Racism and Mental Health: Examining the Psychological Toll of Anti-Asian Racism during the COVID-19 Pandemic

Secil E. Ertorer

Department of Sociology, Criminal Justice and Environmental Studies, Canisius University, Buffalo, NY 14208, USA; ertorers@canisius.edu

Abstract: The current study examines the links between anxiety and depression symptoms and COVID-19-related racism amongst Asian Americans living in western New York, United States. Based on the findings of survey data (n = 333) and in corroboration with minority stress theory, all forms of racism are positively correlated with anxiety and depression levels. There are differences across different forms of racism. Experiences of avoidance and verbal harassment are primarily linked to increased levels of anxiety, while encountering discrimination in business and social settings is more likely to contribute to depression. Indirect discrimination and stigma consciousness tend to heighten anxiety more than depression. Moreover, individuals who are native-born and female tend to report worse mental health outcomes than those who are foreign-born Asians or males. There is a contrasting relationship with income, where higher earnings are linked to reduced depression but can correlate with more significant anxiety. The study findings reveal that COVID-19-related racism may lead to stigma consciousness, race- and racism-based stress, anxiety, and depression. The study contributes to the literature by connecting theories on mental health effects of racism, as well as by distinguishing the links between different forms and intensities of racism and mental well-being, rather than treating all racism as uniform. Considering the detrimental effects on mental health, public policies must confront and address racial prejudice and discrimination that individuals from marginalized communities encounter, particularly during times of crisis.

Keywords: race stress; racism stress; minority stress; social determinants of health; stigma consciousness; racial trauma; mental health; COVID-19 racism; anti-Asian racism; racism anxiety

1. Introduction

The outbreak and spread of the COVID-19 virus, which was declared a pandemic in 2020, was a global health emergency that led to millions of hospitalizations and fatalities (World Health Organization 2022). Radically disrupting daily routines, social connections, and economies, the pandemic precipitated mental health challenges, including heightened anxiety, depression, and stress levels (Ettman et al. 2020b; World Health Organization 2022). While almost everyone was effected by the pandemic and socio-economic conditions brought by it, individuals of Asian heritage living in multiracial countries faced extra hardships and stressors (Dhanani and Franz 2020; Jeung et al. 2021; Stop AAPI Hate 2023; World Health Organization 2022). The association of Chinese and Asian people with the origins and spread of the virus revitalized the “Yellow Peril” rhetoric, portraying Asians as a threat to the well-being of the entire world (Jeung et al. 2021). Following the historical patterns of the emergence of anti-Asian attitudes during health crises, such as during the SARS (severe acute respiratory syndrome) and H1N1 influenza (swine flu) epidemics, Asian individuals and cultures were derogatorily labeled as high risk for diseases (Ertorer 2024; Lantz et al. 2023). This scapegoating and stigmatization led to an increase in incidents of personal and group racism targeting Asian individuals and communities. Reports verify that Asian populations in the United States and Canada experienced a higher incidence of prejudice and racial discrimination related to COVID-19 than other ethnic groups (Liu et al. 2020; Statistics Canada 2020).
In the United States, official law enforcement data indicate that in 2020, the sixteen most populous cities experienced a 145% increase in crimes motivated by anti-Asian bias (Center for the Study of Hate and Extremism 2021). Between 2020 and 2022, Stop AAPI Hate, the monitoring center established by the civil rights alliance, documented 11,409 instances of hate incidents (Stop AAPI Hate 2023). The reports shared by the center detail a variety of incidents, including verbal attacks, physical violence, and violations of civil rights, such as discrimination regarding employment and housing or the denial of services (Yellow Horse et al. 2022).

A large body of scholarly research has documented xenophobic attitudes and conduct aimed at Asian individuals during the COVID-19 pandemic (Ertorer 2024; Haft and Zhou 2021; Lee and Waters 2021; Ruiz et al. 2020). National surveys in the United States have revealed that Asians increasingly encountered instances of racism following the onset of the COVID-19 pandemic (Dhanani and Franz 2020; Wu et al. 2021), with more than a quarter of Asians reporting minor daily offenses or insults and one in six reporting unfair treatment within prominent societal institutions (Le et al. 2020). Other studies have indicated that Asian Americans increasingly experienced vicarious racism, if not interpersonal racism, a phenomenon where individuals are affected by observing or learning about racist acts directed at members of their own racial or ethnic community, thereby living with the fear of victimization (Chae et al. 2021; Croucher et al. 2020; Lantz and Wenger 2023; Lu and Wang 2022; Yip et al. 2022).

Drawing upon Allport’s theory of racial prejudice (Allport 1979), Ertorer (2024) created a typology to classify the diverse forms and severities of racism aimed at individuals perceived as Chinese or Asian during the COVID-19 pandemic. According to this classification, the severity or effect on targeted individuals varies by the type of racist expression. Anti-Asian xenophobia and racism are manifested as one of the following forms: antilocution, verbal harassment, avoidance, virtual harassment, discrimination in social interactions, physical harassment, and discrimination regarding fundamental rights and opportunities. Ertorer (2024) identifies antilocutions, which refer to racist comments about a group without directly targeting an individual (e.g., making comments about the hygiene of Chinese meat markets), as the least severe form of racist expression. On the other hand, verbal harassment involves addressing people with hostile language and phrases such as “You people” and “bat eater,” and is considered more severe than antilocution. The next negative expression in Ertorer’s typology is avoidance and refers to distancing oneself from members of certain groups due to upheld prejudices, such as people walking away quickly or sitting away from Asian individuals due to the fear that they may be carriers of the virus. Moreover, during the pandemic, marked by periods of social isolation and quarantine, people increasingly used virtual platforms to express their anti-Asian prejudices. Consequently, virtual harassment became a common form of xenophobic expression. More severe forms of anti-Asian racism were observed during social interactions with Asians reporting racial discrimination in group settings, workplaces, businesses, and procedures, as well as experiencing physical violence and threats. The most severe form of racism faced was discrimination regarding fundamental rights and opportunities, such as denial of housing and employment.

Researchers have not only noted increased reports of racism and discrimination amid the COVID-19 pandemic, but also identified links between experiences of racial discrimination and the severity of mental health symptoms in Asian American and Pacific Islander communities in the United States. The prevalence of racism and the perpetual threat of being subjected to it are found to be significant stressors that can contribute to the onset of mental problems, such as anxiety and depression. In this regard, perceived racial discrimination has been correlated with the severity of anxiety (Haft and Zhou 2021; Lee and Waters 2021), depression, and distress (Cheah et al. 2020; Huynh et al. 2023; Liu et al. 2020; Oh and Litam 2022; Wenger et al. 2022; Yang et al. 2020; Yoo and Lee 2005).

As demonstrated by these studies, xenophobia and racism aimed at people of Asian descent intensified significantly during the COVID-19 pandemic, leading to potential mental distress for this population. In this vein, the current paper endeavors to contribute
to the literature on the mental health effects of racism on targeted individuals. Specifically, the goal is to deepen our understanding of the impact of COVID-19-based anti-Asian racism on the mental well-being of Asian American individuals.

