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# **BLOW**

A LONGITUDINAL STUDY

OF THE WELLBEING

OF FOUR ORTHODOX

COMMUNITIES DURING THE

COVID-19 PANDEMIC IN 2020

by
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The Center for Communal Research, founded in 2018, advances the Orthodox Union's obligation to better understand and serve the Jewish community.

The Center is dedicated to the pursuit of a rigorous, responsive and responsible research and evaluation agenda.

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# Foreword by Rabbi Moshe Hauer

#### Executive Vice President of the Orthodox Union

The study you are about to read tells a good story. It does not tell the whole story.

It does not tell the story of poorly organized or overwhelmingly crowded and splintered Jewish communities. It does not tell the story of the individuals who have not affiliated with or have become disenfranchised from the shul community. It does not sufficiently tell the stories of the singles in our communities, and does not sufficiently expose negative trends that have appeared in other studies and settings in areas such as addictions and domestic abuse. And it does not tell the stories of those Orthodox communities that were more profoundly affected – financially and physically – by the pandemic.

But it tells the important and good story of how four well-organized Orthodox Jewish communities and their members fared during the COVID-19 Pandemic. It is a good story because these communities fared relatively well physically, religiously, emotionally, and financially. And it is a good story because it demonstrates how the structure and values of those communities protect and build the strength and resilience of its members.

Social science research has identified the core contributory elements of resilience, and they match up perfectly with the values and structures of our religious communities. Resilience is strengthened by supportive relationships with family, friends, and community; by measured and modulated responses to dramatic events; by living with a higher sense of purpose that sees beyond the specifics of changed circumstances; and by faith in a present G-d.

No community effectively shares these values with all its members. There are lonely and invisible individuals everywhere, and not every shul-goer has a calm, consistent, purposeful, and faithful mindset. But these are the values emphasized and celebrated in our communities, and this is a good story because it seems to show that to a significant extent the support systems are working, and values are being absorbed.

It also tells the good story of how – despite their particularly elevated cost-of-living – these communities have positioned themselves for a significant degree of financial stability and have chosen to respect the science in the pursuit of public health.

There is much more to the story, as you will read in the pages that follow, including both surprises and confirmations. It is our task and the essential purpose of this and all our studies to ensure that both the told and the untold stories strengthen and clarify our focus and direction as we plan and develop our future efforts.

Overall, this study's positive findings regarding the tangible benefits of communal life have motivated us to encourage and assist communities in their efforts to return to and to strengthen their synagogues, and to explore how the sheltering and nurturing communal structure can be made even more embracing and inclusive.

We pray for a speedy end to the pandemic, and for the courage and commitment to emerge from it as a wiser, stronger, and more caring community.

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# Preface by the Authors

"I want the OU to have an aversion to management by anecdote." That was the vision that the OU's former Executive Vice President, Allen Fagin, shared at the founding of the Center for Communal Research. With all the OU's projects, initiatives, and efforts to support and sustain a thriving Jewish community, he maintained that a better understanding was required of the communities served and the OU's impact upon them. A research agenda was required to enable the identification and establishment of our collective strengths and challenges. Data was needed.

There has been perhaps no recent crisis as complex and disruptive as the COVID-19 pandemic which began in early 2020. To navigate the challenges catalyzed by the pandemic, to better evaluate and refine the polices and adaptations, we needed to swiftly take the pulse of the community, to better understand people's experiences. What you'll find in the pages to follow is our efforts to meet that need.

We are profoundly grateful to the synagogue rabbis, lay leaders, and administrative staff who allowed us to distribute our survey to their members. Thank you to Anshei Shalom, Bais Torah U'Tefillah, Beth Jacob, Chabad of West Hempstead, Eitz Chayim of Dogwood Park, Ohr HaTorah (Atlanta), Ohr HaTorah (Dallas), Shaare Tefilla, Young Israel of New Rochelle, Young Israel of Scarsdale, and Young Israel of West Hempstead.

We have a stellar team of professionals and lay leaders at the OU who supported us in this project. We want to express our gratitude to Miriam Braun, Rachel Sims, Amanda Levy, Rabbi Moshe Hauer, Rabbi Dr. Josh Joseph, and Moishe Bane. We especially want to thank our colleagues Adina Bankier-Karp, Rebecca Esses, and Barak Hagler, whose material contributions to this analysis are reflected in the following pages.

Acharon acharon chaviv, we thank the men and women who completed our surveys. We are grateful for their willingness to share their experiences, and we hope this report does justice to their trust in us.

Our gratitude notwithstanding, the authors of this report take full responsibility for its contents.

# Meet the Authors



**MICHELLE SHAIN**, the Assistant Director of the Center for Communal Research, is a social scientist who combines academic expertise in policy research with a passionate commitment to the wellbeing of the Jewish people. Her primary research focus is the intersection of religion, gender, and family formation. Before joining the OU, Dr. Shain spent ten years as a researcher at Brandeis University's Cohen Center for Modern Jewish Studies. Dr. Shain holds a BA in Anthropology and Near Eastern & Judaic Studies from Brandeis University, an MA from the Avraham Harman Institute of Contemporary Jewry at the Hebrew University of Jerusalem, and a PhD in Social Policy from the Heller School for Social Policy and Management at Brandeis University.



**ELISHA PENN** is an Associate Researcher at the Center for Communal Research. Elisha joined the Center in the summer of 2019 after graduating from Brandeis University with a BA in Economics and Near Eastern & Judaic Studies. At the Center, Elisha's focus is quantitative analysis and survey construction. He is interested in exploring how economics and the financial profile of the Jewish community impact religious and communal life.



MATTHEW WILLIAMS is the founding Director of the Center for Communal Research. He joined the OU after serving as the Managing Director of the Berman Jewish Policy Archive, an open-access online library and advisory group for Jewish professionals and lay leaders. He has conducted an array of research projects, developed strategic plans, and guided the design, execution, and evaluation of programs for a variety of Jewish and non-Jewish institutions, ranging from day school kindergarten classrooms to philanthropic foundation boardrooms. He holds degrees in Art History, English, and Jewish Studies from Yeshiva University's Honors program and was recognized as the Outstanding Honors Program Scholar and a Point of Light upon graduation. He received an MA in History and Public Policy and is currently finishing a PhD in Education and History with a concentration in Jewish Studies from Stanford University. His research focuses on Orthodox outreach in North America and Israel. Williams is an alumnus of the Wexner Graduate Fellowship, as well as a former Jim Joseph Fellow in Jewish Education, a summer fellow at the Katz Institute for Advanced Judaic Study, a Mellon Initiative Scholar at Yale University, and a visiting scholar at New York University, the University of California Irvine, the College of Charleston, and Yeshiva University.

# **Executive Summary**

As the effects of first wave of the coronavirus pandemic began to be felt throughout the United States, the Orthodox Union (OU) mobilized to support its community in a variety of ways. To best direct that support, the OU needed to better understand the lives of its constituents amidst this challenging period.

Out of that expression of care came a longitudinal study, the Community Portrait Study (CPS), that sought to explore the lives of Orthodox Jewish communities in such a way as to better inform our decision-making processes, specifically around three core and evolving issues: religious experience, mental and physical health, and financial wellbeing. The Center for Communal Research does not yet have the capacity to draw a probability sample of all American Orthodox Jews (that is currently under development); as a pragmatic alternative, we focused on four communities in the hope that they would serve as a bellwether of a kind.

The CPS tells the story of the Orthodox Jewish communities of Atlanta, Dallas, New Rochelle & Scarsdale, and West Hempstead during the COVID-19 pandemic. CPS respondents do not represent all American Orthodox Jews—for example, they do not reflect the experiences of Orthodox Jews in densely populated communities like Borough Park, Williamsburg or Crown Heights. At the same time, because of its longitudinal nature, the CPS reveals a lot about how the ebb and flow of COVID-19 case rates and accompanying state policies affected Orthodox Jews in suburban, middle-class communities.

