



Household Financial Hardship Factors Are Strongly Associated with Poorer Latino Mental Health During COVID-19

Carol L. Cleaveland¹ · Cara L. Frankenfeld²

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Abstract

Background Latinos have suffered disproportionate adversity during the COVID-19 pandemic. Many studies have focused on comparing Latinos to other groups, potentially masking critical concerns within population. This study identifies potential pathways to poor mental health among Latinos during the pandemic.

Methods Data from US Census Household Pulse Survey, covering April 23, 2020, to October 11, 2021, were analyzed. Ordinal logistic regression evaluated categorical frequencies of problems with anxiety, loss of interest, worry, and feeling down. Findings were stratified by gender, poverty status, metropolitan location, and work. Demographic, household, financial, and work covariates were mutually adjusted, and jackknife replications and population weights applied.

Results Adverse mental health was common, with higher frequencies of 2 or more adverse mental health symptoms for at least several days in the prior 2 weeks (59.1–76.3%, depending on stratified group). Food insufficiency was strongly associated with adverse mental health symptoms across all characteristics. Odds ratios of often not having enough to eat compared to enough of foods wanted being associated with adverse mental health ranged from 2.6 to 6.56 (depending on stratified group). Difficulty with expenses was also strongly associated with adverse mental health across characteristics, with odds ratios very difficult compared to not at all ranging from 2.7 to 7.7 (depending on stratified group).

Conclusion These observations suggest household financial hardship factors influence mental health regardless of other personal characteristics, and this could inform services for Latinos. Targeted programs to ensure food sufficiency and income may be necessary to improve mental health in US Latinos.

Keywords Latino health · Latino mental health · COVID-19 · Latino COVID-19

Introduction

Although there exists an emergent scholarship on Latino COVID-19 health outcomes and studies exploring the intersection of the virus and mental health, research probing the question of how the pandemic has affected Latino mental health remains sparse [1–3]. This issue is a critical avenue for inquiry, given that recent studies suggest that US adults as a whole who suffer mental health disorders are at escalated

risk for COVID-19 infection, complications, and mortality [4–9]. An analysis of electronic health records from 61 million adult patients assessing the impact of a diagnosis within the past year of bipolar disorder, depression, attention-deficit/hyperactivity disorder (ADHD), and schizophrenia found that a recent psychiatric disorder diagnosis significantly increased risk for COVID-19 infection [6]. Researchers have expressed concern that compromised mental health could increase risk of COVID infection and complications due to challenges in understanding health information, complying with public health mandates, psychosocial stressors such as inadequate shelter, and a high prevalence of comorbid conditions that exacerbate COVID symptoms [6]. In addition to concerns that poor mental health contributes to COVID infection and mortality, scientists have warned that pandemic-related social isolation, financial strain, barriers to treatment, and pre-existing psychiatric disorders could fuel deleterious mental health outcomes including high depression and suicide rates [9–11].

✉ Carol L. Cleaveland
ccleavel@gmu.edu

Cara L. Frankenfeld
prof.frankenfeld@gmail.com

¹ Department of Social Work, George Mason University, Fairfax, VA, USA

² Public Health Program, University of Puget Sound, Tacoma, WA, USA

Prior studies using the U.S. Bureau of the Census' Household Pulse Survey (HPS) survey data to evaluate mental health in the aggregate have identified concerning trends [5, 10, 11]. An analysis comparing HPS data from August 19, 2020, to February 1, 2021, found that the percentage of US adults reporting depression or anxiety symptoms in the past 7 days increased significantly, from 36.4 to 41.5% [10]. Another study using HPS data from March 17 to 29, 2021 ($N=77,104$) found that 35% of adults surveyed experienced depression or anxiety [5]. One study ($N=988,349$) comparing scores on psychometric scales from April 2020 to July 2020 found that younger people, women, racial/ethnic minorities, lower-income respondents, and those with less education suffered higher rates of depression and anxiety [11]. The same study found that individuals in states with higher COVID-19 diagnoses had larger increases in both depression and anxiety compared to those in the lowest quintile for diagnoses ($p < 0.001$) [11].

Latino Mental Health

Poor mental health among Latinos in the USA merits particular consideration given the disproportionate rates of COVID-19 infection, hospitalizations, and mortality among this population subgroup [12–14]. According to the most recently available statistics from the U.S. Centers for Disease Control (2022), Latinos are 1.5 times more likely to contract the disease than whites [13]. Latinos are also 2.2 times as likely to be hospitalized with COVID-19 than whites and are 1.8 times as likely to die from the disease than whites [13]. One recent epidemiological study comparing COVID mortality by county population density found that disproportionately, Latino counties (defined as $\geq 17.8\%$ Latino) experienced higher rates of diagnoses with the disease at 90.9 per 100,000 compared to 82.0 per 100,000 in the remaining counties [14]. COVID diagnoses were associated with high densities of monolingual Spanish speakers as well as other social determinants of health such as overcrowded housing, inability to work from home, and occupations that afforded high rates of disease exposure such as work in meat-packing plants in the Midwest [14].

A study analyzing HPS data from June 24 to 30, 2020, found that the percentage of Latinos who had seriously considered suicide in the 30 days prior to the survey was statistically significantly higher compared to the population as a whole, with 18.6% of Latinos admitting contemplating killing themselves [15]. Latinos surveyed by the CDC reported higher rates of mental health issues compared to whites across the domains of depression (40.3%), suicidal thoughts/ideation (22.9%), and substance use increase or initiation (36.9%) [16]. One study early in the pandemic used data from the SOMOS COVID-19 Crisis National Latino Survey ($n=1200$) collected between April 7 and 12, 2020,

to explore mental health for Latinas [1]. It found that knowing an undocumented immigrant and/or someone suffering COVID-19 escalated the probability of having a mental health problem by 52% [1]. Given the CDC's concerning findings linking age (18–29) to poor pandemic mental health outcomes, it is worth considering how COVID-19 may affect Latinos in particular [14]. As noted in one epidemiological study, approximately 59% of Latinos are aged less than 35 years compared with 46% of the remaining US population [14].

In addition to higher rates of COVID-related mortality and mental health adversity, recent studies suggest US Latinos have been disadvantaged by job losses due to COVID-related business closures, immigration status, and food insecurity [17, 18]. A scoping review of the literature analyzing 37 studies published in 2020 identified risk factors for Latino social determinants of health including work in jobs considered essential, overcrowded housing, limited English proficiency, residing in areas of dense Latino populations, and being unable to engage in social distancing [19]. Occupational status is particularly concerning for Latinos because of job loss due to workplace closures and quarantine, especially in the early months of the pandemic [19].