Employing empirical research with a sample of individuals of Asian descent residing in Western New York (WNY), United States, this study aims to raise awareness of COVID-related racism in the region and its potential effects on the mental well-being of the community by sharing reports with local authorities and civil organizations. These entities can then implement effective measures to counteract the impact of racism. In addition to the applied research objectives rooted in public sociology, this study seeks to contribute theoretically to the field, first by establishing a connection between several theories and concepts that explain the mental health effects of racism on minority populations. Second, this study furthers the existing literature by articulating how different forms of racism and discrimination can influence anxiety and depression. As explained above, Asian Americans faced various forms and intensities of racism and discrimination during the pandemic, including vicarious (indirect) racism, verbal abuse, avoidance, and harassment, both physical and virtual, as well as discriminatory practices within businesses, social spheres, and opportunities, and discrimination regarding fundamental rights. This study refrains from presuming a uniform effect of various forms of racism and discrimination on mental health. It scrutinizes the distinct relationships between different types of racial discrimination and specific mental health outcomes, particularly anxiety and depression (e.g., vicarious racism and anxiety). This is achieved by analyzing the experiences of Asian Americans who faced racial discrimination and their self-reported symptoms of anxiety and depression.

The subsequent section of the paper outlines the theoretical framework that elucidates the link between a racist and hostile environment and mental health. This section makes a theoretical contribution to the field by introducing a comprehensive framework that combines and arranges the main theories and concepts in a sequence. Then, the methodology and results of the empirical study are presented. The discussion section synthesizes the key findings from current and previous research, incorporating theoretical perspectives, and underscores the importance of examining the different connections between types of racism and mental well-being. The conclusion section provides a summary, limitations, and policy recommendations.

2. Theoretical Framework

There are several theories that explain the association between racism and mental health. After giving a brief overview, this section provides a framework that integrates and organizes the main theories and conceptual frameworks in a sequential manner. This approach helps to clearly illustrate the process by which racism impacts mental health. By systematically combining these theoretical perspectives, this paper aims to offer a coherent and detailed explanation of the mechanisms underlying the racism–mental health link.

Minority stress theory (Meyer 1995) explains the unique and chronic stressors faced by stigmatized minorities. Even though it was initially developed to understand the higher incidence of mental health issues among LGBTQ+ individuals compared to heterosexual individuals, it has been expanded to research on racial and ethnic minorities when exploring the impact of racism on mental health (Lei et al. 2022) and exploring minority stressors at the intersection of gender, sexual, racial, and other social statuses (Bowleg et al. 2023; Shangani et al. 2020). Minority stress theory suggests that stigma, prejudice, and discrimination create a hostile and stressful social environment for minority groups, which can affect their physical and mental health in the long term (Meyer 1995). It posits that a hostile environment is vital to the heightened incidence of stress and mental health issues among minority groups. Members of stigmatized minorities may face day-to-day encounters with bias and discrimination, which can range from overt acts of intolerance to subtle forms of exclusion.

According to minority stress theory (Meyer 1995), the environmental stressors stigmatized minorities face can be categorized as distal or proximal. Distal stressors include
tangible experiences like discrimination, rejection, and violent events that are overt and can be confirmed by others. Proximal stressors, on the other hand, are related to personal perceptions and experiences, including the anticipation of discrimination or the absorption of negative societal attitudes (like internalized racism or homophobia). The anticipation of experiencing rejection and discrimination can be a source of stress, even if direct discrimination is not encountered. Additionally, the stress of hiding one’s minority status (e.g., having Chinese origins) can contribute to the overall burden of minority stress. Factors like effective coping strategies and robust social support networks can play a role in lessening the effects of minority stress. This type of stress is considered chronic, as it originates from enduring social and institutional structures and practices (Meyer 1995).

Carter (2006) suggests that encounters with prejudice, discrimination, or violence cause stress and harm to an individual’s emotional and mental well-being, which he refers to as race-based traumatic stress. Individuals may experience it directly through personal encounters with racism or indirectly through shared experiences within their racial group, including media coverage of racially motivated violence or discrimination. Comas-Díaz and colleagues (Comas-Díaz et al. 2019) refer to the psychological harm that can occur because of actual or perceived racism and discrimination as racial trauma. Racial trauma encompasses the immediate emotional reactions as well as the possible enduring responses to personal, collective, and vicarious experiences of racism, which are akin to the symptoms observed in post-traumatic stress disorder (PTSD), such as hypervigilance to threat, flashbacks, avoidance, suspiciousness, and somatic symptoms (headaches, heart palpitations, etc.) (Comas-Díaz et al. 2019). It is important to note that racial trauma is a cumulative experience, the result of a series of events and societal structures that perpetuate discrimination and prejudice.

Furthermore, frequent encounters and anticipations of racism or discrimination can deplete the mental and emotional reserves of individuals. Smith (2004) refers to the psychological strain placed on racial minorities due to the ongoing stress of facing or navigating microaggressions and discrimination as racial battle fatigue. The symptoms can include psychological stress (e.g., anxiety and depression), emotional exhaustion, cognitive load (e.g., concentration and memory problems), and behavioral changes (e.g., increased vigilance and changes in routines to avoid racist encounters). The concepts of racial trauma, race-based traumatic stress, and racial battle fatigue capture the potential traumatic-level effects of cumulative threats or acts of stigmatization, violence, and discrimination on minorities.

The stigma consciousness framework (Pinel 1999) posits that being cognizant of stereotypes and discrimination against one’s group can erode personal well-being by creating a pervasive sense of dread or the anticipation of experiencing discrimination oneself. Neuroscientific research has corroborated that threats against one’s racial or ethnic group can elicit brain reactions akin to those triggered by direct personal threats (Berger and Sarnyai 2015). The research suggests that indirect experiences of racism, known as vicarious racism, may precipitate mental health issues such as depression, anxiety, ruminative thinking, and heightened vigilance (Chae et al. 2021; Yip et al. 2022). Beyond fear and anxiety, stigma consciousness also involves an awareness of sociocultural stereotypes and biases that target specific groups, potentially damaging the identity and self-perception of those who identify with these groups (Pinel 1999).

Figure 1 below delineates how hostile social environments can detrimentally influence the mental health of racialized minorities by weaving together significant concepts and theories in the field. To begin with human nature, human beings are attuned to their social habitats (House 1977; Jones et al. 2013) and their physical and mental health are influenced by hostile and adversarial social environments (Cokley et al. 2021; Essed 1991; Jones et al. 2013). Hostile milieus produce incidents of racism—both overt and covert—towards specific groups. Exposure to such hostility, whether through direct personal attacks or broader indirect channels such as vicarious experiences, group-level biases, institutional policies, or structural imbalances, leads to an acute awareness and vigilance of racism (Chae
et al. 2021; Yip et al. 2022). This heightened perception of discrimination and prejudice, known as stigma consciousness (Pinel 1999), can emerge even without direct confrontations and can engender widespread fear, anxiety, and race-based traumatic stress (Carter 2006) in individuals. Thus, minority individuals carry the weight of potential personal threats and hatred directed at their community even when they are not personally targeted. The persistent nature and severity of experiences of vicarious and/or in-person racism can eventually lead to racial trauma (Comas-Díaz et al. 2019). In the absence of a transition to a more accepting and supportive social environment, the accumulated strain of these stressors results in racial battle fatigue (Smith 2004)—a deep-seated weariness caused by the continual need to be on guard and counteract racial prejudice.