The findings were surprising and enlightening.

CPS respondents reported working conscientiously to mitigate the spread of COVID-19 by staying home, avoiding social gatherings, maintaining social distance, and wearing masks. Despite these efforts, CPS respondents in all four communities seem to have contracted the COVID-19 virus at higher rates than their neighbors. We suspect this is because CPS respondents, like other Orthodox Jews, have larger-than-typical family sizes—and people living in larger households have a dramatically higher risk of COVID-19 infection.

In terms of how the pandemic affected the four communities beyond case rates, we do not have "baseline" measures from the CPS respondents from *before* the pandemic. Rare is the community that gathers data in anticipation of a pandemic. The CPS can therefore only assess how respondents changed *during* the pandemic.



Nevertheless, the findings of the CPS were remarkably positive and encouraging in all three areas we set out to investigate.

## Religion

Overall, CPS respondents were satisfied with how their shuls responded to the COVID-19 outbreak. Throughout the study period, CPS respondents remained happy to be part of the Orthodox community. Religiously, although the pandemic lowered minyan attendance, respondents had consistent and positive feelings and thoughts about Shabbat, existential meaning, and G-d.

#### Mental health

In terms of mental health and wellbeing, we found stability in levels of depression and anxiety, perceived stress, overall loneliness, alcohol consumption, and binge drinking. As the local COVID-19 case rate went up, CPS respondents exercised more frequently, perhaps because they had more free time.

#### Financial situation

As a group, CPS respondents had very high levels of educational attainment and household income, and they reported that they were managing well financially. There was little substantive change in how respondents were managing financially over the study period.

Why were Orthodox Jews living in these four communities largely insulated from the harmful effects of the pandemic? The data suggest that these individuals had two sets of protective factors working in their favor:



High socioeconomic status.



Religious resources, including tools for coping with stress and reduced existential uncertainty.

While all Orthodox Jews are likely to be sustained and protected by their faith, only some Orthodox Jews have the protection offered by high socioeconomic status. The relative importance of these two protective factors in insulating these four communities is an enduring question.

Finally, the CPS highlights a serious absence of baseline knowledge about the Orthodox Jewish community in general; research is often commissioned in response to a problem, rather than as a matter of course. Moving forward, the Center for Communal Research aims to collect baseline data in order to more holistically contextualize the findings of discrete studies like this one.

# Introduction: Four Orthodox Communities Experience a Pandemic

The COVID-19 virus originated in Wuhan, China, in December 2019 and was declared a global pandemic on March 11, 2020. As of July 5, 2021, there have been over 34 million confirmed cases of COVID-19 in the United States, claiming over 610,000 American lives. Total COVID-19 cases in the United States, including unconfirmed cases, are estimated at 114 million.

As a caring organization, the Orthodox Union wanted to understand the impact of the coronavirus outbreak on the Orthodox Jewish community in the United States. We had three major questions:

# 1. Religion

How did Orthodox Jews' religious behaviors, religious beliefs, and identification with Orthodoxy change, if at all, during the coronavirus outbreak?

*Prior research tells us:* Perhaps counterintuitively, research suggests that COVID-19 is having a positive effect on religion among the general public. Google searches about prayer were over 50% higher in March 2020 compared to February 2020.<sup>4</sup> In April 2020, 24% of U.S. adults said that their religious faith had been strengthened by the coronavirus outbreak, as opposed to 2% who said that it had been weakened.<sup>5</sup>

### 2. Mental health and wellbeing

How did the overall emotional, psychological, and social wellbeing of Orthodox Jews change, if at all, during the coronavirus outbreak?

*Prior research tells us:* Systematic reviews of the evidence have found that the COVID-19 pandemic reduced psychological wellbeing and increased anxiety, depression, stress, and disturbed sleep among the general public.<sup>6</sup> People younger than 40 years old were especially vulnerable, while older adults had a more optimistic outlook and better mental health.<sup>7</sup> A large study of U.S. Jews confirmed that those ages 18-34 reported coping less well during the pandemic than older generations.<sup>8</sup>

### 3. Financial situation

How did the financial situation of Orthodox Jews change, if at all, during the coronavirus outbreak?

*Prior research tells us*: The COVID-19 pandemic's economic impact was felt most acutely by the most vulnerable Americans. Between February and April 2020, 10% of Americans between the ages of 25 and 54 lost their jobs; the employment rate for that age group fell to its lowest point since 1975. By the end of September 2020, employment levels in the highest paid quartile had reached pre-pandemic levels, while jobs of those whose wages are in the bottom quartile were still down 20% from the start of 2020.9 The S&P 500, a stock market index whose performance primarily affects wealthier Americans, fully recovered its February 2020 losses by September 2020 and has continued to rise since. <sup>10</sup>

Rather than attempt a resource-intensive study of a probability sample of all U.S. Orthodox Jews, we chose to focus on four Orthodox communities around the United States:

- New Rochelle & Scarsdale in Westchester County, NY
- West Hempstead in Nassau County, NY
- Toco Hills neighborhood of Atlanta in DeKalb County, GA
- North Dallas area of Dallas in Dallas County, TX

The COVID-19 Community Portrait Study (CPS) tells the story of how members of these four Orthodox communities experienced the pandemic in 2020. The study's findings are helping to inform communal strategies for addressing the community's most pressing needs in the most effective way.

# Method

The CPS was a longitudinal study. We surveyed adult members of 11 Orthodox shuls (synagogues) in four communities at three time points during the COVID-19 pandemic:

- June 30-July 13, 2020
- August 3-24, 2020
- October 12-28, 2020

For member households, including multiple adults, one adult was randomly selected to participate in the study. Response rates to the three CPS surveys were high, two to three times what is typical for survey research:<sup>11</sup>

- Wave 1: 18.0%
- Wave 2: 13.6%
- Wave 3: 13.5%

The final data set contains 1,759 observations from 942 individuals, observed on between one and three occasions.

A complete methodological appendix can be found on our website at research.ou.org/cps



One important caveat – the first CPS survey took place in Summer 2020. We do not have "baseline" measures from the CPS respondents from *before* the pandemic. Thus, we can see how respondents changed *during* the pandemic, but we cannot be certain how much of a departure from "normal" our findings represent.

# **About the Survey Respondents**

CPS survey respondents were divided about evenly by sex:

52% men

48% women

CPS respondents ranged in age from 18 to 96, but as a group they were *older* than the U.S. Orthodox Jewish population (Table 1). The median age of the CPS respondents is 54 years, compared to 40 years for all U.S. Orthodox adults.<sup>12</sup>

Table 1. Age group.

	CPS respondents	U.S. Orthodox Jewish adults. <sup>13</sup>	U.S. Jewish adults <sup>13</sup>	U.S. adults
18-29 years	3%	24%	20%	22%
30-49 years	37%	40%	28%	34%
50-64 years	34%	24%	27%	26%
65+ years	26%	12%	24%	18%
Total	100%	100%	100%	100%

Percentages may not appear to total 100% due to rounding.

The majority of CPS respondents lived in households with four or more people (Table 2). This reflects the high rates of marriage and fertility among Orthodox Jews, <sup>14</sup> as well as the lifestage of CPS respondents.

Table 2. Household size of CPS respondents at Wave 1 (Wave 1 respondents only).

Household Size	CPS Households	All Orthodox Households.15
1 person	7%	10%
2 people	24%	22%
3 people	12%	13%
4 people	16%	14%
5 people	20%	14%
6 or more people	22%	26%
Total	100%	100%

CPS respondents were *very highly educated*, with more than half having a graduate degree (Table 3). Their education attainment far surpassed what is typical for U.S. Orthodox Jews.