A bilingual, online study of 3,375 Latinos conducted by the Pew Research Center in March 2021 found that job and wage losses for households during the pandemic were as prevalent among American-born Latinos as they were for immigrants [20]. The same study found that 58% of immigrants who had neither citizenship nor permanent resident status suffered a lost job or wages since February 2020, compared to 45% of naturalized citizens. [20] Sixty-two percent of Latinos surveyed — a cohort that included American-born, naturalized citizens, legal permanent residents, and undocumented — said they had suffered at least one of seven potential hardships including trouble paying bills (35%); relying on food banks (31%); difficulty paying a mortgage or rent (25%); receiving government food assistance such as SNAP (23%); struggling to pay for health care (19%); receiving unemployment benefits (17%); or losing health insurance coverage (11%) [20]. Not surprisingly, immigration status affected those outcomes. As noted by Pew, 48% of Latino immigrants without legal permanent residency struggled to pay bills during the pandemic, a 13% higher rate than those who had a “green card” [20]. The same study found that 35% of US-born Latinos and 26% of naturalized citizens reported trouble paying their bills [20]. Prior to the pandemic, financial hardship, trauma during the journey to cross the Mexico/US border, vulnerability to exploitation, marginalization and isolation, and fear were found to contribute to poor mental health outcomes for undocumented immigrants, including Latinos [21–23].

These observations underscore the importance of identifying unmodifiable and modifiable factors associated with

poorer mental health in Latinos, so that actionable steps can be developed to mitigate impacts [24, 25]. We argue that pivotal factors including lack of access to resources such as housing, food, and safe and stable work may lead to or interact with other factors to contribute to poorer mental health outcomes, including anxiety and depression. The objective of this work was to examine Latinos, not compared to other ethnic groups, to identify factors associated with poorer mental health outcomes in this population group in order to inform public health policies and social service interventions that can be developed to meet their unique needs.

Methods

Data Source

The Household Pulse Survey is conducted by the U.S. Bureau of the Census in collaboration with other federal agencies to collect data on the social and economic effects of coronavirus on American households [26]. Data is collected online and the survey includes questions about childcare, education, employment, energy use, food security, health, housing, household spending, other financial information, transportation, and COVID-19 vaccination. The first phase of the survey began on April 23, 2020. Data for this analysis included participants surveyed from April 23, 2020, through October 2021, which covered phases 1, 2, 3, 3.1, and 3.2. All responses were self-reported. The collection of data for the Household Pulse Survey was approved by the Office of Management and Budget (approval number: 0607–1013). This analysis was conducted on the Household Pulse Survey Data publicly available, de-identified data, and secondary analysis is considered not human subjects research.

Study Sample

Individuals who affirmatively to the question “Are you of Hispanic, Latino, or Spanish origin?” were included in the analysis. There were 209,384 individuals included in the analysis stratified by poverty and gender; 96,969 individuals included in the sub-analysis of MSAs; and 50,755 individuals included in the analysis stratified by work status.

Outcome (Dependent) Variables

Participants were asked to rate their mental health in the prior 2 weeks for feeling anxious, feeling worried, having little interest, and feeling depressed as: not at all, several days, more than half the days, and nearly every day. A composite variable was created based on these responses for the number of symptoms reported for at least several days (several days, more than half the days, or nearly every day).

Predictor (Independent) Variables

Personal and situational characteristics (demographic, financial, household, and work-related variables) were considered as independent variables in the analysis. Demographic variables included age (in 10-year increments), race (White, Black, Asian, and other), education (less than high school, some high school, high school graduate or equivalent, some college, earned associates degree, earned bachelor’s degree, or earned graduate degree), and marital status (married, widowed, divorced, separated, or never married). Household variables included number of adults in the household, number of children in the household, and living quarters (mobile home, single-family detached, single-family attached, building with two apartments, building with three or four apartments, building with 5 or more apartments, or vehicle (boat, RV, van, etc.)). Financial variables included food sufficiency in the past 7 days (enough of kinds of food wanted; enough but not always kind wanted; sometimes not enough to eat; or often not enough to eat), difficulty with expenses (not at all, a little, somewhat difficult, very difficult, or not asked), and confidence paying mortgage or rent (not at all, slightly, moderately, highly, or payment deferred). Separate categories were created for missing values.

Stratification Variables

Gender and poverty may act as effect modifiers of relationships of mental health with personal and situational characteristics in Latinos because of cultural expectations or access to resources. Gender was classified by reported male gender (cis- and trans-gender male) or female (cis- and trans-gender female). Individuals were classified as above or at/below the federal poverty line based on household size and income (<https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines>). Income is reported in categories, and midpoint values were used to assign an income level to participants (500,000 was used for the upper category where no upper bound was reported). Classification into categories based on using the low value, midpoint, or upper value of categories was undertaken to assess bias. Percent agreement for all participants was 95% for low value versus midpoint value and 89% for midpoint value versus high value, indicating high agreement regardless of value of utilized.

Geographic location may act as an effect modifier of relationships of mental health with personal and situational characteristics through structural factors, such as policies or access to resources. A sub-analysis was conducted for participants that lived in the reported metropolitan statistical areas (MSAs): MSA 12,060: Atlanta-Sandy Springs-Alpharetta, GA; MSA 14,460: Boston-Cambridge-Newton, MA-NH; MSA 16,980: Chicago-Naperville-Elgin, IL-IN-WI; MSA 19,100: Dallas-Fort Worth-Arlington, TX; MSA

19,820: Detroit-Warren-Dearborn, MI; MSA 26,420: Houston-The Woodlands-Sugar Land, TX; MSA 31,080: Los Angeles-Long Beach-Anaheim, CA; MSA 33,100: Miami-Fort Lauderdale-Pompano Beach, FL; MSA 35,620: New York-Newark-Jersey City, NY-NJ-PA; MSA 37,980: Philadelphia-Camden-Wilmington, PA-NJ-DE; MSA 38,060: Phoenix-Mesa-Chandler, AZ; MSA 40,140: Riverside-San Bernardino-Ontario, CA; MSA 41,860: San Francisco-Oakland-Berkeley, CA; MSA 42,660: Seattle-Tacoma-Bellevue, WA; and MSA 47,900: Washington-Arlington-Alexandria, DC-VA-MD. An exploratory analysis was conducted to evaluate the associations of personal and situational characteristics with mental health stratified by MSAs.

