



# Post-pandemic American Travelers' Behavior given a Chikungunya Outbreak

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## Abstract

**Introduction:** Mosquito-borne diseases have historically affected communities, especially in tropical areas where mosquitoes and illnesses are endemic. Globalization, climate change, and increased travel have created ideal conditions for outbreaks of mosquito-borne diseases that could threaten the American health system and place a burden on the national economy, especially in southern states.

**Methods:** The study adopts a quantitative cross-sectional design with a retrospective survey carried out using the Pollfish platform in June 2022. The data were analyzed using descriptive statistics and hierarchical multiple regression to assess the three hypotheses: (H1) Chikungunya awareness is related to sociodemographic factors; (H2) Wearing long sleeves and pants is related to (a) Chikungunya awareness and (b) information-seeking behaviors, when controlling for sociodemographic variables; (H3) Use of insect repellents is related to (a) Chikungunya awareness and (b) information-seeking behaviors when controlling for sociodemographic variables.

**Results:** The results highlight the relationships between chikungunya's awareness, information-seeking behavior, and willingness to engage in protective behaviors. 45.91% of the participants mentioned not having heard about chikungunya, and 67.07% of respondents had sought information about mosquito-borne illnesses in the past, 55.9% have looked at the U.S. State Department's website for mosquito-borne diseases, 38.32% have visited the U.S. CDC website for information specifically about chikungunya.

**Conclusion:** The results of this study show that most American travelers are unaware of chikungunya and its mode of transmission. Travel could likely introduce the chikungunya virus to the United States. Despite increased health information-seeking behavior among U.S. residents after the Covid19 pandemic, Chikungunya awareness is low.

**Keywords:** Chikungunya virus, Information seeking behavior, Travel related illness, Health-Related Behavior.

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## Introduction

Chikungunya is a mosquito-borne disease that has been in the news in recent years, particularly in association with travel, tourism, and outdoor recreation. Because the disease is endemic in the Caribbean, travel to disease-endemic regions is the primary risk factor for mosquito exposure and subsequent infection<sup>1, 2</sup>. In the presence of competent *Aedes* species mosquito vectors, autochthonous transmission has been reported in new destinations, including parts of the United States (U.S.), raising concerns of potential epidemics<sup>1, 3, 4</sup>. Prior to 2013, when Chikungunya disease was first reported in the

Caribbean Island of St. Martin<sup>5</sup> an average of 28 cases were reported annually in the U.S. among travelers returning from areas known to be epidemic or endemic for chikungunya disease<sup>6</sup>.

However, beginning in 2014, soon after the disease appeared in Caribbean destinations, the U.S. saw an increase in chikungunya cases among travelers returning from the Caribbean and South America, with nearly 3,000 travel-related cases reported nationwide<sup>4, 7, 8, 9</sup>. Early in 2015, Florida reported eleven cases of autochthonous Chikungunya transmission, marking the first time the disease was transmitted locally within the U.S.<sup>10</sup> and thus

confirming the fears of researchers about the possibility of spread of the disease in the U.S.<sup>5</sup> since local transmission has been confirmed in previous years, now the concern is focused on the likelihood of under-reporting of chikungunya, given the clinical similarities with other mosquito-borne diseases<sup>11, 12</sup>.

Beyond the immediate infection risk from travelers is an even wider public health risk resulting from the possibility of local transmission and/or epidemic events due to 1) the absence of pre-existing protective immunity in the general population, 2) a high viral load in the host and infected mosquito vectors, 3) the lack of vaccination and effective treatments, and 4) the wide distribution of the mosquito vectors, *Aedes aegypti* and *A. albopictus* in the U.S., especially the South, West, and Eastern seaboard of the U.S.<sup>3, 4, 13</sup>. Due to this, adopting personal protective behaviors (PPBs) is essential to avoid transmitting diseases transmitted by mosquitoes<sup>14</sup>. Previous research has used the Protection Motivation Theory to understand the factors influencing behavior intentions when facing a threat and the likelihood of engaging in PPBs<sup>7,8,15,16</sup>.

According to the Protection Motivation Theory (PMT), awareness and demographic characteristics are the greatest predictors of behavioral intentions and adoption of self-protective measures (using repellents and wearing loose and long clothing)<sup>7, 8, 17</sup>. In the process of creating risk awareness, information-seeking behavior is a crucial factor in evaluating the severity of the risk, the vulnerability of the individual facing said risk, and the coping mechanism the individual is willing to engage in order to protect themselves from the threat.