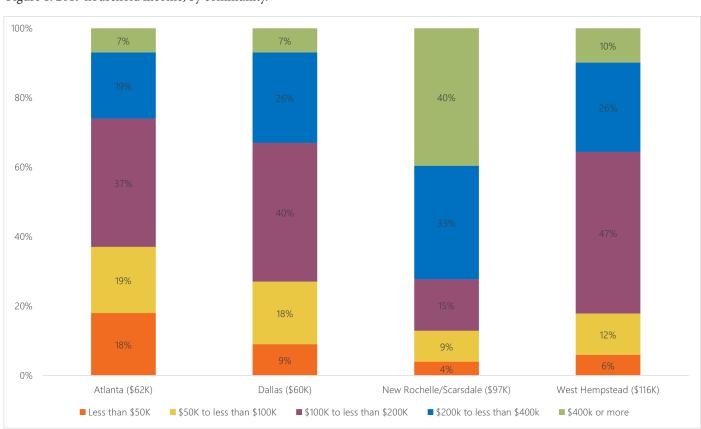
Table 3. Educational attainment.

	CPS respondents	U.S. Orthodox Jewish adults. <sup>16</sup>	U.S. Jewish adults <sup>16</sup>	U.S. adults <sup>17</sup>
Less than bachelor's degree	8%	61%	42%	67%
Bachelor's degree	31%	22%	30%	21%
Graduate degree	62%	17%	28%	12%
Total	100%	100%	100%	100%

Percentages may not appear to total 100% due to rounding.

CPS respondents also had very high incomes. More than half of CPS respondents reported household incomes of \$100,000 or more in 2019 (Figure 1). In New Rochelle & Scarsdale, fully 73% of respondents had household incomes of \$200,000 or more.

Figure 1: 2019 household income, by community. 18



The proportion of high income earners among CPS respondents was also higher than what is typical for U.S. Orthodox Jews (Table 4).

Table 4. Proportion earning \$100,000 or more.

CPS respondents.19	76%
U.S. Orthodox Jewish adults.20	42%
U.S. Jewish adults <sup>20</sup>	34%
U.S. adults. <sup>21</sup>	34%

#### THE BOTTOM LINE WHEN IT COMES TO SURVEY RESPONDENTS

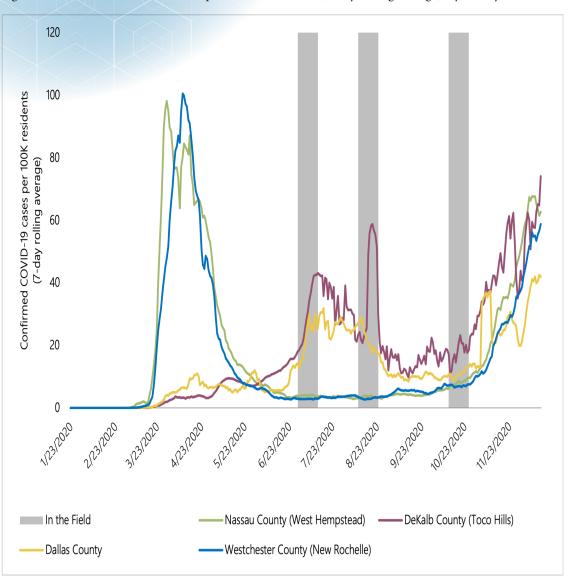
The CPS tells the story of Orthodox Jews living in four comfortably middle-class, suburban communities. Compared to all U.S. Orthodox Jewish adults, CPS respondents were somewhat older, including many middle-aged people with children at home. CPS respondents were also highly educated, high income earners.

# **COVID-19 Cases and Mitigation Efforts**

One of the United States' earliest coronavirus clusters centered around one of the shuls that participated in the CPS: the Young Israel of New Rochelle. Local schools, houses of worship, and other large gathering places were closed on March 10, 2020, as the New York Governor Andrew Cuomo placed a "containment area" around the shul.<sup>22</sup>

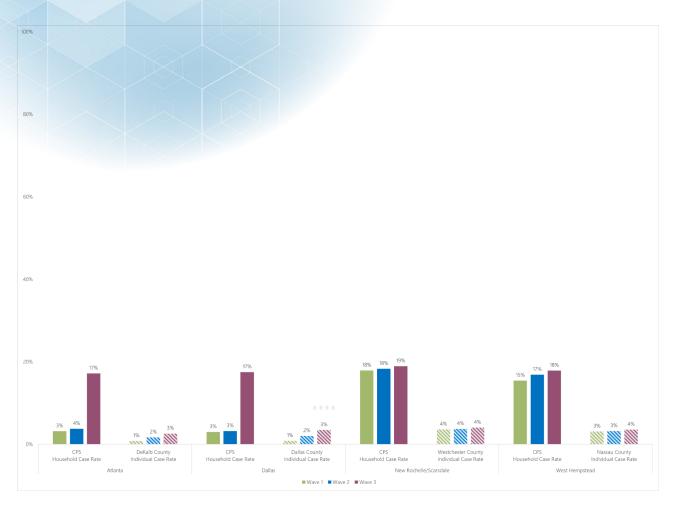
We used data provided by the Johns Hopkins Coronavirus Resource Center to visualize the early spread of the virus in the CPS's two New York communities, compared to the later spread in the CPS's two other communities (Figure 2). The CPS began data collection after the initial surge of cases in the New York area, during the first surge of cases in the South and Southwest.

Figure 2: Confirmed COVID-19 cases per 100,000 residents (7-day rolling average), by county.



The CPS asked about positive COVID-19 tests for anyone in the respondent's household—that is, a household case rate. We can't directly compare household case rates for our four communities of Orthodox Jews to individual case rates for the general population in their respective counties. Yet, the household COVID-19 case rates of CPS respondents in each community were so much higher than the individual COVID-19 case rates of their counties as a whole, it seems reasonable to conclude that Orthodox Jews in all four communities have been disproportionately infected with COVID-19 (Figure 3).

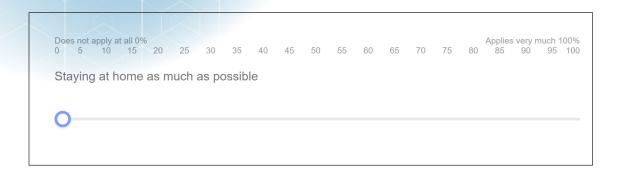
Figure 3: Household COVID-19 case rate of CPS respondents v. individual COVID-19 case rate of county, by wave and community.



In an attempt to slow the spread of the illness, mitigation tactics were recommended by public officials and adopted by much of the general public. The Centers for Disease Control and Prevention (CDC) had four general categories of recommendations: physical distancing, hand hygiene, cleaning and disinfection, and respiratory etiquette (i.e., mask wearing). In each survey, CPS respondents were asked how much each of the following statements described their behavior in the past 2 weeks:

- Staying at home as much as possible
- Avoiding social gatherings
- Staying at least 6 feet apart from others when in public
- Wearing a mask in crowded public spaces

For each statement, respondents were able to drag a slider from 0% to 100%:

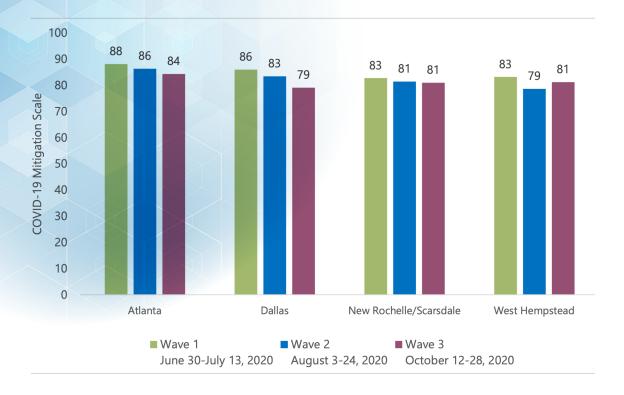


Responses to the four statements listed above were combined to form the COVID-19 Mitigation Scale.<sup>23</sup>



Overall *mitigation efforts were high*, with respondents as a group saying the four mitigation behaviors were 83% applicable to them (Figure 4). Statistical modeling shows that throughout the CPS period, as the local COVID-19 case rate went up, the COVID-19 Mitigation Scale went up, as well.<sup>24</sup> In other words, respondents were sensitive to local conditions and adjusted their behavior accordingly. Women, older individuals, and those living in Atlanta had the highest scores on the COVID-19 mitigation scale.