![Figure 1](image.png)

**Figure 1.** The Impact of a hostile social environment on the mental health of racialized individuals.

Empirical studies have corroborated these links anticipated by theories, consistently finding strong associations between experiences of racism and discrimination and depression, stress, negative affect, anxiety, and overall health in people of various ethnic, immigrant, and religious backgrounds (Budescu et al. 2023; Franco et al. 2021; Lincoln et al. 2021; Oh and Litam 2022). A meta-analysis of 62 empirical studies identified a consistent link between experiences of discrimination and adverse mental health outcomes among Asian Americans (Gee et al. 2009). Another study found that perceptions of racial discrimination were associated with increased psychological distress, suicidal thoughts, anxiety, and depression among Asian American and Latinx college students (Hwang and Goto 2009). Additionally, in the aftermath of September 11, reports by Arab Americans indicated a notable increase in psychological distress and a reduction in happiness, along with a drop in overall health, attributed to experienced discrimination (Padela and Heisler 2010).

3. The Context of the COVID-19 Pandemic and Its Impact on Mental Health

The pandemic is believed to have exacerbated mental health problems for millions of people in the world. The prevalence of anxiety and depression increased by 25% worldwide (World Health Organization 2022) and by more than three-fold in the United States during the pandemic (Ettman et al. 2020b). Explanations for this increase include multiple stressors induced by the pandemic, such as fear of the virus, grief after bereavement, loneliness, financial worries, and limitations on people’s ability to work, seek support from loved ones, and participate in their communities (Ettman et al. 2020b). According to evolutionary psychology, human beings are naturally inclined to understand, predict, and control their environment (Hoyle and Wickramasinghe 1999; Schaller et al. 2003), and uncontrollable circumstances produce fear, anxiety, distress (Macrae and Bodenhausen 2000), and depression (Seligman 1972). The COVID-19 outbreak was one such episode that introduced...
risk, unpredictability, and restrictions (such as social isolation measures, remote work and education, etc.) that created a sense of losing control, lack of agency, helplessness, and anxiety (Ertorer 2024). Research on the mental health effects of epidemics indicates that the perceived risk of contracting the disease and longer durations of quarantine are associated with an increase in depressive and PTSD symptoms (Hawryluck et al. 2004).

Moreover, the COVID-19 pandemic created a hostile environment characterized by prejudice, stigma, and stereotypes about the culture and persons of China and Asia. The Chinese government and culture were blamed for the emergence and spread of the coronavirus and perceived as a symbolic threat to the well-being of everyone in the world. The disease was referred as the “Wuhan virus, Chinese virus, or Kung Flu”, and the Chinese people were labeled as “primitive” people eating mice, bats, snakes, and dogs by prominent figures and the media (Ertorer 2024; Esses and Hamilton 2021). Scholars noted a notable rise in xenophobic slurs within the public discourse (Lantz and Wenger 2023) along with an increase in both virtual and physical attacks targeting individuals perceived as “Chinese” (Dhanani and Franz 2020; Le et al. 2020; Lou et al. 2022; Wu et al. 2021).

As previously mentioned, a hostile environment can lead to mental distress for those targeted. The rhetoric that blamed Chinese/Asian people for the current and previous epidemics heightened stigma consciousness and vigilance of racism among Asian individuals (Chae et al. 2021; Yip et al. 2022), resulting in fear, anxiety, and race-based stress within this population. Racial trauma (Comas-Díaz et al. 2019) is experienced by individuals who encounter frequent or severe instances of direct or vicarious racism. Thus, Asian Americans who are susceptible to personal, vicarious, and collective racism are also vulnerable to race-based traumatic stress (Carter 2006), racial trauma (Comas-Díaz et al. 2019), and racial battle fatigue (Smith 2004). According to a report released by the Stop AAPI Hate Center, among Asian Americans who experienced racism, one in five displayed racial trauma (Turton 2021). Moreover, Yang and colleagues (Yang et al. 2023) found that Asian Americans who faced COVID-19-related racism showed significantly higher scores for racial trauma and PTSD compared to Asian Americans who did not.

Corroborating with theory, data collected during the pandemic confirmed high rates of racism-related vigilance and fear of victimization among Asian Americans (Ertorer 2024; Yip et al. 2022). Higher levels of fear of racism and discrimination are associated with increased psychological distress (Huang and Tsai 2023), vigilance, sleeplessness, depression, and anxiety (Yip et al. 2022), highlighting the detrimental effects of such experiences on mental well-being. Moreover, empirical studies have found a direct association between experiences of racism and an increased severity of symptoms related to anxiety and depression in Asian American communities. Through an online survey conducted in the United States, Lee and Waters (2021) found that nearly 30% of the participants reported an increase in perceived racial discrimination since the pandemic, and over 40% reported an increase in anxiety, depressive symptoms, and sleep difficulties. Similarly, based on an online survey of East and Southeast Asian American adults, Huynh and colleagues (Huynh et al. 2022) reported more incidents of interpersonal and vicarious racism during the pandemic compared to before the pandemic. While Asian Americans reported fewer mental health problems than white Americans before the pandemic (Asnaani et al. 2010), Wu and colleagues (Wu et al. 2021) found higher levels of mental disorders amongst Asian Americans compared to whites during the pandemic. After examining a nationally representative dataset from American households, the study concluded that the disparity in mental health between white and Asian populations could largely be attributed to the acute discrimination and stigmatization experienced by Asian Americans and Asian immigrants concerning COVID-19.

Other studies replicated these findings and confirmed the effects of direct (interpersonal and online) and vicarious racism as well as fear of victimization on Asian individuals’ anxiety, depression, distress, and life satisfaction during the pandemic (Cheah et al. 2020; Huynh et al. 2023; Liu et al. 2020; Oh and Litam 2022; Wenger et al. 2022; Yang et al. 2020; Yoo and Lee 2005). The presence of social support, specifically strong interpersonal relation-
ships, was noted as an effective coping strategy that played a substantial role in mitigating
the impact of racism on mental health and protecting against the adverse effects of stressful
situations (Huynh et al. 2023; Lee and Waters 2021; Oh and Litam 2022). However, while
receiving social support can be protective against adverse mental health effects, offering
such support to others may come with potential drawbacks. Huynh and colleagues (Huynh
et al. 2023) found that Asian American women had the greatest odds of psychological
distress due to being the providers of emotional support to others and the burnout from
excessive demands. Researchers have concluded that in addition to navigating COVID-19-
specific stressors, disproportionate burdens of caregiving and emotional support on Asian
women have made Asian American women more susceptible to psychological distress in
comparison to Asian men.

The caregiver role adds to the burden of disease-related stressors and the fear of
victimization, as parents worry not only about themselves but also about their families
(Huang and Tsai 2023). On the other side of the medallion, parents’ experiences of racism,
discrimination, and fear can affect children’s mental health. A study revealed that parents’
direct experiences with racism and discrimination increase the stress levels of their children
(Cheah et al. 2020).

While these empirical studies explore and confirm the link between poor mental health
and experiences of racism, they do not distinguish between the various forms of racism,
assuming all types of experiences lead to similar outcomes. The current paper aims to
address this gap by examining and articulating the varying degrees of associations between
different forms of racism based on their severity, such as avoidance, virtual harassment,
physical harassment, and discrimination.