The ways people engage in information-seeking ultimately affect the behaviors that people might adopt in the face of a health risk<sup>18</sup>. In this sense, previous studies<sup>7,8,19</sup> assessed the levels of chikungunya awareness among U.S. travelers to Caribbean destinations and health information-seeking behaviors, finding a positive association between participants' disease awareness and gender, college education, more days in the destination, and more time spent outdoors. Low levels of information-seeking behavior and disease awareness were also reported in a previous study<sup>7,8</sup> revealing a need to identify additional factors associated with chikungunya disease awareness and the adoption of recommended chikungunya-risk reduction behaviors.

Research on chikungunya awareness among American travelers has not been conducted in recent years, even though there might be changes in the health information-seeking behavior of American residents as a result of experiencing the COVID-19 pandemic and the increasing salience of messages regarding the use of personal protective behaviors, such as social distancing and

wearing masks. While increased levels of concern about health and self-protection have been documented among travelers due to the COVID-19 pandemic<sup>20</sup>, the implication of disease awareness on health-seeking information behavior and adopting person protective behaviors (PPBs) across mosquito-borne illnesses has not been explored in a post-COVID pandemic world.

Studying the changes in mosquito-borne illnesses awareness and willingness to engage in PPBs among travelers is essential because it provides crucial information for tourism and public health officials to consider when managing the reduction in transmission<sup>14</sup>.

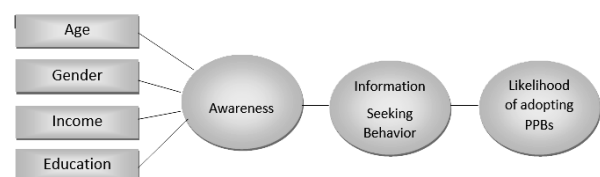
In order to contribute to the literature and to provide updated information for practitioners, government agencies, and destination managers regarding levels of awareness among travelers in a post-Covid-19 world, the present study seeks to explore changes in chikungunya awareness among U.S. residents and confirm the relationship between (1) chikungunya disease awareness (2) health information-seeking behavior for chikungunya, and (3) level of adoption of recommended personal protective behaviors. For this reason, a replication of previous studies was conducted<sup>7,8</sup> including two recommended personal protective behaviors of interest (a) use of insecticides or repellents on skin or clothing, (b) wearing loosely-fitting long-sleeved shirts, long pants, hats, and boots as weather permits.

Based on previous research<sup>7,8,19</sup> and changes in travelers' willingness to adopt PPBs as a result of the COVID-19 pandemic<sup>20,21</sup> it is hypothesized that the increase in awareness of chikungunya will act as a predictor of information-seeking behaviors, and, subsequently, the adoption of protective measures to guard against mosquito bites (Fig. 1). For this reason, the following hypotheses are considered:

**Hypothesis 1:** Chikungunya awareness is related to sociodemographic factors (i.e., gender, age, income, education).

**Hypothesis 2:** Wearing long sleeves and pants is related to (a) Chikungunya awareness and (b) information-seeking behaviors, when controlling for sociodemographic variables.

**Hypothesis 3:** Use of insect repellents is related to (a) Chikungunya awareness and (b) information-seeking behaviors, when controlling for sociodemographic variables.



**Fig 1.** Variables in the study

## Methods

The present study adopts a quantitative cross-sectional design with a retrospective survey conducted on U.S. residents considering traveling for leisure to Chikungunya endemic destinations within the next two years. A traveler/tourist is defined as an individual who plans to travel from the United States to one or more Chikungunya endemic destinations and participate in recreation activities or rented or leased transient accommodations for six months or less (Leiper, 1979). The “Chikungunya endemic destinations” have been defined as countries where Chikungunya local transmission cases have been reported in the past five years (India, Cambodia, Latin America, and The Caribbean), excluding the continental United States.

## Recruitment

The survey instrument was launched in June 2022 and resided in Pollfish® an online research participant recruitment platform. Pollfish is an online survey platform that collaborates with developers of smartphone applications and website owners to access users and randomly addresses survey questionnaires to them in exchange for monetary compensation and app goodies. Pollfish has a broad portfolio of apps, websites, and developers worldwide and detects whether the user is eligible for a survey based on the criteria provided by the researchers. Pollfish reaches possible subjects and collects data until achieving the sample size that is established as a priority by the researchers.

There were three participant inclusion criteria for this study (1) age: participants needed to be at least 18 years old to participate, (2) place of residence: participants needed to be currently living in the United States; and (3) travel intention: participants needed to be planning to travel to Chikungunya endemic destinations in the next two years.

