

RESEARCH

Predictors of Anti-Asian Xenophobia During Covid-19: Towards Developing Targeted Intervention Campaigns

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Anti-Asian xenophobia (AAX) spiked during Covid-19, exacerbating health disparities among affected groups. This study uses data from a national survey to identify predictors of AAX to enable targeting of audience segments and effective messaging to counteract Anti-Asian attitudes and behaviors. Using Intergroup Threat Theory (ITT) to pinpoint possible predictors, we find that situation specific variables such as favorability toward Trump and information seeking and avoidance behaviors consistently predict higher levels of AAX. Individual differences like being female, well-educated, and having a high tolerance for ambiguity are negatively related to AAX.

As cases of Covid-19 spread in the United States early in 2020, so too did Anti-Asian xenophobia (AAX). Chinatowns across the country saw a sharp drop in visitors. Small Asian-owned restaurants saw business drop 60 - 80 percent even prior to mandatory lockdowns (Chin, Kosciulek, & Abadi, 2020). Stories in the news and on social media of verbal harassment and physical attacks on Asians were common. In response to the acceleration of xenophobia the web site, Stop AAPI (Asian American Pacific Islander) Hate, was created so people can report instances of AAX.¹ In its first week, and without much in the way of publicity, more than 650 reports were submitted. By the beginning of August more than 2,500 reports were filed.² The FBI also issued a warning about a surge of Anti-Asian hate crimes (Margolin, 2020).

Existing health disparities are exacerbated by AAX, as fear of race-based mistreatment is added to the challenges for undocumented, non-English speaking, elderly, or low-income Asian Americans (Le, et al., 2020). Concerns about increases in depression and anxiety for those in the Asian community are also heightened by the pandemic and AAX (Edara, 2020; Lee & Waters, 2020; Misra, Le, Goldmann & Yang, 2020). Asian American health care workers face fear and harassment as they try to care for patients; there are reports of verbal attacks, refusal to allow treatment by Asian doctors and nurses, and medical personnel intentionally being coughed on and spat upon (Jan, 2020). Facing increased stigma and discrimination, some Asian Americans report changing their behavior to avoid possible confrontations (Kambhampaty, 2020). Asian American parents have created social media groups to share information about xenophobic incidents in their children's schools (Sastry & Ban, 2020). These attitudes and behaviors and their effects are not due to prejudice or discrimination toward people as individuals, but toward people as representatives of a group (Esses & Hamilton, 2021; Tajfel & Turner, 1979). Designing interventions to counteract the negative effects of AAX must take the salience of intergroup relationships into account.

There have been some efforts to respond to increased AAX. In September 2020 the U.S. House of Representatives passed a resolution calling on public officials to denounce anti-Asian sentiment, to avoid spreading misinformation that puts Asians at increased risk, and for federal law enforcement agencies to do more to track and respond to cases of threats and hate crimes against Asian Americans (Yam, 2020).³ Resolutions do not come with enforcement powers and are used to express legislators' opinions when they are unable to pass legislation – in this case, because of First Amendment guarantees of free expression. While the portions dealing with law enforcement tracking and training could become law, the other elements of the resolution would violate free speech rights as they are focused on the

¹ The groups responsible for creating the Stop AAPI Hate web site include the Asian Pacific Planning and Policy Council (A3PCON), Chinese for Affirmative Action (CAA), and the Asian Studies department at San Francisco State University.

² This is likely a gross underestimation, as people may not know of this site, or may choose not to report even if they do.

³ The COVID-19 Hate Crimes Act has been passed by both houses of Congress and is expected to be signed into law soon. This law would require appointment of a point person at the Federal level to ensure rapid handling of anti-Asian hate crimes, standardize reporting of these crimes, and provide support for state and local governments to address hate crimes (Sprunt, 2021).

actual content of a message. Banning anti-Asian hate speech itself would also be unconstitutional; the United States is unique in its approach to hate speech. While other Western democracies have laws limiting hate speech, the U.S. Supreme Court has ruled that most hate speech is protected by the First Amendment's expressive guarantees (*Snyder v. Phelps*, 2011). Instead of banning hate speech, people are encouraged to engage in more speech to counteract and oppose the hateful messages.