4. Methods

4.1. Research Objectives and Hypotheses

This study investigates the effects of COVID-19-based racism on the mental health of
Asian American populations. It is important to note that COVID-related stigmatization
and racism were not exclusive to the “Chinese” but were extended to other Asians and
individuals who “look Chinese or Asian.” Therefore, while the sampling was aimed at
people of Asian and Pacific Islander descent, the experiences of COVID-19-based racism
extend to a broader population.

Based on the literature reviewed, this study hypothesizes that racism is negatively
related to anxiety and depression. Thus, Asian Americans who had more encounters
with racism and discrimination are likely to present higher scores (more symptoms) for
anxiety and depression. Additionally, it is hypothesized that demographic variables of
gender, income, place of birth, and citizenship status are related to anxiety and depression
symptoms. Individuals who are foreign-born and do not hold citizenship are more likely
to have anxiety and/or depression, especially during the pandemic when the borders were
closed and “foreigners” were not welcome. The study expects higher levels of distress
and anxiety for women caregivers (Huynh et al. 2023) and higher levels of depression for
individuals with lower wealth (Ettman et al. 2020a) as suggested by the literature.

Furthermore, the current study aims to explore the connections between various forms
of racism and individuals’ anxiety and depression. The existing literature often treats racism
and discrimination as a single, comprehensive variable when examining this relationship.
However, as Ertorer (2024) suggests, the types and intensities of racist manifestations vary
and include indirect/vicarious racism, antilocution, verbal abuse, avoidance, physical and
virtual harassment, and discriminatory practices within businesses, social spheres, and
opportunities. Given that the severity of these experiences can differ, we hypothesize that
their effects on individuals’ anxiety and depression also vary correspondingly.

4.2. Procedures

The study employed a quantitative research design, developing an online question-
naire through Qualtrics software and circulating it via email and social media. The study
population was 18 years old or older Asians and Asian Americans living in Erie and Niagara Counties of Western New York, United States, during the pandemic. Together with local agency partners, we aimed to identify racial/ethnic tensions and raise awareness of the effects of COVID-related racism on Asian communities in the region. Reports from the study were prepared and shared with local organizations.

In Erie County, individuals of Asian American and Pacific Islander (AAPI) heritage make up 4.9% of the population, with the predominant demographic being white individuals at 78%. In Niagara County, the AAPI community represents a mere 1% of the residents, whereas white individuals make up a larger portion at 87% (US Census Bureau 2023). Despite not being representative of the entire nation, this study seeks to provide meaningful insights into the lived experiences of racial minorities in predominantly white, non-urban environments (Ertorer 2024).

Given the limited and scattered Asian American population in the area, this study adopted a purposive sampling method. In such cases of conducting research on small intersectional identity groups (e.g., racialized immigrants), purposive samples are utilized to prioritize obtaining a sufficiently large sample size to robustly estimate an effect size over design-based representativeness (Klar and Leeper 2019). This method is suitable when the researcher has a clear understanding of the characteristics or attributes they wish to study and aims to select a sample that is representative of those specific traits (Klar and Leeper 2019). Since the aimed population for the study was Asians, Asian Americans, and Pacific Islanders, a thorough list of local Asian and Pacific Islander organizations that operate in the region was assembled. These organizations were then approached through email and invited to participate and to disseminate the survey. Additionally, collaborating entities, the Jericho Road Community Health Center and the Partnership for the Public Good, helped to circulate the survey link among their networks using email and social media platforms.

Participants were informed about the study’s objectives, participant criteria, estimated time to complete the survey, and ethical guidelines regarding anonymity, confidentiality, and the freedom to withdraw on the first page of the survey. After reading the information page, they signed a consent form. No incentives were provided, except for a chance to win one of two $100 gift cards. Participants who opted to enter the draw voluntarily provided their contact information. Their names or contact information were not used in any research findings or reports.

The data collection process occurred in the spring and summer of 2021, following ethical clearance from the Institutional Review Board under the Research Involving Humans (RIB) guidelines. SPSS software was utilized for the quantitative analysis. The research team performed exploratory factor analysis to summarize mental health data by looking for correlation patterns among variables, eliminating redundant items, and creating anxiety and depression measures (Tabachnick et al. 2000). Bivariate correlation analyses were conducted to uncover correlations between variables, and analysis of variance (ANOVA and t-tests) were run to make in-group comparisons.

The limitations of this study include the sampling techniques and geographical area. Due to non-probability sampling and limited geographical area, the study is unable to make inferences about populations. The findings of the study cannot be generalized. Despite these limitations, the purposive sampling technique allowed us to target populations of Asian descent (Klar and Leeper 2019) and gain insights into their lived experiences of racism during the COVID-19 pandemic in predominantly white settings.

4.3. Survey and Measures

The survey comprised questions on sample demographics, experiences of racism and discrimination, and a measure of anxiety and depression. Participants were first asked to identify their race from broad categories (Asian or native Hawaiian/Pacific Islander, black, Hispanic, white, or other). Upon selection, they proceeded to a subsequent question to specify their ethnic identity within the chosen racial category, which, for instance, included options like South Asian, East Asian, Southeast Asian, Caribbean,
Pacific Islander/Hawaiian, European, and other within the Asian category. Respondents could select more than one racial or ethnic identifier if they felt multiple applied to them. Those who identified with multiple racial or ethnic categories were considered multiracial. The survey was aimed at Asian populations but was open to individuals of all racial backgrounds who had an interest in sharing their direct or indirect experiences with racism during the pandemic. However, for the purposes of the current study, only those who identified as Asian or native Hawaiian/Pacific Islander, whether of one or multiple heritages, were included in the analysis. While the participants who did not identify with these categories were excluded from the current study, their responses were analyzed for a comparative study.

This study devised a measure of experiences of racial discrimination that included various types and severities of racism and discrimination as delineated by theory (Ertorer 2024): vicarious racism (antilocution), verbal harassment, other harassment (virtual and physical), avoidance, and discrimination regarding businesses, social interactions, and opportunities. Vicarious (second-hand) racism assessed experiences of witnessing, hearing, or reading about anti-Asian hate and racism. Personal experiences inquired about incidents including being treated as a disease carrier, being subjected to negative stereotypes about food, name-calling, derogatory language, business access denial, online harassment, threats of violence, job and housing discrimination, and exclusion from work meetings. The survey respondents assessed their experiences since COVID-19 began, rating them on a 5-point Likert scale ranging from “never” to “always.” A comprehensive review of scholarly works and reports by non-governmental organizations on racial discrimination was undertaken to ensure content validity. Items for the scale were chosen from a compilation of existing measures on racism and discrimination identified through a literature review, including the everyday discrimination measure by Essed (1991), the perceived ethnic discrimination questionnaire by Contrada and colleagues (Contrada et al. 2001), the racial and microaggression scale by Nadal (2011), and questions from the Stop AAPI Hate Center (Yellow Horse et al. 2022). The items were adapted to the context of the pandemic. Input on the survey’s clarity and relevance was sought from academic experts, NGO partners, and Asian community representatives. The refined scale was pre-tested for readability and conceptual understanding (see Ertorer 2024 for the scale development). The items that related to one form of racism or discrimination were combined to compute a score for that category; for instance, name-calling, derogatory language, slurs, and inappropriate jokes were combined to calculate a score for verbal harassment, and exclusion from social gatherings and work meetings were combined to compute discrimination in social interactions. The reliability scores are vicarious racism $\alpha = 0.790$, verbal harassment $\alpha = 0.837$, avoidance $\alpha = 0.883$, discrimination in businesses $\alpha = 0.841$, discrimination in social interactions $\alpha = 0.816$, discrimination regarding opportunities $\alpha = 0.889$, and harassment $\alpha = 0.894$.