## Sample Size

The total number of individuals in the population of interest is 331.45 million American residents, according to the 2020 census; the ideal sample size was determined by the researchers using the adjusted sampling size formula<sup>21</sup>:

$$S = Z^2 \times Px \frac{(1 - P)}{M2}$$

$$\text{Adjusted Sample Size} = \frac{S}{1 + \frac{(S - 1)}{\text{Population}}}$$

Where Z represents a Z-score of 1.95 with a confidence level of 95%, a population portion assumed at 0.5, and a margin error of 5%. Thus, the ideal sample size

was determined with at least 383 observations to generalize to the population of interest<sup>21</sup>. For a sound statistical analysis<sup>21</sup>, we used the formula:

$$N > 50 + 8(m)$$

Where “m” is the number of variables used in the model, with a total of 16 items, a minimum of 178 observations are needed to achieve statistical power.

$$N > 50 + 8(16)$$

$$N > 178$$

The total number of observations (501) far exceeds the minimum requirement; consequently, the data is sound for the regression analysis.

The respondent rate was 37.78%, with a total of 1326 respondents agreeing to answer the survey and 825 disqualified because they did not meet the selection criteria (planning to travel to chikungunya’s endemic destination in the next two years). Participation in this study was completely voluntary.

## Variables

The awareness of study participants about Chikungunya disease was measured as a nominal variable using the question, “Have you heard about Chikungunya disease before today?” Chikungunya awareness was coded (1 = “Definitely have heard about it,” 2 = “I have heard the word, but I do not know anything about it,” 3 = “Never heard of it”). Nine variables were included to evaluate the knowledge of the disease (the form of transmission and symptoms and availability of treatments). One question was also included to assess the information-seeking behavior on websites such as WHO and CDC. The behavioral intention question regarding implementing self-protection behavior was evaluated by questioning the likelihood of using insect repellants and the likelihood of using long sleeves and long pants.

## Statistical Analysis

All data cleaning, processing, and statistical analyses were performed using SPSS® Statistics version 26. Multiple regression was run to test hypothesis one (relationship between demographics and awareness) and hierarchical 3-step multiple regression to assess hypotheses two and three.

## Results

A total of 501 qualified respondents participated in the online survey; 48.10% (n=241) of participants reported their gender as male, whereas 51.90% (n=260) as female, which was in line with the gender ratio in the United States according to the data reported by the U.S. Census Bureau in 2019 (50.97% female, 49.03% male). Furthermore, there was fair representativeness of all the group ages, with 15.17% (n=76) of the participants

reporting to be in a range of 18 to 24 years, 32.33% (n=162) in the 25-34 years range, 33.13% (n=166) in the 35-44 years range, 10.78% (n=54) in the 45-54 years range, and 8.18% (41) stated to be over 54 years of age (Table 1). Regarding travel intentions, 62.8% (n=315) of participants reported the Caribbean as the most probable destination to visit in the next two years (Table 2).

**Table 1.** Demographics

Variable	No. (%)
<b>Gender</b>	
Male	48.10
Female	51.90
<b>Race</b>	
Arab	0.6
Asian	3.39
Black	11.18
Hispanic	12.97
Latino	2.4
Multiracial	63.07
Other	1.60
Prefer not to say	1.40
White	3.39
<b>Age</b>	
18-24	15.17
25-34	32.73
35-44	33.13
45-54	10.78
> 54	8.18
<b>Income</b>	
Under \$25000	11.38
Between \$25000 and \$49999	15.97
Between \$50000 and \$74999	16.37
Between \$75000 and \$99999	12.97
Between \$100000 and \$124999	10.38
Between \$125000 and \$144999	9.78
\$ 150000 and more	16.57
Prefer not to say	6.59
<b>Education level</b>	
Middle school	3.59
High school	21.36
Vocational/Technical College	14.57
University	37.13
Post-graduate	23.35

The study showed that 45.91% (n=230) of the participants mentioned not having heard about chikungunya, and 25.55% (n=128) said they had "heard the term before but did not know anything about it." Accordingly, when chikungunya's knowledge levels were measured, the results showed that, on average, only 30.93% (n=155) identified the characteristics of the diseases, ways of transmission, and treatments available correctly; 44.77% (n=224) stated that they did not know the answers, and 24.3% (n=122) gave wrong answers. Thus, self-reported

knowledge was significantly higher than calculated knowledge. Thus, the calculated knowledge score was used due to the assumption that there was a social bias that increased the self-reported measure of knowledge.