Figure 4. COVID-19 Mitigation Scale score, by wave and community.<sup>25</sup>



If CPS respondents were practicing physical distancing and mask wearing, why were their rates of COVID-19 infection high, compared with their neighbors? The simplest explanation has to do with family size: epidemiologists have shown that people living in larger households have a dramatically higher risk of infection,<sup>26</sup> and the average CPS household size was 3.9 persons in Wave 1, compared to 2.5 persons for all U.S. households.<sup>27</sup>

#### THE BOTTOM LINE ON COVID-19 CASES AND MITIGATION EFFORTS:

CPS respondents worked conscientiously to mitigate the spread of COVID-19 by staying home, avoiding social gatherings, maintaining social distance, and wearing masks. Despite these efforts, CPS respondents in all four communities contracted COVID-19 at a disproportionately higher rate than others in their respective counties. We suspect that these high rates of infection are due to the large family sizes of Orthodox Jews.

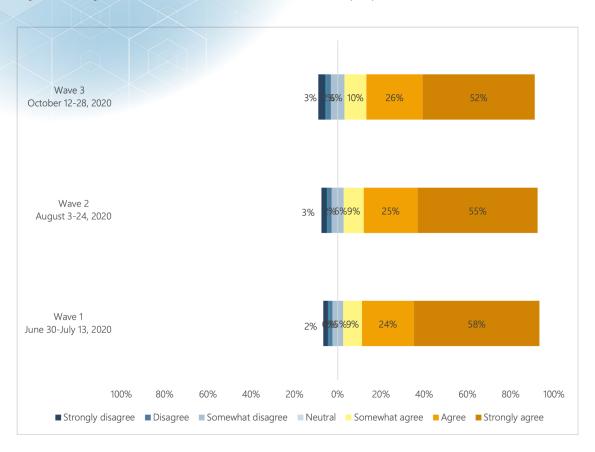
# Religion

The CPS examined the impact of the pandemic on the religious attitudes and behaviors of Orthodox Jews, knowing that research on other groups suggests that the pandemic had a positive effect on religion.

## Satisfaction with Orthodox Community and Shul

In all three CPS surveys, the majority of respondents "strongly" agreed with the statement "In general, I'm glad to be a member of the Orthodox community." In Wave 3, agreement with the statement was slightly lower than in the previous waves (Figure 5).

Figure 5. "I'm glad to be a member of the Orthodox community," by wave.28



The majority of CPS respondents were *satisfied with their shul's response to the coronavirus outbreak*. The shuls in New Rochelle & Scarsdale and Atlanta received particularly high marks (Figure 6). (This question was only asked once of each respondent; we can't measure whether satisfaction with the shul's response changed over the study period.)

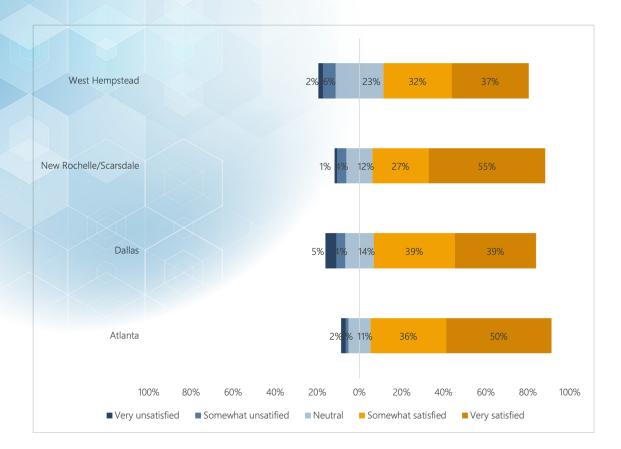


Figure 6. Satisfaction with shul's response to COVID-19 pandemic, by community.

At the end of each CPS survey, respondents were asked a few open-ended questions, including "Is there anything else you would like to share with the research team?" The following responses from Wave 1 echoed the aforementioned satisfaction with the respondents' Orthodox communities:

• I am so grateful to live in this community. I don't know how I could survive this emotionally without being here, with these incredible people and the *emunah* [faith].

(Woman, Atlanta, 30s)

• As a widow, I am often very lonely, not related to the pandemic. Family and friends have been constantly reaching out. Their *chesed* [loving kindness] is amazing!

(Woman, West Hempstead, 60+)

• Our Rabbis have been incredible in creating a sense of community and meaningful experiences at this very difficult time.

(Woman, New Rochelle & Scarsdale, 60+)

I commend our leadership for taking a measured approach to reopening our shul.

(Man, Dallas, 60+)

## Minyan

In each CPS survey, respondents were asked whether they had *davened* [prayed] with a *minyan* [prayer quorum] over the last 2 weeks. Unsurprisingly, given socio-religious norms around women and prayer, women were less likely than men to daven with a minyan. Those ages 60 and older were also less likely to daven with a minyan during the period of study.

Statistical models show that throughout the CPS period, as the local COVID-19 case rate went down, men became more likely to daven with a minyan.<sup>29</sup> Both men and women were more likely to daven with a minyan during Wave 3, compared to the previous waves.

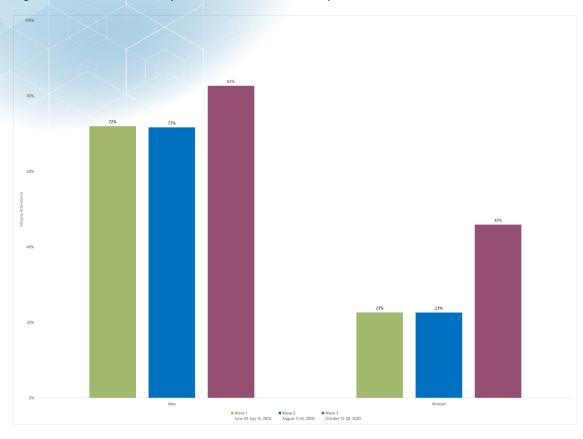


Figure 7. Davened with a minyan over the last two weeks, by sex and wave. 30

#### **Shabbat**

In each survey, respondents were asked the extent to which they felt the following emotions during the previous Shabbat:

- Joyful
- Peaceful
- Bored
- Lonely

Responses to these four items were combined to form a Shabbat Sentiment Scale with values ranging from 0 to 12.<sup>31</sup> Shabbat sentiment was fairly high across all three waves of data collection, with averages of more than 8 on the scale of 0 to 12. Men felt slightly more positive than women, those under age 40 felt slightly more positive than older people, and respondents' feelings were somewhat more positive during Waves 2 and 3, compared to Wave 1 (Figure 8). Still, there were no dramatic fluctuations over the study period. Statistical models show that *the local COVID-19 case rate did not significantly affect respondents' feelings on Shabbat*, as measured in the Shabbat Sentiment Scale.<sup>32</sup>

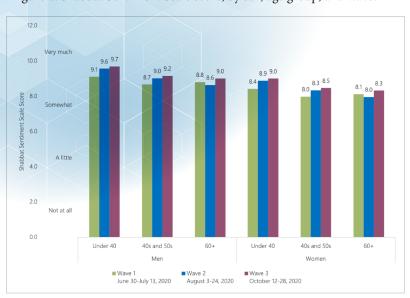


Figure 8. Shabbat Sentiment Scale score, by sex, age group, and wave.<sup>33</sup>

One CPS respondent explained:

• While I miss not going to shul on Shabbat, I look forward to Shabbat more than ever given the stress during the week dealing with the current situation. It has been a nice time to connect with my family and the few others in my neighborhood we feel comfortable interacting with.