Celebrities of Asian heritage, in particular, have been vocal in decrying the surge of anti-Asian hate speech and hate crimes. In March 2021, Actress Sandra Oh gave an impassioned speech at a Stop Asian Hate rally in Pittsburgh about her pride and fear as an Asian woman (BBC News, 2021). Many other actors, musicians, and athletes have also shared their experiences publicly (Mulenga, 2021). As Asian elders have been regularly targeted by physical attacks, programs providing volunteers to accompany older people while they are in public have sprouted across the country (Smith, 2021).

Communication campaigns are a broader "more speech" strategy to change public attitudes, knowledge, and behaviors. One public service announcement (PSA) campaign for television and online with the tagline "Fight the Virus. Fight the Bias." was created by the non-profit Advertising Council with the help of Emmy-award winning writer Alan Yang (Hsu, 2020). Other groups have created their own videos or started hashtag campaigns like #Washthehate, #IAMNotCovid19 and #RacismIsAVirus (Hsu, 2020). This approach has potential to change hearts and minds while not violating the First Amendment. However, to maximize the potential of communication campaigns of this sort, it is necessary to identify and prioritize specific target audiences and to engage in formative research to understand the types of messages, channels, message sources, and timing of messages that target audiences may respond to (Atkin & Freimuth, 2012; Silk, Atkin, & Salmon, 2011; Walsh et al. 2010). And once implemented, it is essential to engage in summative evaluation to understand if campaigns are effective (Silk, Atkin, & Salmon, 2011).

With the recognition that the targets of anti-Asian hate speech and hate crimes are victimized because of their perceived out-group membership, Intergroup Threat Theory (ITT) can help identify predictors of AAX to better understand potential audience segments for future messaging and interventions (Stephan, Ybarra & Morrison, 2012).

Intergroup Threat Theory: Variables Predicting Anti-Asian Xenophobia

At its most basic, ITT proposes that people experience threat "when members of one group perceive that another group is in a position to cause them harm," and the perception of threat elicits negative attitudes and behaviors toward the group in question. (Stephan, Ybarra & Morrison 2012, p. 42). This perspective focuses on *perceptions* of threat rather than actual threat levels because studies have demonstrated that perceptions are a better predictor of problematic attitudes and behaviors than are actual threat levels (Semyonov et al., 2004; Stephan, Ybarra & Morrison, 2012). For example, Semyonov et al. (2004, p. 696) found that perceived size of a threatening outgroup is a better predictor of exclusionary attitudes toward that group than is the actual size of the group.

ITT focuses on two different types of threat: realistic and symbolic. Realistic threats arise when an outgroup is perceived to endanger the ingroup's power, resources, or to have the ability to cause physical harm. Symbolic threats are more concerned about compromising the ingroup's worldview; religion, values, ideology, and morality are all encompassed here. Outgroups perceived to carry disease pose a realistic threat (Faulkner et al., 2004; Navarrete & Fessler, 2006). Research has broadly shown that both forms of threat, realistic and symbolic, predict prejudice (Chang, Krosch & Cikara, 2016; Makashvili, Vardanashvili, & Javakhishvili, 2018).

Prior work on ITT has shown that the consumption of TV generally – even prior to the development of COVID-19 – is linked to anger and anxiety towards Asians for viewers who are not Asian (Seate, Hsin-Yi, & Mastro, 2018). Exposure to news content about Asians during COVID-19 may have encouraged even more negative emotions towards this group. Indeed, recent work on COVID-19 has shown that relying on more traditional news, and trusting social media more, were linked with greater prejudice towards Asians (Tsai, Phua, Pan, & Yang, 2020). Influential figures, particularly former President Trump, explicitly blamed China for the virus, and used biased language when describing the novel disease. A recent study found that in the week following Trump's first use of the phrase "Chinese Virus" on Twitter, over half of the tweets using #chinesevirus also contained other anti-Asian tags, whereas only one fifth of the tweets using #covid19 included hashtags biased against Asians (Hswen, et al., 2021). The perception that anyone Chinese is likely to carry the highly transmissible virus became widespread. This threat perception extended to anyone who looks Asian because of an inability to differentiate between people from different countries (Chen, Trin & Yang, 2020; Ha, et al., 2020).⁴

ITT researchers have identified four groups of variables that shape realistic and symbolic threat perceptions and the resulting consequences of those perceptions (in this case, AAX): intergroup relations, cultural dimensions, situational factors, and individual differences (Stephan, Ybarra & Morrison, 2012).