The type of jobs people work may influence how they respond to stress. An exploratory analysis was conducted to evaluate the impact of work situation. In phase 3, the survey included a question about work in an essential setting (health care, school, first response, death care, correctional facility, food store, food manufacturing, agriculture, forestry, fishing, hunting, social services, postal service, or other essential not listed). Individuals were classified into three categories based on responses to the question about working in essential settings and work in the prior week: 1. no work in the prior week, 2. working in the prior week, and 3. work in a non-essential setting (did not indicate affirmatively to one of the essential settings asked), or work in the prior week and work in an essential setting (indicated affirmatively to one of the essential settings asked). Analyses of mental health in relation to personal and situational characteristics were evaluated through stratification by work setting. For analysis of work situation, other work predictors were not considered to avoid possible collinearity or overfitting.

Statistical Analysis

Individuals with missing data for mental health, gender, income, or ethnicity variables were excluded. Means with population-weighted standard errors and frequencies with population-weighted percentages were calculated as descriptive statistics. Ordinal logistic regression was used to evaluate categorical frequencies (not at all, several days, more than half of days, and nearly every day) of anxiety, loss of interest, worry, and feeling down over previous 2 weeks, stratified by gender and poverty status. Demographic, household, financial, and work covariates were mutually adjusted, and jackknife replications and population weights applied. Population weights were appropriate to the phases included in the analysis and accounted for exclusions made. Analyses were conducted using Stata (version 15.1, StataCorp, TX, USA). Copies of statistical code are available upon reasonable request to the authors. Heat maps were created using Microsoft Excel.

Results

Population Characteristics

There were 209,384 individuals included in the analysis stratified by poverty and gender; 96,969 individuals included in the sub-analysis of MSAs; and 50,755 individuals included in the analysis stratified by work status. Personal characteristics, stratified by gender and poverty and by work situation, are presented in Table 1. The overall average age ranged from 42 to 49 years across the stratifications. The majority of Latino participants identified themselves as White race. As to be expected, there was a mix of education and marital status across gender, poverty, and work situations, with more married individuals among those above the poverty line, and higher education among those working, among females, and among those above the poverty line. The average number of people in the household was higher for those below poverty. Individuals working and those above poverty were more frequently living in single-family homes. Also as expected, food insufficiency, having difficulty with expenses, and lower confidence in ability to pay rent or mortgage were higher among those below poverty and those not working.

Predictors of Mental Health, Stratified by Poverty and Gender

A majority of participants reported adverse mental health symptoms at several days or more across gender and poverty categories, and more than half the population reported having two or more symptoms at least several days in the prior 2 weeks (Table 2). Compared to males above poverty, other groups reported significantly higher frequencies of anxiety, worry, having little interest, and feeling depressed. The strongest magnitudes of association with higher frequencies of adverse mental health in the previous 2 weeks were observed for food insufficiency and difficulty with expenses, with similar magnitude of association observed across gender and poverty groups (Fig. 1; data in Supplemental Table 1).

Predictors of Mental Health, Stratified by Work Situation

Compared to those who were working in a self-reported non-essential setting, individuals with jobs in essential settings had mostly similar adverse mental health frequencies in the previous 2 weeks (Table 2). An exception was that there was a slightly lower frequency of worry. However, individuals who were not working compared to those working in a non-essential setting had higher frequencies of anxiety, worry, having

Table 1 Demographic, household, financial, and work characteristics of Latino participants in the US Census Household Pulse Survey included in this analysis

Characteristics		Gender & poverty							
		Males, above poverty		Males, below poverty		Females, above poverty		Females, below poverty	
		<i>N</i> or mean	Wgt % or SE	<i>N</i> or mean	Wgt % or SE	<i>N</i> or mean	Wgt % or SE	<i>N</i> or mean	Wgt % or SE
Total		70,184		12,233		100,654		26,313	
Age in years		44.2	0.1	42.2	0.3	44.3	0.1	43.4	0.2
Race	White	55,702	79.2	8547	69.5	81,287	81.3	19,754	77.8
	Black	2992	4.5	823	8.0	4949	4.9	1898	6.7
	Asian	2417	3.3	508	4.1	2683	2.8	707	2.8
	Other	9073	13.1	2355	18.5	11,735	11.0	3954	12.8
Education	Less than HS	1333	5.5	853	13.3	1268	4.7	1621	13.1
	Some HS	2278	10.9	1198	20.4	2449	8.0	2766	20.2
	High school grad or equiv	10,025	32.4	3123	38.6	13,395	26.7	7166	35.7
	Some college	16,863	21.4	3311	16.5	24,539	22.4	7606	17.9
	Associate degree	7266	8.7	1187	5.1	12,439	10.6	2976	6.6
Marital status	Bachelor degree	17,857	12.7	1594	4.1	25,738	16.4	2816	4.6
	Graduate degree	14,562	8.5	967	2.1	20,826	11.2	1362	2.0
	Missing	348	0.4	71	0.4	439	0.4	162	0.6
	Married	43,948	59.1	4032	36.9	56,184	55.8	6917	31.0
	Widowed	1140	1.0	403	2.4	3690	3.5	1701	6.4
	Divorced	7667	7.4	2199	11.6	15,617	11.8	5946	16.6
	Separated	1560	2.6	615	4.7	2880	2.9	2303	8.6
Household composition	Never married	15,521	29.6	4913	44.1	21,844	25.6	9284	36.9
	Number of people	3.7	0.02	4.6	0.06	3.8	0.02	4.7	0.04
	Number of adults	2.9	0.02	3.4	0.05	2.9	0.02	3.2	0.03
Living quarters, building type	Number of children < 18 years	0.8	0.01	1.2	0.03	0.9	0.01	1.4	0.02
	Missing	401	1.1	146	2.4	600	1.2	305	2.1
	Mobile home	1242	3.7	594	8.6	1950	3.9	1363	8.6
	Single-family, detached	28,993	64.1	3088	46.2	41,270	64.1	6566	45.6
	Single-family, attached to other houses	4016	9.2	749	9.5	5933	8.8	1549	11.0
	Building with 2 apartments	1210	3.0	348	5.1	1624	3.1	782	5.0
	Building with 3 or 4 apartments	5854	12.3	1602	17.9	8628	12.7	3437	18.6
	Building with 5 apartments	2620	6.3	719	8.8	3422	5.7	1359	7.9
Food sufficiency in the past 7 days	Boat, RV, van, etc	193	0.4	163	1.5	190	0.4	187	1.4
	Missing	208	0.4	80	0.6	241	0.4	176	0.5
	Enough of the kinds of food wanted	44,797	55.4	4010	30.9	60,725	53.8	8514	30.9
	Enough, but not always the kinds of food wanted	19,642	32.7	4539	35.9	31,229	34.9	10,362	39.2
	Sometimes not enough to eat	4552	9.6	2646	24.5	7199	9.3	5716	23.3
Often not enough to eat		985	1.9	958	8.1	1260	1.7	1545	6.2