The work and health instrument developed by the World Health Organization was adapted to assess participants’ self-reported mental health. Since the original instrument includes questions on work performance and physical and mental health, only the items that aim to measure mental health were selected (Kessler et al. 2003) for the current analysis. This section of the questionnaire required participants to self-evaluate a range of mental health issues they might have experienced over the past four months, using a Likert-type scale from 1 (never) to 5 (always), with higher scores representing more symptoms and worse mental health. An exploratory factor analysis was performed to examine the structure of the relationships between the measured items, to summarize the data by looking for correlation patterns among variables, and to eliminate redundant and irrelevant items (Tabachnick et al. 2000). A principal component analysis and varimax rotation were incorporated to verify the construct validity (Dwivedi et al. 2006). A scree test and eigenvalues from the reduced correlation matrix were used to determine the number of factors (Fabrigar et al. 1999). The factors with eigenvalues lower than one were eliminated. This method confirms construct validity and adds to the reliability of the instrument (Dwivedi et al. 2006). After discovering commonalities, two factors were produced (see Table 1 for factor
loadings). Seven items loaded onto the same factor as common symptoms for depression; thus, they were combined to obtain a single measure of depression. These are feeling hopeless, worthless, sleepless, restless, effortless, depressed, and no interest/pleasure. Six items loaded onto the second factor, namely feeling nervous, stressed, worried, sad, and unable to control or cope with difficulties, were combined to measure anxiety. One score for overall health was obtained by averaging the scores for the two factors. Both subscales were reliable: depression $\alpha = 0.882$ and anxiety $\alpha = 0.886$. An alpha of 0.91 was obtained for the total mental health measure. The correlation coefficient for the two subscales was significant ($r = 0.573; p$ (two-tailed) < 0.05).

Table 1. Factor Loadings for Mental Health Symptoms.

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Factor 1 (Anxiety)</th>
<th>Factor 2 (Depression)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sad</td>
<td>0.815</td>
<td></td>
</tr>
<tr>
<td>Nervous</td>
<td>0.825</td>
<td></td>
</tr>
<tr>
<td>Stressed</td>
<td>0.540</td>
<td></td>
</tr>
<tr>
<td>Worry</td>
<td>0.740</td>
<td></td>
</tr>
<tr>
<td>Unable to control</td>
<td>0.853</td>
<td></td>
</tr>
<tr>
<td>Unable to cope</td>
<td>0.786</td>
<td></td>
</tr>
<tr>
<td>Restless</td>
<td></td>
<td>0.795</td>
</tr>
<tr>
<td>Hopeless</td>
<td></td>
<td>0.845</td>
</tr>
<tr>
<td>Effortless</td>
<td></td>
<td>0.643</td>
</tr>
<tr>
<td>Worthless</td>
<td></td>
<td>0.554</td>
</tr>
<tr>
<td>Depressed</td>
<td></td>
<td>0.573</td>
</tr>
<tr>
<td>No interest/pleasure</td>
<td></td>
<td>0.768</td>
</tr>
<tr>
<td>Sleep troubles</td>
<td></td>
<td>0.814</td>
</tr>
</tbody>
</table>

4.4. Sample Demographics

This study garnered a sample of 333 individuals from Western New York after removing cases with missing data and responses from those outside the state. Of the study participants, one-third reported being of mixed Asian heritage, while 37% identified as East Asian, 23% as Southeast Asian, and 16% as South Asian. The participants’ ages ranged from 18 to 62 years. Nearly half (47%) identified as male, a slight majority (52%) as female, and 1% as non-binary. In terms of residency status, 58% were U.S.-born citizens. Additionally, 63% held permanent residency either as citizens or green card holders, while 12% were in the U.S. on a temporary basis with visas for study or business. A further 17% were asylum seekers, and 8% chose not to disclose their residency status. The duration of U.S. residence among immigrants varied from 2 months to 28 years, with an average of 7.8 years, and 91% had been living in the U.S. for over a year.

5. Findings

5.1. Experiences of COVID-19-Related Racism

Table 2 presents the percentage of Asians and Asian Americans who experienced different forms of racism and discrimination during the COVID-19 pandemic. The response categories ranged between 1 (have never experienced) and 5 (have always experienced). The categories of 2 (rarely experienced), 3 (experienced a few times), and 4 (experienced often) indicated some experience between the two extremes. To calculate the percentage of participants who experienced one form of racism, response categories other than 1 (never) were combined to include all experiences and frequencies. The mode (most common response) was 4 for vicarious racism, 3 (a few times) for the incidents of verbal harassment and avoidance, and 2 (rarely) for the incidents listed under discrimination and harassment (virtual and physical).
Table 2. Experiences of COVID-19-Related Racism.

<table>
<thead>
<tr>
<th>Types of Racism</th>
<th>Experienced *</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vicarious Racism</strong></td>
<td>95%</td>
</tr>
<tr>
<td>Heard disrespectful terms about Asians</td>
<td>96%</td>
</tr>
<tr>
<td>Witnessed people blaming the Chinese</td>
<td>93%</td>
</tr>
<tr>
<td><strong>Verbal Harassment</strong></td>
<td>85%</td>
</tr>
<tr>
<td>Called me slurs</td>
<td>83%</td>
</tr>
<tr>
<td>Made inappropriate jokes</td>
<td>86%</td>
</tr>
<tr>
<td>Used derogatory language</td>
<td>86%</td>
</tr>
<tr>
<td>Assaulted my diet/food</td>
<td>84%</td>
</tr>
<tr>
<td><strong>Avoidance</strong></td>
<td>83%</td>
</tr>
<tr>
<td>Avoided being in proximity to me</td>
<td>85%</td>
</tr>
<tr>
<td>Acted uncomfortable around me</td>
<td>83%</td>
</tr>
<tr>
<td>Made me feel like an outsider</td>
<td>83%</td>
</tr>
<tr>
<td>Acted as if I was spreading the disease</td>
<td>80%</td>
</tr>
<tr>
<td><strong>Discrimination in Businesses</strong></td>
<td>80%</td>
</tr>
<tr>
<td>Treated me with less courtesy and respect</td>
<td>86%</td>
</tr>
<tr>
<td>Gave me poorer service than others</td>
<td>82%</td>
</tr>
<tr>
<td>Barred me from business</td>
<td>72%</td>
</tr>
<tr>
<td><strong>Discrimination in Social Interactions</strong></td>
<td>72%</td>
</tr>
<tr>
<td>Excluded me from social gatherings</td>
<td>74%</td>
</tr>
<tr>
<td>Excluded me from work meetings</td>
<td>69%</td>
</tr>
<tr>
<td><strong>Discrimination regarding Rights and Opportunities</strong></td>
<td>70%</td>
</tr>
<tr>
<td>I was denied jobs</td>
<td>71%</td>
</tr>
<tr>
<td>I was denied a promotion</td>
<td>74%</td>
</tr>
<tr>
<td>I was denied housing</td>
<td>66%</td>
</tr>
<tr>
<td><strong>Harassment</strong></td>
<td>68%</td>
</tr>
<tr>
<td>Harassed online</td>
<td>74%</td>
</tr>
<tr>
<td>Threatened to hurt me</td>
<td>64%</td>
</tr>
<tr>
<td>Attacked me physically</td>
<td>69%</td>
</tr>
<tr>
<td>Damaged/vandalized my property</td>
<td>66%</td>
</tr>
</tbody>
</table>

Table adapted from Ertorer (2024). * “Experienced” includes individuals who had experienced some form of racism, ranging between “rarely” and “always”.