⁴ Asians are also experiencing a realistic-type intergroup threat during the pandemic, of course. However, the focus here is on understanding the predictors of AAX, so the experiences of intergroup threat with Asians as the outgroup is the primary topic of discussion.

Intergroup Relations

Previous relationships between in-groups and out-groups is one factor shaping threat perceptions. There is a history in the United States of anti-Asian government policies, and of blaming Asians for transmission of disease. Asians were scapegoated for outbreaks of smallpox and the bubonic plague (Chen, Trinh & Yang, 2020) after being brought to the US as cheap labor supporting the growth of the mining, railroad & agricultural industries. This “yellow peril” was part of the impetus for the 1882 Chinese Exclusion Act which barred Chinese immigration into the US for over 80 years (Fisher & Fisher, 2001). The act was amended in 1924 to exclude people from any Asian nation. At the beginning of World War II President Franklin D. Roosevelt signed an executive order allowing anyone of Japanese ancestry – even US citizens – to be forcibly interned at government run camps (Gover, Harper & Langton, 2020). This history reveals that negative attitudes and behavior towards Asians and Asian Americans is not a new phenomenon unique to the COVID-19 era (Gee, Ro & Rimoim, 2020). Rather, the current situation has reanimated long-held xenophobia and discrimination.

Power differentials between groups is also an important element in intergroup relations. Since Asians are a minority when compared to groups with European ancestry in the US and have historically had less access to resources they are, as a whole, a lower power group. Researchers have specified that lower power groups are more likely to experience threats, but when higher power groups feel threatened, they respond more forcefully to the perceived threat (Stephan, Ybarra & Morrison, 2012).

Cultural dimensions

Different cultures may predispose people to be more or less sensitive to outgroup threats (Stephan, Ybarra & Morrison, 2012). Hofstede (2001; 2011) identifies six dimensions that are used for comparing cultures. Two of these dimensions are of particular interest for understanding intergroup relationships. Power distance is “the extent to which less powerful members of organizations and institutions...accept and expect that power is distributed unequally” (Hofstede, 2011). Cultures with larger power distances tend towards increased violence and conflict as well as heightened threat perceptions. The second dimension of interest is individualism, conceived as a social characteristic describing the extent to which people in a particular culture are integrated into groups. For example, Asian cultures tend to be collectivist and integration into extended families and clans is the norm. Juxtapose this with the primacy of nuclear families in the United States, a notoriously individualistic culture. Cultures which are individualistic are generally less sensitive to threats than are collectivist cultures (Hofstede, 2001; Stephan, Ybarra & Morrison, 2012).

The reflection of groups portrayed within a media system can also influence stereotypes and ingroup – outgroup perceptions. In the United States, Asians are underrepresented and misrepresented in popular culture. Negative stereotypes of Asians as untrustworthy, criminal, unassimilated immigrants, or Asian women as subservient sexual beings remain; positive but still problematic portrayals of Asians as a “model minority” have grown more common (Ramasubramanian, 2011). These stereotypes, repeated over time and in a variety of media types, become chronically accessible and may be activated easily. Apart from news coverage of the current situation, the fact that COVID-19 was first identified in China may be enough to trigger the negative emotions and thoughts that accompany Asian stereotypes (Centers for Disease Control, 2020).

Situational factors

Situational variables refer to the conditions in which intergroup and interpersonal interactions occur. These sorts of contextual variables are distinct from the intergroup relations factors above because they examine the impact of current aspects of the situation, rather than taking a historical perspective (Stephan, Ybarra & Morrison, 2012). During the COVID-19 pandemic, important variables include elite cues about the seriousness of the virus (Calvillo, et al., 2020). In the US, these messages were quite mixed as scientists were highlighting dangers and recommending changes in behaviors such as social distancing and wearing masks. President Trump and his administration, on the other hand, were downplaying its seriousness and refusing to wear masks in public or social distance. Misinformation was rampant in social media and some traditional media sources. Trump blamed China for mishandling the virus and regularly referred to COVID-19 as the “Chinese virus,” a phrase then repeated by his followers online and off (Chou & Gaysynsky, 2021; Hswen, et al., 2021). We expect greater favorability towards Trump will lead to increased AAX.