Table 1 (continued)

Characteristics		Gender & poverty							
		Males, above poverty		Males, below poverty		Females, above poverty		Females, below poverty	
		<i>N</i> or mean	Wgt % or SE	<i>N</i> or mean	Wgt % or SE	<i>N</i> or mean	Wgt % or SE	<i>N</i> or mean	Wgt % or SE
Difficulty with expenses	Missing	76	0.2	23	0.2	94	0.1	51	0.3
	Not at all	21,060	36.9	1150	14.9	26,966	34.1	1929	11.0
	A little	10,779	26.9	1688	23.4	16,475	28.4	3689	24.9
	Somewhat difficult	7646	21.2	1960	26.8	12,581	22.9	4499	29.9
	Very difficult	4968	14.9	2588	34.6	7501	14.5	5380	34.0
Confidence in ability to pay rent or mortgage next month	Missing	14,246	18.3	2979	22.3	17,632	17.9	5008	19.3
	Not at all	3823	8.2	1844	17.6	5289	6.7	4218	17.1
	Slightly	6689	14.0	2260	20.8	10,682	14.1	5610	23.4
	Moderately	11,531	19.3	2546	21.6	19,261	21.7	5800	21.4
	Highly	32,989	38.8	2409	15.9	46,505	38.3	5344	17.6
Recent household job loss	Payment deferred	906	1.3	195	1.9	1285	1.3	333	1.2
	Missing	81	0.1	22	0.2	108	0.1	77	0.4
	Yes	28,874	49.0	7232	64.8	41,286	46.8	15,197	59.2
Employed in last 7 days	No	41,229	50.9	4979	35.1	59,260	53.1	11,039	40.4
	Missing	112	0.2	38	0.2	159	0.2	72	0.4
	Yes	47,290	64.8	4715	40.8	64,690	59.1	9975	37.3
Receiving unemployment pay	No	22,782	35.0	7480	59.0	35,805	40.7	16,266	62.3
	Missing	29,131	37.1	3136	25.4	40,207	34.3	6829	24.8
	Yes, I use paid leave	407	0.9	62	0.6	611	0.6	157	0.5
	Yes, I receive full pay	734	1.0	106	0.8	1285	1.4	290	1.0
	Yes, I receive partial pay	899	1.6	236	2.1	1343	1.4	562	1.8
Employment sector	No, I receive no pay	11,298	17.6	4042	31.1	17,637	19.7	8885	32.4
	Not phase 1, 2, or 3	27,715	41.9	4651	40.1	39,571	42.6	9590	39.5
	Missing	23,237	35.8	7620	60.3	37,220	42.3	16,712	64.3
	Government	7978	8.0	474	3.5	13,232	10.1	1280	4.7
	Private company	29,085	43.3	2565	23.5	33,282	33.5	5277	19.5
Working in a family business	Non-profit organization	3294	3.1	291	1.8	9620	7.1	900	3.1
	Self-employed	5461	7.5	1038	8.1	5859	5.4	1690	6.6
	Working in a family business	1129	2.3	245	2.8	1441	1.6	454	1.8
Characteristics		Work situation						Location	
		Work in past 7 days, non-essential setting		Work in past 7 days, essential setting		No work in the past 7 days		Located in select metropolitan statistical areas	
		<i>N</i> or mean	Wgt % or SE	<i>N</i> or mean	Wgt % or SE	<i>N</i> or mean	Wgt % or SE	<i>N</i> or mean	Wgt % or SE
Total		14,222		17,424		19,109		96,969	
Age in years		42.3		0.21		41.7		0.22	
Race	White	11,687		83.0		14,185		81.5	
	Black	638		4.6		745		4.6	
	Asian	398		3.1		412		2.5	
	Other	1499		9.4		2082		11.4	
		15,263		79.4		15,263		79.4	
		5662		4.8		907		4.8	
		3136		3.4		611		3.6	
		11,535		13.2		2328		12.2	

Table 1 (continued)

Characteristics		Work situation						Location	
		Work in past 7 days, non-essential setting		Work in past 7 days, essential setting		No work in the past 7 days		Located in select metropolitan statistical areas	
		N or mean	Wgt % or SE	N or mean	Wgt % or SE	N or mean	Wgt % or SE	N or mean	Wgt % or SE
Education	Less than HS	202	4.9	280	5.9	637	10.7	2413	8.1
	Some HS	343	8.9	456	8.4	1024	14.9	4174	14.2
	High school grad or equiv	1798	28.9	2151	27.9	3648	34.5	14,554	30.0
	Some college	3221	20.8	4022	21.6	5128	18.8	23,104	19.8
	Associate degree	1488	9.6	2061	10.4	2245	7.7	10,430	8.0
	Bachelor degree	3933	16.3	4494	14.9	3713	8.2	23,552	12.0
	Graduate degree	3237	10.7	3960	11.0	2714	5.2	18,642	7.8
Marital status	Missing	54	0.5	77	0.4	128	0.6	471	0.5
	Married	7889	53.5	9600	52.8	10,152	51.6	51,078	50.0
	Widowed	262	1.4	341	1.4	1248	5.2	2920	2.8
	Divorced	2030	9.9	2476	9.3	3183	11.9	13,493	10.0
	Separated	405	3.2	525	3.4	762	4.3	3528	4.0
	Never married	3582	31.6	4405	32.6	3636	26.4	25,379	32.8
Household composition	Number of people	3.8	0.03	3.9	0.03	3.9	0.04	4.12	0.02
	Number of adults	2.9	0.03	3.0	0.03	3.0	0.03	3.14	0.02
	Number of children < 18 years	0.9	0.02	0.9	0.02	0.9	0.02	0.97	0.01
Living quarters, building type	Missing	131	1.3	136	0.8	279	1.6	677	1.6
	Mobile home	411	4.7	572	4.1	1007	6.1	1315	3.3
	Single-family, detached	8889	60.4	11,009	62.4	11,566	58.1	34,015	54.3
	Single-family, attached to other houses	1357	9.7	1598	9.0	1636	8.4	6734	10.8
	Building with 2 apartments	389	3.2	497	3.5	584	3.8	1985	4.4
	Building with 3 or 4 apartments	601	4.6	772	5.1	936	5.6	10,992	16.7
	Building with 5 apartments	2410	15.9	2757	14.6	2933	15.2	4911	8.3
Food sufficiency in the past 7 days	Boat, RV, van, etc	34	0.3	83	0.4	168	1.2	225	0.6
	Missing	26	0.4	28	0.2	70	0.4	335	0.4
	Enough of the kinds of food wanted	10,275	63.2	12,240	62.9	10,981	50.5	54,953	47.3
	Enough, but not always the kinds of food wanted	2938	25.4	3854	25.9	5360	31.0	30,426	35.3
	Sometimes not enough to eat	815	8.6	1083	9.2	2097	14.0	9172	13.9
Difficulty with expenses	Often not enough to eat	168	2.4	219	1.8	601	4.1	1983	3.1
	Missing	9	0.1	14	0.1	41	0.1	123	0.2
	Not at all	7051	39.1	8313	38.0	6864	27.2	23,469	28.5
	A little	3611	28.5	4484	29.5	4681	27.0	15,170	27.4
	Somewhat difficult	2351	20.7	3028	21.9	3963	23.4	12,477	24.0
Confidence in ability to pay rent or mortgage next month	Very difficult	1200	11.6	1585	11.6	3560	22.4	9615	19.9
	Missing	2551	17.5	3055	17.6	5420	25.0	16,871	16.9
	Not at all	486	5.4	708	5.5	1573	11.1	7840	11.5
	Slightly	1249	13.1	1607	13.3	2375	17.0	12,295	17.3
	Moderately	1964	17.4	2459	16.9	2943	16.9	18,622	21.1
Confidence in ability to pay rent or mortgage next month	Highly	7858	45.8	9443	4.5	6619	28.7	39,929	31.7
	Payment deferred	114	0.8	152	1.1	179	1.2	1312	1.5

