccine priority: Healthcare worker	0.368	0.706 (0.332, 1.505)	0.717	0.866 (0.398,1.884)
Gender	0.540	1.135 (0.757,1.702)	0.085	1.434 (0.951,2.163)
Education	0.731	1.069 (0.731,1.562)	0.679	0.922 (0.627,1.356)
Race: Black	0.303	1.309 (0.784,2.185)	0.170	1.447 (0.854,2.452)
Race: Hispanic	0.518	1.179 (0.716,1.940)	0.682	1.110 (0.672,1.835)
Insurance	0.016*	2.093 (1.148,3.871)	0.015*	2.095 (1.158,3.790)
U.S. nativity	0.209	0.666 (0.353,1.256)	0.213	0.667 (0.353, 1.262)
Party: Democrat	0.407	1.250 (0.738,2.117)	0.611	1.150 (0.671,1.972)
Party: Independent	0.767	1.085 (0.633,1.861)	0.608	1.158 (0.661,2.026)
Social Dominance Orientation	0.041*	1.214 (1.008,1.463)	0.538	1.061 (0.879,1.281)

cans. This is consistent with general Democratic platforms supporting healthcare for all (e.g., option for socialized medicine) and immigration from other nations (e.g., more lenient policies). Strategies aimed at increasing support for donations will need to consider prior research indicating that Republicans and Democrats respond differently to messaging that suggests a government or social responsibility for improving population health in order to avoid diminishing support among Republicans [10]. Further, those scoring higher on SDO were both less likely to endorse higher levels of COVID-19 vaccine donations as well as more likely to want to wait until all in the U.S. who want the vaccine have received it. SDO was by far the largest predictor, suggesting that there may be ingrained and socialized belief systems at play regarding whether certain groups, particularly one's own, are better than others [20]and therefore more deserving of scarce medical resources. SDO and party affiliation findings suggest that further communication on the global nature of COVID-19 and the ways in which vaccine donation would ultimately benefit one's own social group may hold promise. However, research also suggests that barriers to outgroup donations could potentially be overcome through a focus on moral values [8,28]. Each of these divergent messaging strategies necessitates further exploration in the context of vaccine donation.

4.2. Strengths and limitations

Strengths of this study include a large and racially/ethnically diverse sample, as well as statistical modeling to identify the most salient predictors of willingness to endorse both levels and timing of future COVID-19 vaccines by the U.S. to low- and middle-income countries. The findings of this research are needed to help guide both policy makers and public health authorities in their efforts

to equitably distribute COVID-19 vaccine doses. Limitations include the reliance on a panel sample, which limits our ability to interpret results as being nationally representative. In addition, the quotas we intentionally include in order to be able to compare specific subgroups may be more likely to skew toward donation. While we use education as an (accepted) proxy for income, we recognize the value of this demographic variable, and the reality that the poor and uninsured are often left out of the field of health communication [4,24]. We do therefore recommend that future studies include income. Findings should also be considered in relation to the date of data collection. In July 2020, it is possible that the American public underestimated the extent to which COVID-19 would be impacting the country by the end of the year. Future studies should replicate this study to assess if the results hold now as the pandemic endures and a vaccine is reaching the market.

5. Conclusions

COVID-19 is a global pandemic and worldwide equitable access to COVID-19 vaccines is a critical priority [16]. This study offers important insights into the demographic and psychographic characteristics that public health communicators will need to consider when advocating for public support of U.S. vaccine donations to countries with developing economies. Moreover, the data suggest important ways in which the U.S. public should be segmented and targeted with differently framed messages for maximum effectiveness. Specifically, those with high SDO beliefs will likely be more effectively persuaded by messages tapping into American exceptionalism and the need to provide aid to those less advanced, whereas those affiliated with the Democratic party may be more persuaded by collectivist messages emphasizing that we are all in this together. Effective global vaccine distribution and uptake hinges on effective public health communication. Policymakers, as well as healthcare providers and public health communication professionals, should give consideration to those messages most likely to engender support for global prevention efforts with each audience segment.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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