Information seeking and avoidance behaviors were also important given the uncertainty about a novel virus which was not well understood. Given that health information seeking is generally associated with increased knowledge regarding the relevant condition (Shieh, Broome & Stump, 2010), we anticipated that people who spent time searching out information would be more knowledgeable about the virus and therefore less likely to exhibit AAX. Concomitantly, we expected information avoidance behaviors to predict higher levels of AAX as those who are avoidant would be less knowledgeable. Perceptions of the seriousness of consequences of contracting the virus and of the likelihood of becoming infected are important situational variables. We expect that higher perceptions of virus susceptibility and severity will increase AAX.

Individual differences

Understanding the predictive power of demographic variables is important in designing effective messages, as media outlets are generally targeted to specific subsets of the audience. Given findings that women are generally more willing to censor hate speech than are men (Lambe, 2004), we expect that women will report lower levels of AAX. The predictiveness of education level is less clear; on the one hand, higher education correlates with lower willingness to censor hate speech generally (Lambe, 2004),⁵ and that might suggest higher levels of AAX. But education should be related to increased accuracy of knowledge about COVID-19 which would elicit lower levels of AAX (Dhanani & Franz, 2020). Self-reported levels of conservatism are an important control variable given the highly politicized nature of COVID-19 in the US (Hart, Chinn & Soroka, 2020).

Two additional individual difference variables were included for analysis. First is the extent of a participant's pathogen disgust level (see Haidt, McCauley & Rozin, 1994; Rozin, Haidt & McCauley, 2000; Tybur, Lieberman, & Griskevicius, 2009); a measure of one's relative sensitivity to things that could cause disease. Political and social psychologists have found that disgust sensitivity (measured as self-reported sensitivity to things like "accidentally touching a bloody cut" or "seeing a cockroach run across the floor") is correlated with stricter rules on immigration and greater support for policies like closing borders with countries viewed as a risk for passing along an epidemic (Faulkner et al., 2004; Kam, 2019; Reny & Barreto, 2020). We anticipate high levels of pathogen disgust will predict greater levels of AAX. Finally, given the uncertain nature of the COVID-19 pandemic, we included the personality trait of tolerance for ambiguity as a predictor. A desire to avoid uncertainty is one predictor of increased threat perception (Stephan, Ybarra & Morrison, 2012), and so we anticipate high levels of tolerance for ambiguity will correlate to lower AAX.

Method

A national survey was administered during the week between March 19–March 25, 2020. For context, the World Health Organization (WHO) declared Covid-19 a pandemic on March 11, and statewide stay at home orders were newly being issued during the collection period. The items from the survey that are included in this analysis are provided in the Appendix.

Participants

The mean age of participants ($N = 1,000$) is 47 years, and the sample is 48% male. The median household income of participants is between 50,000–60,000 USD. 33.5% of the sample had completed a 4-year college degree or higher. Participants for this study were obtained through SSRS, a full-service market research firm, and their research partner, Dynata, which specializes in global online research panels customized to client-specific needs. For the present survey, Dynata invited adult opt-in panelists in the United States to take part in a 20-minute online survey.

SSRS regularly monitored data collection to check for demographic composition of the sample and data quality. Cases determined to be poor-quality, as defined by surveys with a length of survey completion of less than 33% of the median length of survey completion or cases where a participant straight-lined at 75% or more of grids, were removed from the final data. Participants were compensated for survey completion by the panel provider using their standard procedures.

Measures

Data for this research were collected as part of a larger, multi-investigator study. In addition to basic demographic data such as gender and education, the following variables are used in the analysis. Means and standard deviations are summarized in **Table 1**.

Anti-Asian Xenophobia

We included four measures of Anti-Asian xenophobia, reflecting incidents that were being reported in the news and through social media. We did not use an existing scale. These items are in line with consequences identified by IIT including condoning behaviors one would not usually approve, susceptibility to cognitive errors like belief in stereotype-confirming misinformation, and shunning or avoiding the outgroup (Stephan, Ybarra & Morrison, 2012). We also included an item specifically about the acceptability of referring to COVID-19 as the "Chinese virus" because there was an ongoing debate on the topic at the time of data collection. The World Health Organization has protocols for naming diseases so as to avoid geographic or ethnically based stigma (World Health Organization, 2015).