**Table 2.** Travel destination

Destinations	Respondents %	Answers %
The Caribbean	62.87	28.43
Brazil	31.34	14.17
Malaysia	19.56	8.84
Thailand	26.95	12.18
Colombia	26.75	12.09
India	16.37	7.4
Cambodia	16.17	7.31
Other destinations in Latin America	21.16	9.57

Results of the health information-seeking behavior revealed that 67.07% (n=336) of respondents had sought information about mosquito-borne illnesses in the past, 55.9% (n=280) have looked at the U.S. State Department's website for mosquito-borne diseases, 38.32% (n=192) have visited the U.S. CDC website for information specifically about chikungunya. Before travel, 52.50% (n=263) of participants declared they saw the U.S. CDC's website for mosquito-borne diseases at their primary destination before the trip, 51.70% (n=259) consulted with their doctor about strategies to protect themselves from mosquito-borne illnesses when traveling, and 58.28% (n=292) checked the travel destination's website for information (Table 3).

The willingness of participants to engage in personal protective behaviors varied across the recommended actions. The likelihood of wearing long-sleeved shirts and long pants to avoid mosquito bites showed a median of 3.87 (mean=3.87, S.D.=1.09, on a 5-point liker scale) with 66.67% (n=334) of participants rating between four (likely) and five (very likely). When asked about the likelihood of staying in places with air conditioning or using window and door screens to keep mosquitoes outside, the mean was 3.96 (mean=3.98, S.D.=1.05), with 70.06% (n=351) stating they were likely and very likely to engage in the behavior. Similarly, 66.07% (n=331) of respondents declared they would likely and very likely sleep under a mosquito net if they needed it (mean=3.82, S.D.=1.19), and 68.26% (n=342) stated they were likely and very likely to use EPA-registered insect repellents (mean=3.95, S.D.=1.05), and, 62.28% (n=312) said they were likely and very likely to treat clothing and gear with permethrin or purchase permethrin-treated items (mean=3.73, SD=1.13).

**Table 3.** Study Participants' Health Information- Seeking Behavior

STATEMENT	YES %	NO %
I have sought information about mosquito-borne illnesses in the past	67.07	32.93
I have looked at the U.S. State Department's website for information about mosquito-borne diseases	55.89	44.11
I have previously visited the U.S. CDC's website for information about Chikungunya disease	38.32	61.68
I visited the U.S. CDC's website for information about mosquito-borne diseases at my primary destination (s) before the trip.	52.50	47.50
I asked my doctor about strategies I could use to protect myself from mosquito-borne illnesses when traveling	51.70	48.30
I have checked the travel destination's websites for information to keep me safe from mosquito-borne illnesses	58.28	41.72

**Hypothesis 1: Chikungunya awareness is related to sociodemographic factors (i.e., gender, age, income, education).**

Multiple regression was used to assess the predictability of demographics (gender, age, education, and income) on the level of chikungunya disease awareness. Preliminary analyses were conducted to ensure no violation of normality, linearity, multicollinearity, and homoscedasticity assumptions. The model explained 9.3% of the variance in the dependent variable  $F(4, 495) = 12.7, P < .001$ . In the model, only the control measures, age, education, and income, were statistically significant, with education recording a higher beta value ( $\beta = .20, p < .001$ ) (Table 4).

**Table 4.** Predictors of Chikungunya Disease Awareness among Study Participants

Variable	Have you heard about chikungunya before today?			Standardized Coefficients Beta	P value
	Have you heard about this	I have heard the word, but I do not know anything about it	Never heard of it		
<b>Age</b>					
18-24	3.14%	4.31%	7.45%	.181	.001
25-34	12.74%	8.82%	10.59%		
35-44	9.22%	7.84%	15.49%		
45-54	2.75%	2.75%	5.09%		
> 54	0.19%	1.37%	8.25%		
<b>Gender</b>					
Female	12.35%	12.94%	25.69%	.080	.040
Male	15.69%	12.16%	21.17%		
<b>Income</b>					
Under \$25000	2.55%	3.92%	3.73%	.980	.031
Between \$25000 and \$49999	3.73%	4.12%	1.76%		
Between \$50000 and \$74999	6.86%	5.29%	4.12%		
Between \$75000 and \$99999	2.16%	1.96%	7.06%		
Between \$100000 and \$124999	3.73%	1.76%	10.20%		
Between \$125000 and \$144999	4.51%	4.32%	8.24%		
\$ 150000 and more	4.5%	2.16%	6.07%		
Prefer not to say	0.98%	1.57%	4.7%		
<b>Education level</b>					
Middle school	1%	0.8%	1.8%	.180	.001
High school	3.8%	3.2%	15%		
Vocational/Technical College	4%	3.8%	6.8%		
University	11%	10.6%	15.4%		
Post-graduate	8.6%	7.2%	7.6%		
<b>Race</b>					
Arab	0.2	0.2	0.2	.021	.626
Asian	1.2	1	1.2		
Black	2.59	2.4	6.19		
Hispanic	2.59	5.99	4.39		
Latino	0.6	0.2	1.6		
Multiracial	0.2	0.2	1.2		
Other	0.6	0.2	0.6		
Prefer not to say	0.4	1	2		
White	20.16	14.37	28.52		
<b>Time spent outdoors</b>	<b>Average 17.94 hours</b>				