Table 1 (continued)

Characteristics		Work situation						Location	
		Work in past 7 days, non-essential setting		Work in past 7 days, essential setting		No work in the past 7 days		Located in select metropolitan statistical areas	
		N or mean	Wgt % or SE	N or mean	Wgt % or SE	N or mean	Wgt % or SE	N or mean	Wgt % or SE
Recent household job loss	Missing	15	0.1	14	0.0	45	0.2	120	0.16
	Yes	2066	19.9	2996	23.5	5761	37.6	45,337	54.83
	No	12,141	80.0	14,414	76.4	13,303	62.3	51,412	45.01
Employed in last 7 days	Missing	0	0	0	0	0	0.0	164	0.32
	Yes	14,222	0	17,424	0	0	0.0	59,296	54.81
	No	0	0	0	19,109	19,109	0.0	37,409	44.86
Receiving unemployment pay	Missing	--	--	--	--	--	---	36,631	32.25
	Yes, I use paid leave	--	--	--	--	--	---	554	0.71
	Yes, I receive full pay	--	--	--	--	--	---	1019	0.94
	Yes, I receive partial pay	--	--	--	--	--	---	1464	1.87
	No, I receive no pay	--	--	--	--	--	---	18,916	22.85
	Not phase 1, 2, or 3	--	--	--	--	--	---	38,285	41.37
Employment sector	Missing	255	2.0	219	1.4	--	---	38,439	46.16
	Government	2431	13.2	3124	13.3	--	---	9878	6.81
	Private company	8180	6.2	9356	59.8	--	---	33,863	34.08
	Non-profit organization	1402	7.1	2094	8.0	--	---	6393	4.13
	Self-employed	1612	11.9	2192	13.8	--	---	6836	6.92
	Working in a family business	342	3.3	439	3.8	--	---	1460	1.90

little interest, and feeling depressed. The strongest magnitudes of association with higher frequencies of adverse mental health in the previous 2 weeks were observed for food insufficiency and difficulty with expenses, with similar magnitude of association observed across work location (Fig. 2; data in Supplemental Table 2).

Predictors of Mental Health, Stratified by Location

As there is no clear MSA for reference, statistical testing was not performed across MSAs, and frequencies of mental health by MSA are presented for descriptive purposes in Supplemental Table 3. As there were similar associations observed for anxiety, worry, having little interest, and feeling depressed in the other analyses stratified by gender and poverty and by work location, results are presented for a single mental health outcome for MSA stratification. Similar to other stratifications, the strongest magnitudes of association for feeling depressed in the previous 2 weeks were observed for food insufficiency and difficulty with expenses (Supplemental Fig. 1; data in Supplemental Table 4). Depending on MSA, there were differing directionality in associations observed for education, living quarters, any work in the past 7 days, and receiving unemployment pay. However, due to the relatively smaller frequencies in the MSA stratification, these differences should be interpreted with caution.

Discussion

Latinos are at higher risk for COVID-19 infection and mortality compared to whites, and to experience poor pandemic-related mental health at higher rates than whites [13, 15, 16]. In addition, they are vulnerable to economic adversity including food insecurity, unemployment, and problems paying bills — all factors that contribute to poor mental health outcomes [17–20]. The goal of this study was to close a gap in the COVID-related scholarship on Latino mental health by using HPS data to identify which economic and demographic factors inform poor pandemic mental outcomes in this population group. With more than half of Latinos surveyed from April 23, 2020, through October 2021 reporting two or more depression or anxiety symptoms for at least several days in the preceding 2 weeks, this analysis shows strong evidence of disadvantage with respect to mental health outcomes because of the COVID-19 pandemic. Even the group with lowest frequency of adverse mental health symptoms when stratified by gender and poverty — Latino males living above the federal poverty threshold — had high frequencies of depression symptoms, anxiety, worry, and diminished interest.

Our analysis showed that social location — difficulty with expenses and food insufficiency — had strong

associations with anxiety, worry, depression, and having little interest, indicating escalated overall adversity with respect to mental health for Latinos during the pandemic. These findings are concerning given the fact that even before the pandemic, financial hardship, unemployment, and discrimination based on race/ethnicity had been identified in studies of Latino mental health to have a deleterious impact including development of psychiatric disorders such as depression [21–23]. As noted earlier in this analysis, research has shown that people with psychiatric disorders had poor COVID outcomes in comparison to those not struggling with mental health, which raises concerns that the combination of economic adversity and poor mental health could be contributing to Latino infection and mortality [4–7, 9].

Our findings echo those of a previous survey that showed an overall socio-economic disadvantage for US Latinos during the COVID-19 pandemic including problems paying bills, reliance on food banks, struggles to afford health care, and lost health insurance [20]. These findings call into question the adequacy of the nation's social welfare system, which for decades has been characterized by more stringent limits on claims for benefits such as Transitional Assistance for Needy Families (cash assistance) and the Supplemental Nutrition Assistance Program (food stamps) including regulations prohibiting immigrants with legal status from receiving income supports until they prove 5 years residency [27–29]. Our findings indicate that respondents struggled to pay bills, as well as to cover expenses for housing. As noted in our findings, there were strong associations between poor mental health and food insecurity. The USA issued three rounds of stimulus checks from April 2020 to March 2021, but it is possible that these payments were insufficient to meet the needs of low-income Latino workers, or that many were ineligible to receive them [30]. Further research is needed to understand why so many Latino workers fell through the social safety net, including examining whether the lowest income earners were eligible for social insurance programs such as unemployment benefits and SNAP. Nativity was not included in the HPS data, so immigration status is not known. It is possible that immigration status was a barrier for some who needed benefits such as SNAP or unemployment.