There are four dependent variables, capturing these different aspects of AAX. Acceptability of others displaying hatred toward Asians was a three-item measure, asking participants to indicate how acceptable they consider each of these anti-Asian behaviors on a seven-point scale from unacceptable to acceptable. The items included "Making jokes about Asians, like calling the coronavirus the 'Kung Flu'"; "Telling Asian people in public that the coronavirus is their fault"; and "Physically attacking Asians who are wearing masks to get them to leave where you are." The mean score of this scale was 1.94 ($SD = 1.51$, $\alpha = 0.86$).

⁵ The prevailing explanation for the positive correlation between higher education and lower willingness to censor hate speech is that increased education provides more chances to learn the social norms protective of freedom of expression.

Table 1: Descriptive Statistics and Correlations for Study Variables.

Variable ¹	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
[1] Acceptability AAX	1.94	1.51	-												
[2] "Chinese virus" OK	2.94	2.29	0.50***	-											
[3] AAX misinformation	2.50	1.86	0.54***	0.20***	-										
[4] Avoid Asians	1.60	1.08	0.38***	0.13***	0.49***	-									
[5] Female	0.52	0.50	-0.13***	-0.16***	-0.07*	-0.09**	-								
[6] Education	5.19	2.31	-0.09**	0.05	-0.18***	-0.04	-0.15***	-							
[7] Conservatism	4.30	1.98	-0.05	0.22***	-0.06	-0.16***	-0.02	-0.02	-						
[8] Pathogen disgust	5.24	1.28	-0.07*	-0.00	0.10**	0.11**	0.14***	-0.00	-0.03	-					
[9] Tol. for ambiguity	2.57	0.75	-0.10**	-0.06	-0.25***	-0.22***	0.07*	0.07*	-0.01	-0.36***	-				
[10] Trump favorability	46.64	39.89	0.20***	0.49***	0.18**	0.13***	-0.07*	0.01	0.31***	0.08*	-0.17***	-			
[11] Search out virus information	4.08	1.59	0.16***	-0.06	0.30***	0.33***	0.08**	-0.01	-0.26***	0.27***	-0.20***	-0.02	-		
[12] Avoid virus information	3.10	1.70	0.37***	0.07*	0.53***	0.39***	0.01	-0.15***	-0.15***	0.05	-0.26***	0.12***	0.29***	-	
[13] Susceptibility to virus	2.78	1.07	0.17***	0.01	0.25***	0.21***	-0.03	0.01	-0.17***	0.04	-0.14**	-0.04	0.25***	0.35***	-
Severity of virus	2.76	1.26	0.13***	0.08**	0.18***	0.08**	-0.03	0.00	-0.04	-0.09**	-0.05*	0.06	0.02	0.25***	0.17***

N = 1,000, ¹All IVs higher score = higher on that variable, * $p < .05$, ** $p < .01$; *** $p < .001$.

The second dependent variable is a two-item measure of belief in anti-Asian misinformation, including the belief that Asian people are more likely to carry the virus than others and that eating at Asian restaurants poses a greater risk in terms of exposure to the virus than eating at other restaurants. Participants responded to these items on a seven-point Likert scale. ($M = 2.46$, $SD = 1.86$, $\alpha = 0.88$)

The remaining dependent measures were single items. The first, whether it was acceptable to call the coronavirus the “Chinese virus,” was on a 7-point scale from unacceptable to acceptable ($M = 2.94$, $SD = 2.29$). This item was originally intended to be part of the measure of acceptability of others displaying Anti-Asian hatred described above, but item analysis indicated this item reduced the reliability of the scale substantially.⁶ The second single-item measure asked how often the participant themselves had avoided people who look Asian on public transportation in the past two weeks, on a 4-point scale from not at all to every day ($M = 1.60$, $SD = 1.08$).

Individual Differences

In addition to gender and education, the following variables were measured as predictors.

Ideology

Self-reported political ideology was assessed by asking participants to describe their general political views on a 7-point scale from very liberal to very conservative ($M = 4.30$, $SD = 1.98$).