**Hypothesis 2: Wear long sleeves and pants is related to (a) Chikungunya awareness and (b) information-seeking behaviors when controlling for sociodemographic variables.**

Hierarchical multiple regression was conducted to assess the relationship between the control variables chikungunya awareness and information-seeking behaviors (seek information about mosquito-borne illnesses, visit the U.S. State Department for information about mosquito-borne illnesses, visit the CDC's website for information about chikungunya, and ask a doctor about strategies to avoid mosquito-borne illnesses) in the likelihood of wearing long sleeves and pants when controlling for demographics (age, gender, income, education). Preliminary analyses were conducted to confirm no violation of normality, linearity, multicollinearity, and homoscedasticity assumptions. Demographics were entered in step 1, awareness in step 2, and information-seeking behavior in step 3 of the regression. Results showed the model was not statistically significant, with awareness contributing 1.1% to the variance of the model and information-seeking contribution 0.6%.

**Hypothesis 3: Use of insect repellents is related to (a) Chikungunya awareness and (b) information-seeking behaviors when controlling for sociodemographic variables.**

Similar to hypothesis two, hierarchical multiple regression was used to assess the ability of two control variables (awareness and information-seeking behaviors) to predict the likelihood of using insect repellent when controlling for demographics. Preliminary analyses confirmed no violation of normality, linearity, multicollinearity, and homoscedasticity assumptions. Demographics (age, gender, education, and income) were entered in Step 1, explaining 2.8% of the variance of the likelihood of using repellents. In Step 2, awareness was entered into the model but did not contribute to explaining any variance in the dependent variable. After entry, seeking-information behaviors (seek information about mosquito-borne illnesses, visit the U.S. State Department for information about mosquito-borne illnesses, visit the CDC's website for information about chikungunya, and ask a doctor about strategies to avoid mosquito-borne illnesses) at Step 3 the total variance explained by the model as a whole was 4.5%,  $F(3,491)=2.91$ ,  $p=0.004$  with the seeking information variables explaining 1.7% of the variance of the dependent variable,  $R^2 \text{ change}=0.017$ ,  $F \text{ change}=2.91$ ,  $p=0.03$ . In the final model, only education and visit to the U.S. State Department for information about mosquito-borne illnesses were statistically

significant, with education recording a beta value of .107 and visit to the U.S. State Department for information about mosquito-borne illnesses reporting a beta value of .136 (Table 5).

**Table 5.** Health information seeking influence in the use of repellents

Model	R square	Adjusted R	F	Sig
Model 1 Includes the effect of demographics on the likelihood of using repellents	.028	.020	3.59	.001
Model 2 Includes the effect of awareness on the likelihood of using repellents	.028	.018	2.87	.010
Model 3 Includes the effect of information-seeking behaviors on the likelihood of using repellents	.045	.030	2.91	.000

### Conclusions

The results of this study showed that 37.78% of the total number of participants who accessed the survey had planned to travel to a destination where chikungunya is endemic in the next two years; of these, only 28.54% reported knowing about the disease (25.55% said that they have heard the word but know nothing about it). Previous studies have emphasized that lack of awareness of the chikungunya illness (forms of transmission, symptoms, and short-term and long-term consequences, among others) and how it increases the probability of being overexposed to mosquito bites or underestimates the importance of self-protective behaviors<sup>7,8,22,23</sup>.