As seen in Table 1, between 64% and 96% of respondents experienced one form of harassment, ranging from indirect/vicarious forms of racism, such as hearing (96%) and witnessing (93%) stigmatization of Chinese/Asians during the pandemic, to unlawful incidents like physical attacks (69%), threats (64%), vandalism of property (66%), and discrimination regarding businesses (80%) and rights and opportunities (denied jobs, 71%; denied housing, 66%). Vicarious forms of racism, which target groups such as Chinese or Asians rather than specific individuals, emerged as the most prevalent (95%). This includes being exposed to derogatory comments or witnessing racist incidents through media platforms or in conversations with others. The least common forms of racism were harassment (68%) and discrimination regarding opportunities (70%) (Ertorer 2024).

5.2. Mental Health during the COVID-19 Pandemic

The participant responses to mental health issues ranged between 1 and 5 (1—never; 2—rarely; 3—sometimes; 4—often; 5—always), indicating that, while some respondents had not experienced the surveyed negative emotions in the past four months, others consistently did. The most common response for the symptoms (the mode) was 3 (sometimes), except for feeling restless and substance abuse, which had the mode value of 2 (rarely). Table 3 presents the percentage of participants who indicated experiencing the symptoms. The responses of sometimes, often, and always were combined to develop the “experienced” category. Participants reported experiencing feelings such as sadness, nervousness, restlessness, worry, lack of effort, depression, and difficulty in controlling or coping with life’s...
challenges, with feelings of stress and nervousness being the most common (76% and 71%, respectively). They also indicated a loss of interest or pleasure in activities once enjoyed (62%), alongside sleep disturbances (53%). Additionally, 62% of participants reported that mental health issues had adversely affected their relationships and daily activities in recent months. Substance issues involving drugs or alcohol were acknowledged by 17%.

Table 3. Descriptive Statistics for Mental Health Indicators.

<table>
<thead>
<tr>
<th>Mental Health</th>
<th>Experienced *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sad</td>
<td>62%</td>
</tr>
<tr>
<td>Nervous</td>
<td>71%</td>
</tr>
<tr>
<td>Stressed</td>
<td>76%</td>
</tr>
<tr>
<td>Worry</td>
<td>67%</td>
</tr>
<tr>
<td>Unable to control</td>
<td>67%</td>
</tr>
<tr>
<td>Unable to cope</td>
<td>64%</td>
</tr>
<tr>
<td>Restless</td>
<td>62%</td>
</tr>
<tr>
<td>Hopeless</td>
<td>56%</td>
</tr>
<tr>
<td>Effortless</td>
<td>68%</td>
</tr>
<tr>
<td>Worthless</td>
<td>57%</td>
</tr>
<tr>
<td>Depressed</td>
<td>67%</td>
</tr>
<tr>
<td>No interest/pleasure</td>
<td>62%</td>
</tr>
<tr>
<td>Sleep troubles</td>
<td>53%</td>
</tr>
<tr>
<td>MH interfered with life</td>
<td>62%</td>
</tr>
<tr>
<td>Substance use</td>
<td>17%</td>
</tr>
</tbody>
</table>

* “Experienced” includes individuals who had reported experiencing symptoms sometimes, often, or always.

After combining the items (symptoms) for measuring anxiety and depression, mean scores were calculated. The means for the subscales and the overall mental health scale were above the midpoint ($M = 2.96, 2.78, and 2.90$, respectively), indicating that the average respondent experienced symptoms “sometimes” (see Table 4).

Table 4. Average Scores for Anxiety, Depression, and Mental Health.

<table>
<thead>
<tr>
<th>Mental Health</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>2.96</td>
</tr>
<tr>
<td>Depression</td>
<td>2.78</td>
</tr>
<tr>
<td>Overall mental health</td>
<td>2.9</td>
</tr>
</tbody>
</table>

The demographic variables were analyzed statistically to identify disparities among the groups regarding mental health challenges. No significant correlation was found between age and either anxiety or depression. However, a negative correlation existed between income and depression ($r = -0.282; p < 0.001$) and a positive correlation between income and anxiety ($r = 0.119; p < 0.001$). These weak yet significant correlations suggest that, among Asian Americans, those with higher incomes were less prone to depression yet more prone to anxiety symptoms.

Consistent with previous research indicating that Asian American women are more likely to experience psychological distress, this study found that female participants reported significantly higher levels of anxiety ($M = 3.08$) compared to their male counterparts ($M = 2.81; p < 0.001$). Participants who identified as non-binary reported the highest average scores for anxiety and depression symptoms ($M = 3.5$) compared with the other gender categories. However, these differences did not reach statistical significance, which could be attributed to the relatively small number of participants who identified as non-binary within the sample.

The analysis did not find significant differences in mental health symptoms among the ethnic groups except for those of mixed European descent. This biracial group exhibited significantly lower levels of depression compared to Asians who identified as monoracial...
Anxiety and depression levels were comparable across other groups. Factors such as immigration status and pre- and post-immigration experiences can influence mental health. However, the study found no significant differences in anxiety or depression between U.S. citizens (those with permanent status) and non-citizens holding work, study, or asylum seeker permits (those with temporary status). Since the sample did not include individuals who identified as having “no legal permits/statuses,” the study could not assess the impact of undocumented status on mental health.

In terms of birthplace, there were no noteworthy differences in anxiety and general mental health between individuals born in the United States and those born elsewhere. However, American-born participants registered higher depression scores ($M = 2.89$) compared to those born outside of the United States ($M = 2.67$), and the difference was significant ($t(310) = 2.27; p = 0.024$).

When exploring the relationship between substance use and mental health, the findings showed a moderate correlation with depression ($r = 0.460; p < 0.001$) and a weak correlation with anxiety ($r = 0.265; p < 0.001$). These correlations suggest that as mental health difficulties increase, so does the likelihood of substance use.

5.3. Racial Discrimination and Mental Health

Theoretical and empirical evidence suggests a relationship between actual or feared experiences of racial discrimination and mental health outcomes. In line with this, the current analysis investigated the connection between mental health and different forms of racism and discrimination by correlating survey items. The data show that increased reports of all forms of racism are correlated with higher levels of anxiety and depression (see Table 5). When incidents of vicarious racism, verbal harassment, physical and virtual harassment, avoidance, or discrimination regarding businesses, social interactions, and opportunities increase, anxiety and depression levels of targeted individuals are also likely to increase. However, there is a variance in the strength of these correlations for anxiety and depression. Specifically, the weakest correlation with anxiety was observed in instances of discrimination during social interactions, like being left out of social events ($r = 0.262; p < 0.001$). The strongest associations with anxiety were found for avoidance and verbal harassment, which are the most common forms of racism ($r = 0.557$ and $0.522; p < 0.001$). This is in line with previous findings indicating that verbal harassment and avoidance are frequent forms of racism, potentially leading to a persistent state of anxiety due to their common occurrence and the likelihood of reoccurrence.