Our study demonstrates that demographic factors are salient in informing differential mental health outcomes during the pandemic. Latinas in our study were found to be at greater risk for self-reported depression and anxiety, even if they had an income that exceeded the poverty threshold. The higher risk for Latinas raises the question of whether the pandemic caused problems that women are typically expected to address, such as securing childcare and ensuring that children have adequate resources such as

computers for online classes during extended quarantines. Women in the youngest age cohort had even higher rates of both depression and anxiety compared to men. These results show similarity to a recent CDC analysis referenced earlier showing that increases of depression and anxiety were highest among US adults ages 18–29 and who had less than a high school diploma [16]. It is possible that many in this youngest cohort of Latinas were less established in stable jobs or enduring spells of pandemic-related unemployment as they struggled with maintaining housing, paying bills, and caring for young children. Again, the mental health harms coupled with our findings indicating economic precarity raise the question of whether the USA has in place adequate social insurance programs to protect low-income people in times of escalated adversity.

Our analysis of MSA stratification was limited by relatively smaller frequencies and we have thus urged caution in their interpretation. It is worth noting, however, the self-reported depression symptoms were informed by food insufficiency and problems with keeping up with expenses.

Limitations

Our study was limited because the Pulse Survey Data does not disaggregate Latino groups according to their ethnic backgrounds or region/country of origins such as Mexican, Central American, and Puerto Rican [26]. Spanish language data was also not disaggregated.

Conclusion

Our analysis shows that regardless of personal characteristics such as work, gender, poverty, and location, food insecurity and financial duress are adversely related to mental health in this population. Thus, addressing issues of food insecurity and financial adversity may be key in consideration of improved social services for this population. Access to food and income supports could be pivotal in improving mental health outcomes for low-income Latinos. In addition, these results highlight important factors associated with mental health in Latinos, but even with the extensive data collection, there is a lack of information about characteristics such as immigration status and ethnic subgroups among Latinos (e.g., Mexicans and Puerto Ricans) that are important to consider. Future research should examine COVID-19 pandemic-related mental health outcomes for monolingual Spanish speakers as well as comparisons by immigration status that include citizenship, permanent residency (“green card”), and effects on households in mixed immigration status families. Future longitudinal studies

Table 2 Frequency of adverse mental health symptoms in the prior 2 weeks in Latino participants of the US Census Household Pulse Survey, stratified by gender, poverty, and work location

Gender and poverty													
Frequency in previous 2 weeks	Males, above poverty			Males, below poverty			Females, above poverty			Females, below poverty			
	N	Wgt %	p-value	N	Wgt %	p-value	N	Wgt %	p-value	N	Wgt %	p-value	
Anxiety	Not at all	28,364	39.54	Ref	3707	31.93	<0.001	27,183	26.62	<0.001	5967	24.33	<0.001
	Several days	23,182	32.97		3808	31.23		37,902	38.07		8963	34.3	
	More than half the days	8457	12.37		1741	13.71		15,303	15.19		4389	15.91	
	Nearly every day	10,181	15.13		2977	23.13		20,266	20.12		6994	25.46	
Worry	Not at all	33,945	45.42	Ref	4218	35.16	<0.001	35,882	33.79	<0.001	7128	28.46	<0.001
	Several days	21,826	32.03		3986	33.04		36,878	37.35		9296	36.13	
	More than half the days	7101	11.39		1662	12.76		13,431	13.6		4148	14.8	
	Nearly every day	7312	11.15		2367	19.04		14,463	15.25		5741	20.62	
Having little interest	Not at all	34,256	45.61	Ref	4359	36.98	<0.001	42,731	39.26	<0.001	8378	33.05	<0.001
	Several days	22,098	32.11		3968	31.91		34,661	35.34		9073	33.88	
	More than half the days	7683	12.21		1834	14.63		13,141	13.7		4460	16.12	
	Nearly every day	6147	10.07		2072	16.48		10,121	11.7		4402	16.95	
Feeling depressed	Not at all	36,323	48.96	Ref	4456	37.41	<0.001	44,243	41.5	<0.001	8581	33.64	<0.001
	Several days	21,568	31.44		3916	30.68		35,128	35.25		9202	34.97	
	More than half the days	6206	9.85		1628	12.98		11,102	11.42		3738	13.42	
	Nearly every day	6087	9.75		2233	18.92		10,181	11.82		4792	17.97	
Number symptoms had at least several days	0 symptoms	22,203	29.64	Ref	2534	21.92	<0.001	20,834	19.91	<0.001	3975	16.5	<0.001
	1 symptom	6816	9.62		940	7.54		9219	8.55		1911	7.15	
	2 symptoms	7722	10.17		1171	9.36		12,957	11.65		2585	10.12	
	3 symptoms	8184	11.76		1442	12.45		13,132	12.59		3251	11.77	
4 symptoms	25,259	38.81		6146	48.73		44,512	47.3		14,591	54.45		
Work location													
Frequency in previous 2 weeks	Work in past 7 days, non-essential setting			Work in past 7 days, essential setting			No work in the past 7 days						
	N	Wgt %	p-value	N	Wgt %	p-value	N	Wgt %	p-value	N	Wgt %	p-value	
Anxiety	Not at all	5597	39.23	Ref	7073	40.46	0.549	7475	37.22	<0.001			
	Several days	4949	33.74		5782	32.26		5819	30.36				
	More than half the days	1643	12.04		2016	11.97		2275	11.74				
	Nearly every day	2033	14.99		2553	15.30		3540	20.68				
Worry	Not at all	6710	45.51	Ref	8526	47.70	0.032	8421	40.92	<0.001			
	Several days	4631	32.64		5413	31.44		5793	30.59				
	More than half the days	1373	10.40		1623	10.15		2079	11.59				
	Nearly every day	1508	11.44		1862	10.72		2816	16.90				

Table 2 (continued)