(Woman, Dallas, 50s)

## **Existential Meaning**

In each survey, CPS respondents were asked about the extent to which they had felt the following during the last two weeks:

- A strong sense of gratitude or thankfulness.
- A deep sense of spiritual peace and wellbeing.
- A deep sense of awe and wonder about the universe.

These three items were taken from the Pew Research Center's 2014 U.S. Religious Landscape Survey. We can't directly compare what CPS respondents said during the COVID-19 pandemic to what all U.S. adults said in 2014, but the data suggest higher-than-typical feelings of existential meaning among CPS respondents (Table 5).

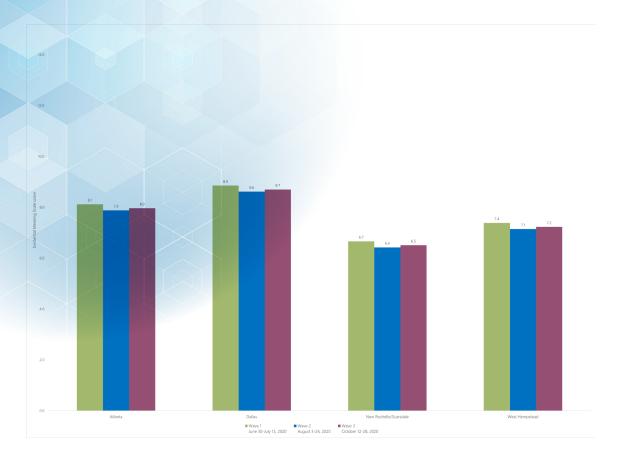
Table 5. Feelings of existential meaning, CPS respondents v. all U.S. adults

	CPS Respondents, Wave 1 At least "some days" over the past 2 weeks	All U.S. adults, 2014 <sup>34</sup> "At least once a week"
Feel a strong sense of gratitude or thankfulness	88%	79%
Feel a deep sense of spiritual peace and wellbeing	72%	59%
Feel a deep sense of awe and wonder about the universe	59%	46%

For the CPS analysis, responses to these three items were combined to form the Existential Meaning Scale, with values ranging from 0 to 15.<sup>35</sup> Overall scores on the Existential Meaning Scale were around the midpoint, indicating that most CPS respondents had these emotions and thoughts "some days" or "most days." CPS respondents in Dallas and Atlanta had higher scores than CPS respondents in the New York area.

Existential Meaning Scale scores were also slightly higher during Wave 1 than in subsequent waves, but there were no dramatic fluctuations (Figure 9). Statistical models show that *the local COVID-19 case rate did not significantly affect feelings related to existential meaning.*<sup>36</sup>

Figure 9. Existential Meaning Scale score, by community and wave. <sup>37</sup>



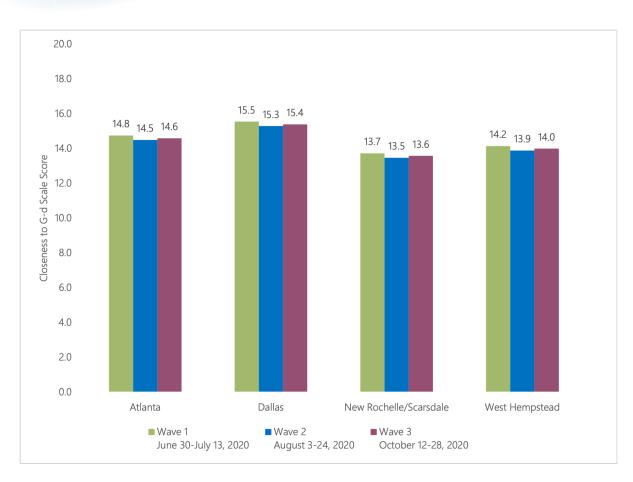
### G-d

In each survey, CPS respondents were asked about the extent to which they had the following emotions or thoughts during the previous fortnight:

- Find strength or comfort in religious observance
- Wonder if G-d was punishing you
- Wonder if G-d had abandoned you
- Feel G-d's love

Responses to these four items were combined to form the Closeness-to-G-d Scale, with values ranging from 0 to 20.<sup>38</sup> Overall scores on the Closeness-to-G-d Scale were fairly high. As with the Existential Meaning Scale, CPS respondents in Dallas and Atlanta had higher scores than CPS respondents in the New York area. And as with the Existential Meaning Scale, Closeness-to-G-d Scale scores were also slightly higher during Wave 1 than in subsequent waves, but there were no large fluctuations (Figure 10).

Figure 10. Closeness-to-G-d Scale score, by community and wave.<sup>39</sup>



Statistical models show that the local COVID-19 case rate did not significantly affect the Closeness-to-G-d Scale. <sup>40</sup> Further, statistical models show that whether one davened with a minyan did not significantly affect the Closeness-to-G-d Scale during the study period. <sup>41</sup> This does not mean that davening with a minyan is unrelated to closeness to G-d over a lifetime, but rather that closeness to G-d is robust and unchanged by temporary shifts in the sites where religious practice occurs. One CPS respondent explained his thoughts about davening at home:

• With group practice and *yom tovim* [holidays] cancelled for 3 months it was interesting to be alone with G-D although uncomfortable at times... we needed to become more self-reliant. Not all bad.

(Man, New Rochelle & Scarsdale, 60+)

At the end of the Wave 3 survey, CPS respondents were presented with the following open-ended question: "How has the coronavirus outbreak affected the way you think and feel about G-d? Please tell us as much or as little as you would like." Consistent with research on the broader population, a strong majority of CPS respondents felt that *the pandemic had a neutral or positive impact on their relationship with G-d*: 39% said the coronavirus outbreak had not affected the way they thought and felt about G-d, and 24% said the COVID-19 outbreak had strengthened their faith, serving as a reminder that "G-d is good and omnipotent" and that "G-d has a plan". Only 15% said that the COVID-19 outbreak and resultant human suffering had caused them question their faith.

In their own words, many respondents explained their strong faith:

• I'm a very spiritual person with a strong belief in G-d as a part of my daily life. I know G-d has a plan for us that we cannot possibly fathom. I trust that if we follow the simple guidelines outlined by the health professionals, we will prevail.

(Woman, West Hempstead, 60+)

- Personally, the lockdown has provided me with additional time for prayer, study, and meditation, allowing greater time to spend on my relationship with G-d. I am grateful for that silver lining.
   (Man, Atlanta, 30s)
- I am very grateful that Hashem has completely cured me from the virus given that I was very sick and in the hospital in April. I knew others that passed away at that time as well as others that were in the hospital at the same time as me that are still struggling with the aftereffects. I also have friends that are very fearful of getting the virus. I believe that Hashem does everything for a reason, and that there is something more that I need to accomplish in life, and that is the reason why I was cured.

(Man, West Hempstead, 60+)

My belief in G-d has kept me on track.

(Woman, Dallas, 60+)

#### THE BOTTOM LINE ON RELIGION

CPS respondents remained happy to be part of the Orthodox community throughout the study period and were generally satisfied with their shul's response to the pandemic. Although COVID-19 caused people to decrease their minyan attendance, most men still attended minyan in person throughout the study period. Feelings on Shabbat, existential meaning, and closeness to G-d remained strong and steady across all three waves of data collection.