Pathogen Disgust

Sensitivity to unpleasant and disease-causing stimuli was measured using six items from the pathogen disgust scale established by Tyber, Lieberman, & Griskevicius (2009). Participants were asked to indicate how disgusting they found each item, on a 7-point scale from not at all disgusting to extremely disgusting. Items include “standing close to someone who has body odor,” “seeing a cockroach run across the floor,” “seeing some mold on old leftovers in your refrigerator,” “shaking hands with a stranger who has sweaty palms,” “accidentally touching a person’s bloody cut,” and “sitting next to someone who has red sores on their arm” ($M = 5.24$, $SD = 1.28$, $\alpha = 0.86$).

Tolerance for Ambiguity

Participants’ tolerance for ambiguity was measured using 4 items.⁷ For each item, participants were asked to indicate how much they agree with how well each statement describes them, on a 5-point Likert scale from strongly disagree to strongly agree. Sample items include “I dislike questions which could be answered in many different ways” and “I don’t like situations which are uncertain” ($M = 2.57$, $SD = 0.75$, $\alpha = 0.60$).

Situational Factors

To capture situation-specific information, the following variables were measured.

Trump Favorability

Participants were asked to indicate their favorability toward Trump on a 100-point feeling thermometer, with higher scores indicating greater favorability ($M = 46.64$, $SD = 39.89$).

Information Seeking and Avoidance

Information seeking was assessed through a four-item measure asking how much time participants were spending on active information seeking from various media and interpersonal sources, e.g. “I actively search news media to help me understand about the coronavirus” and “I ask my close friends and family members about the coronavirus.” Responses are on a seven-point scale from “I do not do this at all” to “I do this a lot” ($M = 4.08$, $SD = 1.59$, $\alpha = 0.82$).

Information avoidance was assessed with a parallel three-item measure asking how much time they were spending on avoiding information about the coronavirus, e.g. “I avoid information about the coronavirus.” The same seven-point scale was used ($M = 3.10$, $SD = 1.70$, $\alpha = 0.84$).

Perceptions of Susceptibility to and Severity of the Virus

Perceived susceptibility to the virus was a 3-item measure, where participants were asked to indicate how likely it is that they, a member of their family, and members of the community will contract the coronavirus. Possible answers were assessed on a 5-point Likert scale from strongly disagree to strongly agree ($M = 2.78$, $SD = 1.10$, $\alpha = 0.79$).

⁶ Research suggests using the phrase “Chinese Virus” became a way of signaling group affiliation among Trump supporters (Chou & Gaysynsky, 2021).

⁷ The original measure had 5 items, but scale analysis revealed an improved alpha with the removal of one item, so a 4-item measure was used for all analyses.

To determine perceived severity of the virus, participants indicated on the same 5-point Likert scale whether, if they got the coronavirus, it would be a serious threat to their health, the health of their family members, and the health of people in their community ($M = 2.76$, $SD = 1.26$, $\alpha = 0.82$).

Results

Descriptive statistics and bivariate correlations were run for all study variables and are summarized in **Table 1**. Mean scores of AAX are lower than the scale midpoint on all four measures reflecting relatively low to moderate levels of xenophobia.⁸ Nonetheless, the distributions of the AAX measures are sufficient to be significantly correlated to many of the other study variables. Relationships between variables are in the predicted direction except that information seeking and information avoidance are *both* positively correlated with increased AAX. We had anticipated information seeking would be negatively correlated. Also, the acceptability of calling COVID-19 the “Chinese Virus” had a different pattern of relationships than the other three measures of AAX, with far fewer variables as significant predictors.

Multiple regression analyses were run with each of the four AAX measures as the dependent variable (see **Table 2**). Variables were entered in two models in which the first model contained only individual difference measures and the second block added in situational factors. Situational factors had more explanatory power than individual differences, so Model 2 is described here for each of the four dependent variables. R^2 was .21 for Acceptability of Anti-Asian Hatred, .27 for Calling coronavirus “Chinese virus,” .36 for Belief in Anti-Asian misinformation, and .24 for Avoiding people who look Asian on public transportation.