	Work location											
	Work in past 7 days, non-essential setting			Work in past 7 days, essential setting			No work in the past 7 days					
	N	Wgt %	p-value	N	Wgt %	p-value	N	Wgt %	p-value			
Frequency in previous 2 weeks												
Having little interest												
	Not at all	7255	48.72	Ref	9288	49.91	0.688	8811	42.87			<0.001
	Several days	4440	31.08		5051	29.10		5775	30.15			
	More than half the days	1405	10.96		1665	11.20		2204	11.97			
Feeling depressed												
	Nearly every day	1122	9.24		1420	9.79		2319	15.01			
	Not at all	7425	50.01	Ref	9386	50.80	0.534	9049	44.04			<0.001
	Several days	4456	30.89		5135	30.18		5775	30.29			
	More than half the days	1194	9.34		1485	9.67		1939	11.07			
	Nearly every day	1147	9.76		1418	9.34		2346	14.60			
Number symptoms had at least several days												
	0 symptoms	4515	31.16	Ref	5799	32.00	0.178	5834	28.03			<0.001
	1 symptom	1299	7.88		1668	8.86		1577	7.81			
	2 symptoms	1706	11.58		2019	11.09		1860	9.41			
	3 symptoms	1618	12.02		2035	12.12		1969	10.69			
	4 symptoms	5084	37.36		5903	35.93		7869	44.07			

		Males above poverty				Males below poverty				Females above poverty				Females below poverty			
		Anxiety	Worry	Interest	Feeling depressed	Anxiety	Worry	Interest	Feeling depressed	Anxiety	Worry	Interest	Feeling depressed	Anxiety	Worry	Interest	Feeling depressed
Age	Age in 10 year	0.95	0.97	0.94	0.94	0.95	0.97	0.94	0.94	0.97	0.91	0.99	0.97	0.95	0.91	0.92	0.91
	White (reference group)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Race	Black	0.82	0.87	0.84	0.81	0.81	0.85	0.84	0.86	0.87	0.90	0.93	0.85	0.95	1.01	1.15	1.12
	Asian	1.02	1.02	1.02	0.71	0.79	0.89	0.71	0.86	0.91	0.92	0.89	0.93	1.39	1.19	1.22	1.27
	Other	1.03	1.08	1.08	0.90	1.01	0.95	0.90	1.05	1.01	1.04	1.10	1.11	1.17	1.18	1.05	1.26
	Less than HS	0.75	0.78	0.78	0.86	0.83	0.97	0.86	0.97	0.88	0.90	0.98	0.94	1.00	0.85	1.06	1.08
	Some HS	0.74	0.78	0.78	0.89	0.78	0.85	0.89	0.95	0.91	0.85	0.96	0.82	1.10	0.99	1.03	1.01
Education	High school grad or equiv	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Some college	1.38	1.35	1.35	1.35	1.47	1.33	1.35	1.33	1.43	1.28	1.24	1.24	1.42	1.33	1.38	1.31
	Associate degree	1.45	1.36	1.36	1.11	1.32	1.17	1.11	1.14	1.31	1.18	1.06	1.03	1.55	1.51	1.41	1.32
	Bachelor degree	1.73	1.52	1.52	1.42	1.78	1.85	1.42	1.53	1.46	1.19	1.06	1.08	1.58	1.39	1.20	1.26
	Graduate degree	1.83	1.46	1.46	1.35	1.89	1.59	1.35	1.35	1.75	1.33	1.11	1.22	1.88	1.62	1.40	1.44
Marital status	Married	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Widowed	1.04	1.27	1.27	1.51	1.40	1.06	1.51	1.31	1.07	1.10	1.31	1.38	1.09	1.19	1.29	1.26
	Divorced	1.10	1.21	1.21	1.50	1.46	1.45	1.50	1.77	1.13	1.17	1.31	1.28	1.43	1.37	1.40	1.56
	Separated	1.05	1.31	1.31	1.26	1.41	1.24	1.26	1.50	0.91	0.95	1.03	1.18	1.33	1.26	1.32	1.35
	Never married	1.17	1.41	1.41	1.33	1.19	1.15	1.33	1.33	1.18	1.19	1.37	1.38	1.31	1.28	1.42	1.44
Household	Number of adults	0.99	0.98	0.98	1.03	0.99	1.01	1.03	1.05	1.02	1.02	1.03	1.03	1.03	1.02	1.03	1.02
	Number of children	0.96	0.94	0.94	0.96	0.96	0.95	0.96	0.93	0.91	0.88	0.87	0.85	0.92	0.93	0.91	0.88
Living quarters	Mobile home	0.84	0.88	0.88	0.69	0.88	0.80	0.69	0.94	0.75	0.78	0.94	0.84	0.85	0.88	0.85	0.78
	Single-family, detached	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Single-family, attached to other houses	0.90	0.88	0.88	0.69	0.89	0.88	0.69	0.88	0.90	0.91	0.87	0.96	1.09	1.28	1.20	1.22
	Building with 2 apartments	0.87	0.90	0.90	0.82	0.78	0.88	0.82	0.86	0.83	0.92	0.78	0.88	0.98	1.21	1.11	1.22
	Building with 3 or 4 apartments	0.95	0.92	0.92	0.97	0.98	0.78	0.97	1.04	0.91	0.92	0.92	0.95	1.11	1.20	1.11	1.10
Food sufficiency in past 7 days	Building with 5+ apartments	0.99	1.08	1.08	1.13	0.98	1.00	1.13	1.12	0.87	0.89	0.93	0.95	1.40	1.33	1.22	1.10
	Boat, RV, van, etc	1.83	1.64	1.64	1.22	1.80	1.50	1.22	1.28	1.49	1.55	1.49	1.62	1.07	0.89	1.00	1.48
	Phase 1, not asked	1.43	1.42	1.42	2.03	2.41	2.83	2.03	2.07	1.43	1.61	1.43	1.49	2.41	2.72	2.07	2.12
	Enough of the kinds of food wanted	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Enough, but not always the kinds of food wanted	1.96	1.98	1.98	1.52	1.55	1.59	1.52	1.59	1.72	1.72	1.80	1.69	1.61	1.59	1.54	1.48
Difficulty with expenses	Sometimes not enough to eat	2.47	2.94	2.94	2.13	2.30	2.54	2.13	2.44	2.09	2.33	2.36	2.49	2.30	2.35	2.19	2.33
	Often not enough to eat	4.26	4.48	4.48	3.82	4.69	3.61	3.82	4.69	3.61	2.72	2.60	2.87	4.27	3.21	3.37	3.18
	Not at all	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	A little	1.62	1.59	1.59	1.91	2.47	2.79	1.91	1.70	1.70	1.78	1.61	1.65	1.71	1.62	1.45	1.55
	Somewhat difficult	2.10	1.95	1.95	2.30	2.79	3.73	2.30	2.15	2.12	2.26	1.98	1.93	2.26	2.41	1.95	2.15
Confidence paying mortgage or rent	Very difficult	3.62	2.92	2.92	3.16	3.54	3.07	3.16	3.54	3.06	3.06	2.95	2.95	3.45	3.15	3.15	3.15
	Not at all	1.94	1.92	1.92	1.89	1.63	1.93	1.69	2.08	1.71	1.86	1.73	1.92	1.18	1.40	1.26	1.38
	Slightly	1.58	1.65	1.65	1.39	1.38	1.66	1.39	1.54	1.28	1.40	1.37	1.44	1.10	1.25	1.30	1.31
	Moderately	1.52	1.54	1.54	1.47	1.45	1.59	1.47	1.74	1.41	1.57	1.53	1.56	1.27	1.40	1.31	1.17
	Highly	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Recent work loss	Payment deferred	0.92	0.82	0.82	1.45	1.40	1.64	1.45	1.60	1.38	1.58	1.34	1.60	1.83	1.60	1.47	1.85
	Yes	1.44	1.44	1.44	1.39	1.39	1.36	1.39	1.33	1.24	1.30	1.20	1.22	1.32	1.28	1.21	1.17
Any work in past 7 days	No	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Yes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Receiving unemployment pay	No	1.25	1.25	1.25	1.14	0.91	1.09	1.14	0.92	1.08	1.14	1.21	1.14	1.14	1.14	1.14	
	Yes, I use paid leave	1.02	1.04	1.04	1.83	2.74	2.84	1.83	2.12	1.05	1.17	1.21	1.10	0.82	0.78	1.06	0.68
	Yes, I receive full pay	1.16	1.19	1.19	1.45	0.89	0.83	1.45	0.89	0.91	0.91	1.19	1.13	0.93	0.89	0.92	0.92
	Yes, I receive partial pay	1.04	1.25	1.25	0.79	0.74	0.94	0.79	1.18	0.88	0.98	1.12	0.95	0.82	1.01	1.15	0.72
	No, I receive no pay	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Employment sector	Not phase 1, 2, or 3	0.88	0.96	0.96	0.90	0.93	0.84	0.90	0.92	0.77	0.84	0.87	0.88	0.99	0.94	0.86	
	Government	1.16	1.10	1.10	1.03	1.01	1.01	1.03	1.10	0.99	0.98	1.02	1.00	0.99	1.14	1.04	0.92
	Private company	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Non-profit organization	1.14	1.13	1.13	0.87	0.87	0.87	0.87	0.87	1.09	0.99	1.09	1.01	1.13	1.09	1.12	1.09
	Self-employed	0.92	0.87	0.87	0.65	0.77	0.79	0.65	0.75	0.79	0.77	0.78	0.85	0.90	0.89	0.93	0.83
Working in a family business	0.91	0.82	0.82	1.11	1.33	1.32	1.11	1.15	1.01	0.93	1.01	1.22	0.70	0.89	0.91	0.78	