# Mental Health and Wellbeing

The CPS examined the impact of the pandemic on the mental health and wellbeing of Orthodox Jews, knowing that research on other groups suggests that the pandemic had a negative effect on mental health, especially for younger people.

### **Depression and Anxiety**

In each CPS survey, respondents were given the four-item Patient Health Questionnaire (PHQ-4), a measure of depression and anxiety. Women had higher levels of depression and anxiety than men, and respondents ages 60+ had lower levels of depression and anxiety than younger respondents (Figure 11). These relative sex and age differences exist in the general U.S. population, as well. 43

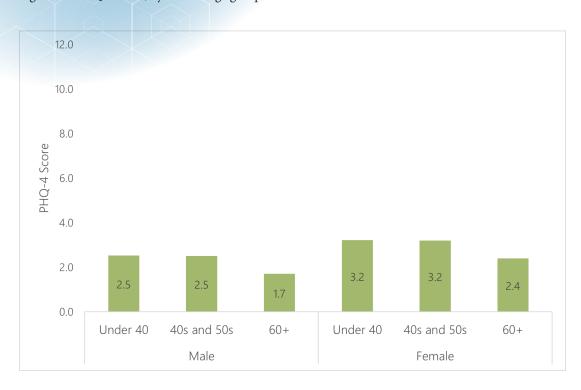


Figure 11. PHQ-4 score, by sex and age group.44

Critically, statistical models show that *the local COVID-19 case rate did not significantly affect depression and anxiety.* <sup>45</sup> Further, levels of depression and anxiety did not change significantly over the course of the three CPS surveys. Some CPS respondents told us that daily life during the pandemic catalyzed their anxiety:

Working full-time from home while watching two kids who are extremely dependent on us... part of the anxiety and frustration stems from the lack of ability to completely juggle work and home full-time, with no help.

(Woman, West Hempstead, 30s)

However, because we do not have "baseline" measures from the CPS respondents from before the pandemic, it is impossible to know whether or by how much these levels of depression and anxiety represent an increase from pre-pandemic levels.

### **Perceived Stress**

Each CPS survey also included the four-item Perceived Stress Scale (PSS-4), a measure of perceived stress.<sup>46</sup> Women experienced more stress than men, and respondents ages 60+ experienced less stress than younger respondents, demographic differences that are also typical of the general population.<sup>47</sup>

Statistical models show that *the local COVID-19 case rate did not significantly affect perceived stress.*<sup>48</sup> Perceived stress was somewhat higher in Wave 1 and Wave 2 than in Wave 3, but the differences were slight (Figure 12). Again, because we do not have "baseline" measures from the CPS respondents from *before* the pandemic, it is impossible to know whether or by how much these levels of stress represent an increase from pre-pandemic levels.

Figure 12. PSS-4 score, by sex, age group, and wave.<sup>49</sup>



### Loneliness

Each CPS survey included the Three-Item Loneliness Index, a measure of overall loneliness initially developed for use in older populations.<sup>50</sup> Women felt lonelier than men, and respondents ages 65+ felt less lonely than younger respondents. Unsurprisingly, those who lived alone felt lonelier than those who lived with other people (Figure 13).



Figure 13. Loneliness Index score, by sex, age group, and living alone.<sup>51</sup>

Critically, statistical models show that *the local COVID-19 case rate did not significantly affect loneliness.*<sup>52</sup> Levels of overall loneliness did not change significantly over the course of the three CPS surveys. Some CPS respondents told us that the pandemic was creating feelings of loneliness:

• Those of us with distant children and grandchildren watch – longingly – as some families enjoy the blessing of being together...We have no idea when we will next be able to see them! Our aging parents as well. The longing and the uncertainty is very difficult and something we never expected to face.

(Woman, West Hempstead, 60+)

However, because we do not have "baseline" measures from the CPS respondents from before the pandemic, it is impossible to know whether or by how much these levels of loneliness represent an increase from prepandemic levels.

# **Alcohol Consumption**

In each CPS survey, we measured both frequency of alcohol consumption and frequency of binge drinking—that is, a man consuming 5 or more drinks or a woman having 4 or more drinks within a 2-hour period.<sup>53</sup>

Frequency of alcohol consumption did not change significantly over the three CPS surveys, and statistical models show that *the local COVID-19 case rate did not significantly affect frequency of alcohol consumption.*<sup>54</sup> Further, rates of binge drinking did not change significantly over the three CPS surveys, and statistical models show that *the local COVID-19 case rate did not significantly affect binge drinking.*<sup>55</sup>

Overall, 6% of men and 3% of women reported binge drinking over the last two weeks. In 2018, one quarter (25%) of U.S. adults aged 26 or older reported binge drinking in the past 30 days. <sup>56</sup> We cannot directly compare two weeks during a pandemic for our four communities of Orthodox Jews to monthly binge drinking rates for the general population before the pandemic. Nevertheless, binge drinking rates for CPS respondents appear to be substantially lower than the national average. This finding is somewhat surprising, as research recently revealed rates of binge drinking in yeshiva high schools—that is, among the children of the CPS population—that are 30-50% higher than the national norm. <sup>57</sup> More research is needed to understand substance use and abuse in the Orthodox community.

### Physical Activity

Research has shown that more physical exercise is directly associated with better mental health.<sup>58</sup> In each CPS survey, we asked about physical activity: how often respondents would work, play, or exercise hard enough to make them sweat and breathe heavily. Statistical models show that throughout the CPS period, as the local COVID-19 case rate went up, CPS respondents exercised more frequently.<sup>59</sup> Critically, as respondents' levels of physical activity increased, their levels of depression, anxiety, perceived stress, and loneliness decreased.<sup>60</sup> Exercise was significantly less frequent in Wave 3, coinciding with the end of summer and a decline in case rates (Figure 14).

100% 90% 22% 29% 32% 80% 70% 60% 50% 40% 30% 20% 30% 22% 21% 10% 0% Wave 1 Wave 2 Wave 3

Figure 14. Frequency of physical activity, by wave.<sup>61</sup>

#### THE BOTTOM LINE ON MENTAL HEALTH AND WELLBEING

■ Not at all ■ One or two times

CPS respondents had typical levels of depression and anxiety, perceived stress, and overall loneliness. In addition, mental health and wellbeing levels were fairly stable over the course of the COVID-19 pandemic. Rates of binge drinking were also stable, and lower than the national average. CPS respondents also exercised more frequently when COVID-19 case rates were higher.

■ Three to four times ■ Five or more times

# Financial Situation

The CPS examined the economic outcomes of Orthodox Jews during the COVID-19 pandemic, knowing that wealthier Americans have largely been shielded from the negative economic effects of the pandemic.

### **Employment and Income**

In general, the CPS does not have baseline data from before the pandemic. We cannot expect people to remember and accurately report how they felt months prior to the survey. However, we can expect people to remember and accurately report some basic facts about their lives prior to the pandemic, including their pre-pandemic employment status. Therefore, CPS respondents were asked about their current employment status, as well as their pre-pandemic employment status. About 3% of respondents lost their jobs after the pandemic began, bringing the unemployment rate to 5%.

Table 6. Employment status of CPS respondents, pre-pandemic v. study period.

	Pre-pandemic	Current
Employed	77%	73%
Out of work force (e.g., student, homemaker, retired)	21%	22%
Unemployed	2%	5%
Total	100%	100%

Percentages may not appear to total 100% due to rounding.

The national U.S. unemployment rate in July 2020, just prior to the first CPS survey, was 10.2%. Unemployment rates in the CPS counties were generally higher than the national rate (Table 7), making the low unemployment rate among CPS respondents especially notable.

Table 7. Unemployment rate of CPS respondents v. county, by community.