Among individual differences, gender was the most consistently predictive variable, with β s ranging from .10–.12 for each of the four AAX measures. Men are more likely to express higher AAX than are women, even when situational factors are considered. Education remains a significant negative predictor of the acceptability of anti-Asian hatred ($\beta = -.06$) and belief in anti-Asian misinformation ($\beta = -.13$). It is unrelated to the other two aspects of AAX. Pathogen disgust is negatively related to acceptability of anti-Asian hatred ($\beta = .10$), but unrelated to the other three AAX measures. Tolerance for ambiguity is a negative predictor for all four AAX aspects in Model 1, but when situational variables are added to the regression it remains significant only for belief in misinformation ($\beta = -.07$) and avoiding Asians on public transportation ($\beta = -.10$). Liberal conservative self-ranking has the most complex relationship with AAX. Conservatism is associated with finding it more acceptable to use the phrase “Chinese virus” ($\beta = .08$) but *negatively* related to avoiding Asians on public transportation ($\beta = -.10$). For the other two parts of AAX, once situational variables are entered relationships with conservatism are no longer statistically significant.

For situational variables, perceptions of susceptibility to and severity of the virus are largely unrelated to AAX. Favorability toward President Trump is positively related to higher levels of AAX across the four measures, especially the use of the phrase “Chinese virus” (Acceptability of Anti-Asian Hatred, $\beta = .20$; Calling coronavirus “Chinese virus,” $\beta = .46$; Belief in Anti-Asian misinformation, $\beta = .11$; Avoided people who look Asian on public transportation, $\beta = .11$). Information seeking behaviors – actively searching out virus information and avoiding such information are both positive predictors for all elements of AAX with the exception of whether or not it is considered acceptable to call it the “Chinese virus” (For searching out virus information: Acceptability of Anti-Asian Hatred, $\beta = .10$; Belief in Anti-Asian misinformation, $\beta = .17$; Avoided people who look Asian on public transportation, $\beta = .22$. For avoiding virus information: Acceptability of Anti-Asian Hatred, $\beta = .29$; Belief in Anti-Asian misinformation, $\beta = .40$; Avoided people who look Asian on public transportation, $\beta = .26$). The relationship of information avoidance to belief in anti-Asian misinformation is particularly strong. Situational factors add more predictive power for AAX than do individual differences, although both groups of variables provide a statistically significant change in R squared.

Discussion

Communication campaigns designed to combat anti-Asian xenophobia during COVID-19 could maximize the potential effectiveness of their efforts by targeting messages to particular segments of the population. In terms of individual difference variables, our findings suggest that men, those with lower levels of education, and people with low tolerance for ambiguity are the groups most in need of intervention. This group of people may be particularly difficult to persuade given the politicization of COVID-19. Focus groups and message testing would provide essential information to crafting compelling message campaigns to mitigate the discrimination faced by Asians and Asian-Americans during the pandemic. It would also be important to find strategic message placements in media that attract this type of audience. A parallel style of campaign could serve a preventative function for audiences who are opposed to AAX. Informing women, people who are more highly educated, and who have a higher tolerance for ambiguity to stand up when they witness harassment, misinformation, or shunning could alleviate some of the negative experiences that Asians and Asian-Americans are experiencing. Working to establish social norms against expressing AAX could

⁸ Social desirability biases may have been an issue.

Table 2: Regression Coefficients of Study Variables on Anti-Asian Xenophobia.