<table>
<thead>
<tr>
<th>Forms of Racism</th>
<th>Anxiety</th>
<th>Depression</th>
<th>Mental Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vicarious racism</td>
<td>0.433 **</td>
<td>0.167 **</td>
<td>0.355 **</td>
</tr>
<tr>
<td>Verbal harassment</td>
<td>0.522 **</td>
<td>0.255 **</td>
<td>0.484 **</td>
</tr>
<tr>
<td>Avoidance</td>
<td>0.557 **</td>
<td>0.310 **</td>
<td>0.535 **</td>
</tr>
<tr>
<td>Discrimination in businesses</td>
<td>0.316 **</td>
<td>0.489 **</td>
<td>0.454 **</td>
</tr>
<tr>
<td>Discrimination in social interactions</td>
<td>0.262 **</td>
<td>0.477 **</td>
<td>0.425 **</td>
</tr>
<tr>
<td>Discrimination regarding opportunities</td>
<td>0.420 **</td>
<td>0.300 **</td>
<td>0.453 **</td>
</tr>
<tr>
<td>Harassment</td>
<td>0.317 **</td>
<td>0.381 **</td>
<td>0.417 **</td>
</tr>
<tr>
<td>Overall racism</td>
<td>0.482 **</td>
<td>0.400 **</td>
<td>0.555 **</td>
</tr>
</tbody>
</table>

** $p < 0.001$.

Discriminatory experiences in business settings and during social interactions have been linked to a significant increase in depression ($r = 0.489$ and $r = 0.477$, respectively; $p < 0.001$). Such experiences may include being denied service, treated with less courtesy, barred from establishments, or excluded from social or professional events, acting as triggers for depressive symptoms. Those who endure these forms of discrimination may doubt their value or feel the need to go to greater lengths for acceptance, potentially leading to feelings of exhaustion and agitation, which are symptoms of depression. This finding
underscores the profound impact that discrimination can have on an individual’s mental health. Additionally, depression shows only a weak correlation ($r = 0.167; p < 0.001$) with vicarious experiences of racism, supporting the idea that racism targeting the entire group has a less pronounced effect on individual depression compared to personal experiences of racism (Schmitt et al. 2014).

6. Discussion

A widespread occurrence of stress, anxiety, and depression has been noted as a typical psychological response to the COVID-19 pandemic among the general population (Rajkumar 2020; World Health Organization 2022). Nevertheless, individuals of Asian, especially Chinese, heritage encountered an extra dimension of stress over and above the widespread socio-economic challenges: anxiety and fear of facing stigma, hatred, and racial discrimination (Huang and Tsai 2023; Lou et al. 2022). In other words, they experienced race- and racism-related stress (Carter 2006; Comas-Diaz et al. 2019). The emergence of the pandemic led to an increase in negative sentiments and actions towards Asians, causing a surge of racism stress and anxiety among Asian minority groups (Lee and Waters 2021).

In the wake of revelations concerning the origins of the virus, hostilities escalated, and individuals of Chinese and Asian descent faced direct, collective, and indirect (vicarious) forms of racism (Gee et al. 2009; Huynh et al. 2022; Le et al. 2020). Blaming Chinese individuals and their cultural practices in discussions by media sources, political figures, and public personalities contributed to an atmosphere of xenophobic sentiments. In addition to the stigmatization, the news about the racial attacks on Chinese and other Asian individuals and their businesses was widely shared by the media, raising stigma consciousness (Pinel 1999) and race anxiety about being the potential next victim. A study found that stigma consciousness made Asian Americans more aware of their own risk of potential victimization and feel vulnerable and unsafe (Lim 2009). Another study noted that the pandemic connected to COVID-19 intensified adverse emotional responses among individuals with Chinese ancestry, increased their anxiety about cross-cultural engagements, and amplified their anticipation of potential discrimination (Lou et al. 2023).

The findings of this study reveals that the social climate exacerbated by the COVID-19 pandemic intensified minority stress (Meyer 1995) among Asian Americans, who have been confronting distal stressors like exclusion, discrimination, and violence, as well as proximal stressors, including the fear and anticipation of racism and possibly internalizing negative biases about their community. Navigating an environment rife with vicarious, personal, and systemic racism and discrimination heightens stigma consciousness and contributes to race-related anxiety and depression.

As hypothesized, anxiety and depression symptoms are associated with experiences of real and anticipated racism. The impact of racial discrimination on mental health can vary depending on the sociodemographic factors, as well as the form and severity of the discrimination experienced. Previous research in the United States has shown a consistent link between lower income and a greater likelihood of depression (Dunlop et al. 2003; Ettman et al. 2020a). Moreover, the mental health impacts of discrimination have been noted to be more severe for those in disadvantaged positions compared to those who are better off (Schmitt et al. 2014). This study confirms these findings concerning depression with a negative correlation score but presents a contrary, positive correlation with anxiety. The likelihood of higher anxiety levels among those with higher incomes may stem from a heightened sense of financial threat (Ettman et al. 2020a), especially given that over half of the participants of the study experienced layoffs or reduced working hours during the pandemic. Higher-income individuals may have more financial assets at stake, potentially heightening their sense of threat due to the economic uncertainty of the pandemic. A Canadian study that associated financial threats with increased adverse effects among Asian Americans during the pandemic (Lou et al. 2023) corroborates this theory.

Consistent with previous research, female participants reported significantly higher levels of anxiety than male participants. While the current study has no data on the child
or elderly care responsibilities of the respondents, previous research attributes this gender gap to the disproportionate share of caregiving responsibilities and emotional support that Asian women often assume, along with concerns over their children’s potential victimization (Huang and Tsai 2023; Huynh et al. 2023). Moreover, in the analysis across different gender identities, while not statistically significant, it was observed that participants who identified as non-binary reported the highest average scores for anxiety and depression symptoms compared to the other gender categories. According to existing theories, individuals who hold more than one minority status may face compounded forms of discrimination, which could increase the probability of experiencing symptoms of depression and anxiety relative to those facing fewer or no forms of discrimination (Cokley et al. 2021; Denise 2012, 2014; Nilini et al. 2023; Vargas et al. 2020).

While American-born participants showed higher depression scores compared to those born outside of the United States, we found no significant differences in their anxiety or general mental health scores. Studies suggest that U.S.-born racial/ethnic minorities may experience a stronger association between racism and race-related stress (Yip et al. 2008), as well as depression (Tummla-Narra and Claudius 2013), than foreign-born individuals. This could be due to U.S.-born individuals’ stronger identification with being American, making them more cognizant and responsive to racial injustices (Lantz and Wenger 2023; Yoo and Lee 2005). Moreover, perceived foreigner objectification—whereby ethnic minorities are viewed as foreigners or outsiders—has been linked to more significant depressive symptoms among U.S.-born Asians, a connection not observed in Asians born abroad (Armenta et al. 2013).