Fig. 1 Heat map for associations of adverse mental health in relation to demographic, household, financial, and work characteristics for Latino participants of the US Census Household Pulse Survey, stratified by gender and poverty. Red color indicates values above 1 and blue color indicates values below 1, with darker shades indicating stronger magnitude odds ratios

Fig. 2 Heat map for associations of adverse mental health in relation to demographic, household, and financial characteristics for Latino participants of the US Census Household Pulse Survey, stratified by work location. Red color indicates values above 1 and blue color indicates values below 1, with darker shades indicating stronger magnitude odds ratios

Group	Characteristic	Work in past 7 days, non-essential				Work in past 7 days, essential				No work in past 7 days			
		Anxiety	Worry	Interest	Feeling depressed	Anxiety	Worry	Interest	Feeling depressed	Anxiety	Worry	Interest	Feeling depressed
Age	Age in 10 years	0.81	0.83	0.84	0.84	0.80	0.84	0.82	0.81	0.85	0.87	0.91	0.86
	White (reference group)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Race	Black	0.88	0.88	0.84	0.87	0.88	0.93	1.01	0.87	0.73	0.97	0.70	0.81
	Asian	0.75	1.03	0.92	0.65	0.88	1.07	0.82	0.63	1.08	1.12	1.21	1.25
	Other	1.00	0.94	0.97	0.87	1.16	1.10	0.85	1.09	0.98	1.01	1.04	1.06
	Male	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Education	Female	1.43	1.37	1.13	1.19	1.46	1.48	1.16	1.17	1.33	1.33	1.22	1.17
	Less than HS	0.52	0.47	0.71	0.46	0.82	0.84	0.72	0.89	0.93	0.86	0.94	0.87
	Some HS	0.74	0.73	0.73	0.68	0.86	0.76	0.84	0.88	0.88	0.98	0.98	0.95
	HS grad or equiv (reference group)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Some college	1.25	1.33	1.20	1.11	1.54	1.56	1.30	1.43	1.65	1.37	1.33	1.38
Marital status	Associate degree	1.41	1.37	1.21	1.09	1.54	1.41	1.13	1.25	1.34	1.16	1.16	1.19
	Bachelor degree	1.92	1.77	1.41	1.36	1.68	1.54	1.21	1.31	1.44	1.18	1.11	1.17
	Graduate degree	2.15	1.80	1.40	1.40	1.83	1.47	1.14	1.20	1.74	1.44	1.26	1.30
	Married (reference group)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Widowed	1.24	1.65	1.41	1.37	1.34	1.46	1.90	1.46	1.45	1.31	1.28	1.69
Household	Divorced	1.05	1.10	1.10	1.17	1.27	1.30	1.41	1.39	1.47	1.33	1.57	1.63
	Separated	0.91	0.89	0.95	1.20	1.25	1.19	1.46	1.43	1.24	0.94	1.38	1.46
	Never married	1.14	1.14	1.25	1.41	1.14	1.15	1.47	1.40	1.26	1.16	1.39	1.46
	Number adults	1.04	1.06	1.08	1.08	0.98	0.99	1.03	1.01	1.02	1.02	1.07	1.08
	Number children	0.96	0.96	0.91									

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s40615-022-01366-8>.

Author Contribution All authors contributed to the conception and design. Data acquisition and analysis was performed by CF. The first draft of the manuscript was written by CC. All authors read and approved the final manuscript.

Data Availability The Household Pulse Survey Data used in this analysis are publicly available from the US Census (<https://www.census.gov/programs-surveys/household-pulse-survey/data.html>).

Declarations

Ethics Approval The collection of data for the Household Pulse Survey was approved by the Office of Management and Budget (approval number: 0607–1013). This analysis was conducted on the Household Pulse Survey Data publicly available, de-identified data, and this analysis of the de-identified data is considered not human subjects research.

Competing Interests The authors declare no competing interests.

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