Variable	Acceptability of Anti-Asian Hatred 1 = unacceptable 7 = acceptable						Calling coronavirus “Chinese virus” 1 = unacceptable 7 = acceptable					
	Model 1			Model 2			Model 1			Model 2		
	B	β	SE	B	β	SE	B	β	SE	B	β	SE
Constant	4.37***		.37	1.81***		.41	3.32***		.55	1.60**		.60
Gender (1-M; 2-F)	-.41	-.14***	.10	-.34	-.11***	.09	-.71	-.016***	.15	-.53	-.012***	.13
Education	-.06	-.10**	.21	-.04	-.06*	.02	.03	0.03	.03	.02	0.02	.03
Liberal - conservative	-.05	-.06	.02	-.04	-.05	.02	.26	0.22***	.04	.09	0.08*	.04
Pathogen disgust	-.11	-.09**	.04	-.12	-.10**	.04	-.01	0.00	.06	.00	0.00	.06
Tolerance for ambiguity	-.27	-.14***	.07	-.02	-.01	.06	-.21	-.007*	.10	.05	0.02	.09
R ²	.05***						0.08***					
Trump favorability				.01	0.20***	.00				.03	0.46***	.00
Search out virus information				.09	0.10**	.03				-.05	-.03	.05
Avoid virus information				.26	0.29***	.03				.03	0.02	.04
Susceptibility to virus				.05	0.04	.04				.06	0.03	.07
Severity of virus				.02	0.01	.04				.08	0.04	.05
Total R ² (ΔR^2)	0.21 (0.16)***						0.27 (0.19)***					
Variable	Belief in Anti-Asian misinformation 1 = strongly disagree 7 = strongly agree						Avoided people who look Asian on public transportation 1 = not at all 4 = every day					
	Model 1			Model 2			Model 1			Model 2		
	B	β	SE	B	β	SE	B	β	SE	B	β	SE
Constant	5.30***		.44	0.81		.46	2.97***		.26	1.11***		.29
Gender (1-M; 2-F)	-.46	-.012***	.12*	-.38	-.10**	.10	-.23	-.011***	.07	-.21	-.010**	.06
Education	-.14	-.018***	.03	-.10	-.013***	.02	-.18	-.004	.02	.00	-0.00	.01
Liberal - conservative	-.06	-.007*	.03	.01	0.01	.03	-.09	-.016***	.02	-.05	-.010**	.02
Pathogen disgust	.06	0.04	.05	.04	0.03	.04	.05	0.05	.03	.01	0.01	.03
Tolerance for ambiguity	-.58	-.023***	.08	-.19	-.007*	.07	-.30	-.021***	.05	-.14	-.010**	.05
R ²	0.11***						0.09***					
Trump favorability				.01	0.11***	.00				.00	0.11***	.00
Search out virus information				.20	0.17***	.03				.15	0.22***	.02
Avoid virus information				.44	0.40***	.03				.17	0.26***	.02
Susceptibility to virus				.10	0.05	.05				.03	0.03	.03
Severity of virus				.10	0.07*	.04				-.01	-.01	.03
Total R ² (ΔR^2)	0.36*** (0.25)						0.24*** (0.15)					

N = 1,000; * $p < .05$; ** $p < .01$; *** $p < .001$ // All IVs higher score = higher on that variable (except gender, as noted).

offer some longer-term benefits in terms of intergroup relations. Another possibility is to develop positive messaging targeting Asians and Asian-Americans in the US. A campaign of support and solidarity may help to alleviate some of the depression and anxiety that AAX can engender. Summative research should be conducted to gauge the impact of these campaigns.

In terms of situational variables, individuals who favor Trump are particularly important target audiences. Although all four of the measures of AAX are positively related to Trump favorability, the connection with finding it acceptable to refer to coronavirus as the “Chinese virus” is particularly strong. While the relationship between Trump favorability and conservatism is moderately positive ($r = .31$), these variables have quite different patterns of relationships with AAX. It may be that the salience of a “Trump supporter” identity was heightened during the time frame when our data were collected at the outset of the coronavirus and Trump was highly criticized for his failure to act. Future research should examine the role of elite cues in shaping xenophobic attitudes and behaviors, particularly during a crisis situation.

The relationship of information seeking – actively seeking or actively avoiding – also needs further examination. Although intuitively one might expect those behaviors to have opposing relationships to one another and with AAX, this was not exhibited in our data. It appears the two are not mutually exclusive, but rather people can actively seek out information for a while and then need to take a break on other days. It is also possible high levels of information seeking and avoidance may reflect a third, unmeasured variable such as level of anxiety about COVID-19. Alternatively, it is possible that the sheer amount of information available, and the prevalence of conspiracy theories and incorrect information, may have led people to become overwhelmed and/or misinformed.

Conclusion

Intergroup threat theory provides a useful framework for understanding the kinds of variables that may influence AAX during a pandemic. This research focused specifically on individual difference variables and situational factors related to COVID-19 to identify potential target audiences for campaigns and interventions designed to lower AAX. The other two categories of predictors identified by ITT (intergroup relations and cultural dimensions) suggest that efforts to improve treatment of Asians in the United States would benefit from a longer-term approach. Given the history of intergroup relations between the majority culture and the Asian community in the US, efforts to alleviate stereotypes of and discrimination toward Asians are necessary. Understanding the characteristics of individuals at most risk of engaging in AAX is a first step toward addressing it and potentially preventing it.

Additional File

The additional file for this article can be found as follows:

- **Appendix.** Survey Items. DOI: <https://doi.org/10.33972/jhs.204.s1>

Competing Interests

The authors have no competing interests to declare.

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