The findings from this empirical study support the theories on the significant effects of direct and indirect experiences of racism on individuals’ anxiety and depression levels. Furthermore, the study contributes to the existing literature by differentiating various forms of racism and their unique correlations with anxiety and depression. Regarding types of racial discrimination, all forms are found to be positively correlated with anxiety and depression, indicating an increase in racism linked to a rise in the levels of anxiety and depression. Still, the strength of the correlations varies. Avoidance and verbal harassment are found to have a stronger connection with increased anxiety, while discriminatory acts in business and social settings are more strongly correlated with depression. Anxiety includes reports of stress, worry, and feelings of a lack of control. The frequencies suggest that avoidance and verbal harassment are the most common forms our participants encounter, meaning they are the most likely to occur. Therefore, those who experience verbal harassment and avoidance may be in a state of continuous apprehension and race-related anxiety and stress in anticipation of such events. Additionally, indirect experiences of racism, such as hearing about racist acts against one’s racial or ethnic group, may increase stigma consciousness and the expectation of discrimination, further exacerbating anxiety and stress related to race and racism. Research has consistently linked vicarious racism with adverse mental health effects (Huang and Tsai 2023; Lou et al. 2022; Yip et al. 2008). Stigma consciousness may persistently affect anxiety levels beyond the direct personal experiences of racism. Experiencing discrimination indirectly, at the level of the group, appears to have a more significant correlation with anxiety than with depression.

The forms of racism that have the strongest correlation with depression are discriminative incidents such as being turned away from services, receiving subpar courtesy, being refused entry to venues, or being left out of social or professional gatherings. Those subjected to these discriminatory acts may question their self-worth or feel compelled to strive harder for societal acceptance, often leading to fatigue and irritability, which are symptoms of depression. Moreover, depression has been found to have only a minor association with indirect experiences of (vicarious) racism, supporting the notion that group-targeted racism does not affect individual depression as strongly as direct experiences of discrimination do (Schmitt et al. 2014).
7. Conclusions

The COVID-19 pandemic introduced a myriad of stressors globally (World Health Organization 2022). However, its economic, social, and psychological repercussions may not have been uniform across different groups. Asians and individuals of Asian heritage living in multicultural societies likely felt a significant impact due to experiences of bias, stigmatization, scapegoating, and racially motivated aggression. Minority stress theory posits that such stigma and prejudice contribute to a hostile and stressful environment for Asian minorities, detrimentally affecting their mental health. This stressful environment may create race-based stress and anxiety, with the potential of turning into racial trauma if hostile encounters persist and accumulate (Comas-Díaz et al. 2019; Litam 2020).

The current study examined the links between anxiety and depression symptoms, demographic factors, and various forms of COVID-19-related racism and discrimination. It discovered that individuals born in the United States and female individuals tend to report worse mental health outcomes than their foreign-born and male counterparts, respectively. When it comes to economic factors, there is a negative correlation between income and depression, but a positive correlation between income and anxiety. This study found varying degrees of correlations between different forms of racism. There seems to be a correlation between all forms of COVID-19-related racism, including vicarious racism, verbal harassment, other harassment, avoidance, discrimination in social relations, discrimination in businesses, discrimination regarding opportunities, and mental health indicators of anxiety and depression, but the strengths vary, while avoidance and verbal harassment present a stronger connection with anxiety, and facing discrimination in business and social settings shows a stronger correlation with depression. The insights from this research are vital for the creation and execution of successful anti-racism measures. Additionally, the study enhances our understanding of the effects of racism by differentiating between different forms of experiences of COVID-19-related racism and their links to anxiety and depression levels.

It is essential to note the limitations of this study. For example, using non-probability and regional sampling methods resulted in an unrepresentative sample, which means that the study’s findings cannot be broadly applied to reflect the experiences of all individuals of Asian descent in the region or across the country. It is critical to consider that the examination of the link between experiences of racism, anxiety, and depression was based on correlational and cross-sectional data analysis, which prevents us from making definitive statements about causation. Future studies could employ a longitudinal approach using a sample representative of the broader population to better understand the causality in this relationship. Additionally, the differences between the survey respondents and the broader Asian population that were not accounted for might have led to a skewed representation of the research outcomes. Individuals who faced racism and/or discrimination during the pandemic might have been more inclined and consequently more likely to participate in the online survey distributed by this research. Although these results do not capture the full spectrum of experiences among Asians in the United States, they offer a window into the real-life experiences and effects.

The mental health repercussions of the COVID-19 pandemic warrant attention within public health policy. Ensuring that members of minority groups have unrestricted access to mental health services, especially during crises, is crucial. This can be done by taking proactive measures during times of crises (e.g., the pandemic or attacks towards specific racial/ethnic groups in society), such as establishing hotlines, crisis intervention services, local community counseling centers, and expanding telemedicine options for mental health care. Providing community-specific assessment tools and support systems is necessary and especially pertinent for Asian communities, given that Asian Americans typically have the lowest rates of mental health service utilization (Misra et al. 2020). Moreover, mental health education and counseling services within schools can support students’ emotional development and address issues early.
Professional organizations who work with racial, ethnic, and immigrant communities (such as social workers, community health workers, mental health counselors, medical professionals, community organizers) play crucial roles in combating racism and its effects on individuals and communities. They can support and empower racialized individuals and communities by providing resources and assistance. For instance, clinicians could specialize and teach strategies tailored to the experiences of racial discrimination. This effort might involve helping clients develop resilience through community support or therapy techniques like cognitive reframing, allowing individuals to view stressful situations from a different perspective. Community workers can identify and encourage protective factors that can mitigate the impact of discrimination, such as a robust support system or a sense of belonging to a community (Schmitt et al. 2014). They can examine risk factors that can increase the vulnerability of an individual or community to the harmful impacts of discrimination, such as existing mental health issues or the lack of social support.

Establishing and maintaining community centers is crucial for providing vital social support and resources to racial and ethnic communities grappling with racism. These initiatives can foster a sense of belonging, boost self-esteem, and strengthen resilience, while also increasing awareness about the harmful effects of racial discrimination across society. Moreover, they act as intermediaries between their communities and mainstream society, facilitating the reporting of racial issues and incidents and enabling access to government resources. These centers also contribute community-based data and needs, thereby informing social policies.

Public policy needs to tackle the hostility and discrimination faced by targeted groups. It starts with political leaders setting up goals that eliminate and punish racism and implementing policies that foster integration and pluralism. Such overarching frameworks would delineate boundaries for both individual and group conduct. Moreover, considering the importance of stigma consciousness and its link to racial stress and trauma, it is crucial to launch public campaigns and educate the public about how stereotypes are perpetuated in media and popular culture, and to facilitate workshops, seminars, and online resources that teach media literacy skills. The media and public figures, including political leaders and influencers, play a critical role in dispelling stereotypes and promoting constructive dialogue through their communication. Therefore, it is essential for the media coverage of significant events involving racialized communities to provide thorough context, present counter-stereotypical portrayals, encourage empathy and understanding, and incorporate statistical data that counter misconceptions about racialized communities.

Moreover, given the susceptibility of minority groups in the United States, fostering support and unity among these groups is crucial in addressing the social repercussions of both existing and emerging viruses.

**Funding:** This research was funded by the Canisius University Arts and Sciences Dean’s Research Grants [Summer 2021 and Summer 2022]; National Endowment for the Humanities Innovation Grant [2022]; and Canisius Earning Excellence Program [2021, 2022, and 2023].

**Institutional Review Board Statement:** The study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of Canisius University (IRB 2021-22 #38, 17 December 2021) for studies involving humans.

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** The dataset generated and analyzed during the current study is not publicly available due to ongoing analysis and unpublished data but are available from the corresponding author on reasonable request.

**Conflicts of Interest:** The authors declare no conflict of interest.
References


**Disclaimer/Publisher’s Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.