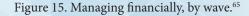
	CPS Respondents	County <sup>62</sup>
Atlanta (DeKalb county)	3%	10%
Dallas (Dallas county)	6%	8%
New Rochelle & Scarsdale	2%	14%
(Westchester county)		
West Hempstead (Nassau county)	7%	14%

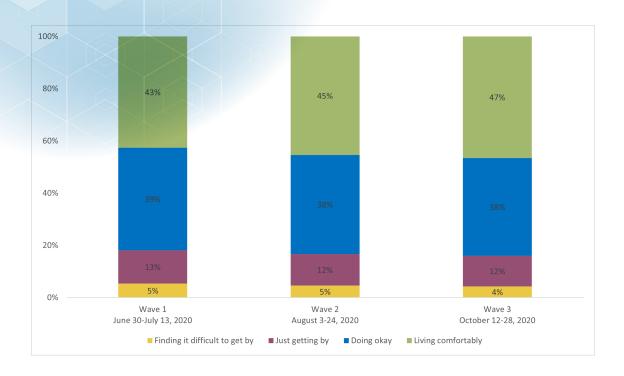
It is possible to remain employed but still suffer income loss. In Wave 1, about half of CPS respondents (48%) said their household income had decreased since the COVID-19 outbreak (Table 8). Ten percent reported an increase in their household income, and the rest (42%) reported no change. Statistical models show that these figures did not change significantly in response to COVID-19 case rates, 63 nor from Wave 1 to Wave 2.

Table 8. Change in household income since COVID-19 outbreak.

	Pct. of CPS	Cumulative
	respondents	Pct.
Disappeared completely	2%	2%
10%	0%	2%
20%	1%	3%
30%	2%	5%
40%	2%	7%
50%	8%	15%
60%	6%	21%
70%	7%	29%
80%	11%	40%
90%	8%	48%
No change	42%	90%
110%	3%	93%
120%	4%	96%
130%	1%	98%
140%	1%	99%
150%	1%	99%
160%	0%	100%
170%	0%	100%
180%	0%	100%
190%	0%	100%
Doubled	0%	100%

Many factors affect how CPS respondents were managing financially. Those who were managing less well included those younger than 60, those without a college degree, those living alone, and those living with three or more people (i.e., at least one dependent). Yet, none of these groups experienced more or less change in their financial situation over the course of the CPS period. Statistical models show that throughout the study period, the local COVID-19 case rate did not affect how CPS respondents were managing financially. Although respondents reported managing slightly better in Waves 2 and 3 compared to Wave 1, there was little substantive change over the course of the CPS period (Figure 15).





# **Charitable Giving**

Virtually all CPS respondents (99%) reported making charitable donations over the year preceding the Wave 1 survey. The majority of respondents expected their charitable donations to remain at the same level in the coming year, with some expecting increases, and fewer expecting increases (Table 9). Women and those without a college degree were more likely to say that they expected their giving would decrease.

Table 9. How CPS respondents expect their charitable giving to change in the coming year (Wave 1).

	Within the		Outside the	
	Jewish community	day schools	Jewish community	
Decrease substantially	4%	10%	11%	
Decrease somewhat	17%	13%	15%	
Stay the same	65%	70%	70%	
Increase somewhat	13%	7%	4%	
Increase substantially	0%	0%	0%	
Total	100%	100%	100%	

# Perceptions of Financial Struggle

At the end of the Wave 2 survey, CPS respondents were presented with the following open-ended question: "From what you've seen, how is the coronavirus outbreak affecting the financial health of your local community?" The two most common refrains were a moderate form of "struggling" (32%) and indications that they were "unsure" (20%). The following two responses showcase the feelings of those who are managing well financially, but suspected that there was hardship around them:

• Completely devastating. I'm concerned about the health and wellness of the local shuls and yeshiva. I feel an exorbitant amount of pressure to send my young son to yeshiva even though I feel the chances of his school year becoming remote learning is high. In which case, he will gain ZERO from schooling, because Zoom at his age, is absolutely ineffective. I feel obligated because I know many will not be able to send, and my employment status put me in a position to send to help keep the school afloat.

(Woman, West Hempstead, 30s)

Not aware of any specific problems but suspect that some are affected. We put one part time domestic employee on leave at the beginning of the pandemic (not Jewish). This was done to protect ourselves from exposure to the virus, not because of financial problems. We were concerned because she used public transportation to commute ... We are paying her 25% of her regular salary while not working for us. We assume that she is managing, but don't know for sure. At the same time, we increased the hours of another domestic employee to full time and came close to doubling her salary, because ... she seemed to be low risk.

(Man, New Rochelle & Scarsdale, 60+)

#### THE BOTTOM LINE ON RESPONDENTS' FINANCIAL SITUATION

The bottom line on Prior to the pandemic, CPS respondents were distinguished by very high levels of education and income, along with low unemployment rates. A small proportion (about 3%) lost jobs following the outbreak of the COVID-19 pandemic, about half lost some income, but the vast majority managed well financially throughout the CPS study period. The majority of respondents expected their charitable giving to stay the same or increase in the next year. At the same time, CPS respondents' perceptions of the pandemic's impact on community finances were more negative.

# Discussion: A Community Insulated from Harm

The CPS tells the story of four Orthodox Jewish communities living through the COVID-19 pandemic in 2020, and how the pandemic affected them in terms of their religion, mental health and wellbeing, and finances. CPS respondents do not represent all American Orthodox Jews—they do not, for example, reflect the experiences of Orthodox Jews in densely populated, impoverished communities like Borough Park, Williamsburg, or Crown Heights. At the same time, because of its longitudinal nature, the CPS teaches us a lot about how the rise and fall of COVID-19 case rates affected Orthodox Jews in suburban, middle class communities.

### Summary: COVID-19 Cases and Mitigation Efforts

CPS respondents reported working conscientiously to mitigate the spread of COVID-19 by staying at home, avoiding social gatherings, maintaining social distance, and wearing masks. Despite these efforts, CPS respondents in all four communities seem to have contracted the COVID-19 virus at higher rates than their neighbors. We suspect this is because CPS respondents had larger household sizes than their neighbors—people living in larger households have a dramatically higher risk of COVID-19 infection.

### Caution: Working without Baseline Data

In terms of how the pandemic affected the four communities beyond case rates, we do not have "baseline" measures from the CPS respondents from before the pandemic. The CPS can only assess how respondents changed *during* the pandemic.

There is a serious paucity of baseline knowledge about the Orthodox Jewish community in general; research is often commissioned in response to a problem, rather than as part of a proactive, foresighted process. Moving forward, the Center for Communal Research aspires to collect baseline data in order to more holistically contextualize the findings of discrete studies like this one, as well as serve as a valuable repository for a richer understanding of the Orthodox community, now and into the future.

# What We Learned: Religion, Mental Health and Wellbeing, and Financial Situation

We set out to learn how Orthodox Jewish life changed, if at all, during the coronavirus outbreak. What was happening to Orthodox Jews' religion, mental health and wellbeing, and financial situation? The findings of the CPS were remarkably positive and encouraging in all three areas we set out to investigate.

### Religion

Overall, CPS respondents were satisfied with how their shuls responded to the COVID-19 outbreak. Throughout the study period, CPS respondents remained happy to be part of the Orthodox community. Religiously, although the pandemic negatively affected minyan attendance, respondents had consistent and positive feelings and thoughts about Shabbat, existential meaning, and G-d.

# Mental health and wellbeing

In terms of mental health and wellbeing, we found stability in levels of depression and anxiety, perceived stress, overall loneliness, alcohol consumption, and binge drinking. As the local COVID-19 case rate increased, CPS respondents exercised more frequently, perhaps because they had more free time due to mandatory business shutdowns and travel restrictions.