The results of this study revealed a lower rate of chikungunya awareness (25.55%) compared to previous studies where 30% awareness was reported<sup>7</sup>. This lower rate may be explained due to a lack of local chikungunya infections being reported in the United States in 2022 by the media and, thus lack of familiarity with the virus. This study also found that age, gender, and education impact awareness, with older, more educated men reporting higher levels of awareness. This shows a shift from previous studies where women tended to be more aware of the disease and more likely to engage in protective behaviors<sup>7,8,24,25</sup>.

Since chikungunya awareness alone does not significantly predict the use of repellent or wearing long and loose clothing and since there are no currently marketable treatments or vaccines, the only way to reduce the probability of importing chikungunya through travel and future local transmission is the adoption of PPBs. Awareness' lack of significant prediction of PPBs may be

due to the low levels of knowledge in this sample as well as lower rates of severity which were expressed by the respondents. This is in line with the results of previous studies by<sup>7,8</sup>, where perceived severity was the main predictor for the likelihood of wearing long loose clothing.

Regarding information-seeking behavior, results showed that 67.07% of the participants had previously sought information about diseases transmitted by mosquitoes, which is a considerable increase in comparison to the results of previous studies. Hamer and Connor, in 2004, reported that only 36% of travelers sought travel health advice<sup>24,25</sup>, and Omodior et al. 2017 reported more than 50%<sup>7</sup>. The behavior's change may be due to the increased messaging used during the COVID pandemic to check the CDC sites for updated information, check with your health care provider or merely the year's worth of COVID information being present on the 24-7 news cycle.

### Implications

Although this study reports an improvement in health information-seeking behavior among U.S. residents, it also reveals low rates of chikungunya awareness. This information is relevant because it allows destination managers and health agencies to plan for ongoing educational campaigns that focus not only on creating awareness of the existence of a disease but also prioritize educating about its severity, vulnerable populations, and available treatments (if any). The results confirmed different levels of awareness across demographic groups, thus revealing the need to focus on particular niches when carrying out educational campaigns.

Furthermore, results help identify the information sources that significantly influence the levels of awareness and point to sources of information that do not contribute significantly to the adoption of PPBs among U.S. residents. The results also provide an argument for the need to update the contents of official sources of information and how this information is delivered to the user.

Another interesting finding is that 55.9% of participants reported having visited the State Department and the CDC (51.70%) websites before traveling to a destination where mosquito-borne diseases are endemic. However, 58.28% said they had searched for information on the web pages of the target destinations. The results support the idea that travelers may not visit the CDC or U.S. Department of State websites for information but instead visit the destination website for suggested activities, attractions, travel experiences (airports), accommodation available, and transportation within the destination (car rental, bus routes, etc.) to gain their

information. Thus, increasing investing in messaging on the aforementioned sites would increase the probability of exposure to information for potential travelers<sup>7,8,24,25</sup>.

### Limitations

While the findings of this study contribute significantly to understanding Chikungunya awareness levels among travelers. However, they are limited to the U.S. traveler/tourist scheduled to travel in the next two years to chikungunya -endemic destinations. They should not be generalized to other populations or a broader context. Another limitation is that the data was collected through the online platform Pollfish, which means that different segments of the population of interest without Internet access and those who are not technologically literate are not considered in the sample. Therefore, it is possible that a segment of the population is not represented in the study.

### Future research

The adoption of PPBs among travelers is, at the moment, the most important strategy to avoid the importation of the chikungunya virus; thus, more research must be done to uncover crucial factors that lead to the likelihood and willingness to adopt PPBs when traveling to destinations where Chikungunya is endemic.

### Conclusion

Despite the study's limitations, the results provide valuable information for disease control agencies and destination planners. It is evident that information about PPBs among travelers should be prioritized in the United States and destinations where chikungunya is endemic. Collaborative work with the main destinations receiving American tourists, especially the Caribbean, is essential.

### Research Highlights

#### What is know?

Chikungunya is a mosquito-borne disease that has been associated with travel, tourism, and outdoor recreation.

Local transmissions of Chikungunya have been reported in the United States since 2015.

Chikungunya is a public health risk in the United States due to the absence of pre-existing protective immunity in the general population, the presence and wide distribution of mosquito vectors, and the lack of vaccination and effective treatments.

#### What this study adds?

Chikungunya awareness alone does not significantly predict the use of repellent or wearing long and loose clothing.

There is an improvement in health information-seeking behavior among U.S. residents, but lower rates of chikungunya awareness (25.55%). There are different levels of awareness across demographic groups, revealing the need to focus on particular niches when carrying out educational campaigns.

### Conflict of Interest

The authors have not conflicts of interest

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