#### Financial situation

As a group, CPS respondents had very high levels of educational attainment and very large household incomes, and they reported that they were managing well financially. There was little substantive change in how respondents reported that they were managing financially over the study period.

### Speculation: Why?

Why were Orthodox Jews living in these four communities largely insulated from the harmful effects of the pandemic? The data suggest that these individuals had two sets of protective factors working in their favor:



### High socioeconomic status

In the United States, the top quartile of income earners recovered quickly from pandemic-related job loss, compare with low-income earners, and were largely shielded from the negative economic effects of the pandemic. CPS respondents largely fell into the category of high income earners; the majority have graduate degrees, and all of them live in comfortable, middle-class suburbs. It is likely that other Orthodox Jews, particularly those living in poor, urban areas like Borough Park, Williamsburg, and Crown Heights did not have the protection of high socioeconomic status as they navigated the challenges posed by the pandemic.



### **Religious Resources**

Religious involvement is associated with greater mental wellbeing and lower frequency and intensity of mental illness.<sup>66</sup> Scholars posit that religion facilitates the development of resources that positively impact mental health and wellbeing: group resources like pastoral care and social support from the community; psychological resources like tools for coping with stress and reduced existential uncertainty; and social identity resources like a strong sense of self.<sup>67</sup>

In an analysis of the CPS data prepared for an academic journal,<sup>68</sup> we found that the psychosocial resources of CPS respondents—measured using the Existential Meaning Scale and the Closeness-to-G-d Scale—were strengthened as the local population reduced mobility and stayed home. And as feelings of closeness to G-d increased, depression and anxiety, perceived stress, and loneliness all decreased. In other words, the Orthodox Jews we studied appear to have been sustained and protected by their faith.

The relative importance of these two protective factors in insulating these four communities is an open question. Future research might begin to answer this question by probing the experiences of other Orthodox communities; in particular, those with lower socioeconomic status. Perhaps more importantly, understanding the substantial variation how different Orthodox communities experienced the COVID-19 pandemic may shed light on the types of "group resources" that the Orthodox Union and other caring organizations need to provide, during the pandemic and as needed in the future.

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- 12 Pew Research Center, "A Portrait of American Orthodox Jews: A Further Analysis of the 2013 Survey of U.S. Jews."
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- 15 Authors' analysis of data from Pew Research Center, "A Portrait of Jewish Americans: Findings from a Pew Research Center Survey of U.S. Jews."
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- 17 United States Census, "Educational Attainment in the United States: 2019."
- 18 County median income in shown in parenthesis.
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- 21 U.S. Census Bureau.
- 22 Nir and McKinley, "Containment Area' Is Ordered for New Rochelle Coronavirus Cluster."
- 23 Exploratory factor analysis was performed on the Wave 1 responses using the iterated principal factor method. Factor 1 was comprised of 4 items (*Staying at home as much as possible, Avoiding social gatherings, Staying at least 6 feet apart from others when in public, Wearing a mask in crowded public spaces)*, explaining 76% of the variance with factor loadings from 0.633 to 0.739. Cronbach's α for the 4-item scale was 0.73. The COVID-19 Mitigation Scale was created from the mean of the 4 items.
- 24 Fixed effects linear regression of COVID-19 Mitigation Scale on confirmed COVID-19 cases per 100K residents (7-day rolling average).
- 25 Predicted margins from a random-effects linear regression of COVID-19 Mitigation Scale on community and wave.
- 26 Nande et al., "Dynamics of COVID-19 under Social Distancing Measures Are Driven by Transmission Network Structure."
- 27 U.S. Census Bureau, Current Population Survey, March and Annual Social and Economic Supplements.
- 28 Predicted margins from a random-effects ordinal logistic regression of COVID-19 Mitigation Scale on wave.
- 29 Fixed effects linear regression of minyan attendance on confirmed COVID-19 cases per 100K residents (7-day rolling average).
- 30 Predicted margins from a random-effects logistic regression of COVID-19 Mitigation Scale on sex and wave.
- 31 Exploratory factor analysis was performed on the Wave 1 responses using the iterated principal factor method. Factor 1 was comprised of all 4 items (*Joyful, Peaceful, Bored* [reversed], *Lonely* [reversed]), explaining 77% of the variance with factor loadings from 0.517 to 0.771. Cronbach's α for the 4-item scale was 0.72. The Shabbat Sentiment Scale is a composite score of these 4 items.
- 32 Fixed effects linear regression of Shabbat Sentiment Scale on confirmed COVID-19 cases per 100K residents (7-day rolling average).
- 33 Predicted margins from a random-effects logistic regression of Shabbat Sentiment Scale on sex, age group, and wave.
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- Exploratory factor analysis was performed on the Wave 1 responses using the iterated principal factor method. Factor 1 was comprised of all 3 items (Feel a strong sense of gratitude or thankfulness, Feel a deep sense of spiritual peace and well-being, Feel a deep sense of awe and wonder about the universe), explaining 99% of the variance with factor loadings from 0.709 to 0.871. Cronbach's α for the 3-item scale was 0.83. The Existential Meaning Scale is a composite score of these 3 items.
- 36 Fixed effects linear regression of Existential Meaning Scale on confirmed COVID-19 cases per 100K residents (7-day rolling average).
- 37 Predicted margins from a random-effects linear regression of Existential Meaning Scale on community and wave.

- 38 Exploratory factor analysis was performed on the Wave 1 responses using the iterated principal factor method. Factor 1 was comprised of 4 items (*Find strength or comfort in religious observance, Wonder if G-d was punishing you, Wonder if G-d had abandoned you, Feel G-d's love)*, explaining 57% of the variance with factor loadings from 0.533 to 0.749. Cronbach's α for the 4-item scale was 0.62. The Closeness-to-G-d Scale is a composite score of these 4 items.
- 39 Predicted margins from a random-effects linear regression of Closeness-to-G-d Scale on community and wave.
- 40 Fixed effects linear panel data model of Existential Meaning Scale on confirmed COVID-19 cases per 100K residents (7-day rolling average).
- 41 Fixed effects linear regression of Closeness-to-G-d Scale on minyan attendance.
- 42 Löwe et al., "A 4-Item Measure of Depression and Anxiety."
- 43 Albert, "Why Is Depression More Prevalent in Women?"; McLean et al., "Gender Differences in Anxiety Disorders"; Substance Abuse and Mental Health Services Administration, "Key Substance Use and Mental Health Indicators in the United States: Results from the 2018 National Survey on Drug Use and Health (HHS Publication No. PEP19-5068, NSDUH Series H-54)."
- 44 Predicted margins from a random-effects linear regression of PHQ-4 score on sex and age group. U.S. mean from Kroenke et al., "An Ultra-Brief Screening Scale for Anxiety and Depression."
- 45 Fixed effects linear regression of PHQ-4 score on confirmed COVID-19 cases per 100K residents (7-day rolling average).
- 46 Cohen, Kamarck, and Mermelstein, "A Global Measure of Perceived Stress."
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- 49 Predicted margins from a random-effects linear regression of PSS-4 score on sex, age group, and wave. U.K. mean from Warttig et al., "New, Normative, English-Sample Data for the Short Form Perceived Stress Scale (PSS-4)."
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- 51 Predicted margins from a random-effects linear regression of Loneliness Index score on sex, age group, and living alone.
- 52 Fixed effects linear regression of Loneliness Index score on confirmed COVID-19 cases per 100K residents (7-day rolling average).
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- 58 Chekroud et al., "Association between Physical Exercise and Mental Health in 1.2 Million Individuals in the USA between 2011 and 2015."
- 59 Random effects ordinal logistic regression of frequency of physical activity on confirmed COVID-19 cases per 100K residents (7-day rolling average).
- 60 Fixed effects linear regressions of PHQ-4, PSS-4, and Three-Item Loneliness Index scores on frequency of physical activity.
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