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Emotional Correlates of the COVID-19 Pandemic in Individuals With and Without Diabetes

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OBJECTIVE

To compare the mental health experiences associated with coronavirus disease 2019 (COVID-19) in adults with and without diabetes.

RESEARCH DESIGN AND METHODS

Between 29 May 2020 and 30 June 2020, 2,176 U.S. adults completed an online survey including demographics, COVID-19 experiences, depression (eight-item Patient Health Questionnaire) and anxiety (seven-item Generalized Anxiety Disorder) symptoms, perceived stress (10-item Perceived Stress Scale), resilience (Brief Resilience Scale), and diabetes-related distress (in participants with diabetes) (17-item Diabetes Distress Scale).

RESULTS

Mean age was 49.6 years (SD 16.9); participants were primarily women (80.0%) and White (88.3%), with an annual household income of ≥$60,000 (57.6%). One hundred reported a diagnosis of type 1 diabetes (4.6%), 304 type 2 diabetes (13.9%), and 145 prediabetes (6.6%). Nearly one-third (29.7%) indicated decreases in income attributable to the pandemic. Participants with type 1 diabetes had higher levels of diabetes distress than participants with type 2 diabetes ($P < 0.05$), with moderate severity in both groups. Participants with type 2 diabetes had significantly more comorbidities and COVID-19 risk factors than all other groups (all $P < 0.01$). After controlling for covariates, participants with type 2 diabetes reported significantly more depressive symptoms than those without diabetes ($P < 0.05$) and lower levels of resilience ($P < 0.05$). Subgroup analyses by sex and age indicated that women and younger adults, particularly those age 18–34 years, reported significantly more depression and anxiety symptoms, stress, and diabetes-related distress and lower levels of resilience than men and adults age ≥51 years.

CONCLUSIONS

In this naturalistic observational study, participants with type 2 diabetes reported more depression, lower resilience, and significantly more COVID-19 risk factors and medical comorbidities than participants without diabetes. Overall, our participants demonstrated worse depression and anxiety symptoms during compared with before the pandemic.

The coronavirus disease 2019 (COVID-19) pandemic has caused significant social, emotional, and economic disruptions worldwide. To limit the spread of the virus, the public has been urged to stay home or to meet with family and friends

outdoors (1), wear a mask when in public, and wash hands frequently and/or use hand sanitizer. Businesses and public venues have been required to close and, as a result, lay off employees or reduce their work hours. Schools, both K–12 and universities, have also partially or fully pivoted to online education, requiring parents to stay home with their children, lose work hours, and/or find already-limited childcare. Restrictions on interpersonal interactions, even among extended family members, have limited parental access to childcare resources (2). With the added stress of becoming infected with the virus in conjunction with prolonged requirements for physical distancing, the pandemic has increased the risk of a global mental health crisis (3,4).

To date, multiple studies have documented the impact of the COVID-19 pandemic on mental health outcomes. In one of the earliest studies published on the pandemic, Whitehead (5) found that negative expectations about the pandemic (expected decline in income, long duration of the pandemic, and continuation of negative effects on daily life) were associated with higher perceived stress and negative affect. A review of 19 studies of mental health during COVID-19 published through 19 May 2020, primarily from China, showed the prevalence of depression symptoms ranged from 14 to 48% (6), with higher rates observed in female individuals and young adults. Rates of anxiety symptoms were highly variable, with studies reporting prevalence rates ranging from 6 to 50%. Levels of stress were variable but higher in younger and female individuals. A meta-analysis published in June 2020 found that the prevalence of anxiety was 33%, with higher rates reported in patients with COVID-19 and in those with preexisting conditions (7). A study comparing rates of depression symptoms before and during the pandemic found that rates of depression symptoms were higher during COVID-19 (27.8%) compared with prepandemic rates (8.5%), particularly in unmarried and lower-income individuals (8).

Increases in mental health symptoms are likely due to several factors, including reduced physical activity, increased screen time (9), and changes in employment and job insecurity. A cross-sectional online survey of 474 employed U.S. adults in April 2020 found that more than half of participants were at least somewhat worried about losing their job. Worry about job status and finances correlated with higher rates of anxiety and depression symptoms (10). A mail-based survey of ~6,500 U.S. adults showed that pandemic-related restrictions resulted in greater mental distress (11), particularly in those with preexisting conditions and those who felt they would lose their job in the next 30 days.

COVID-19 has posed greater risk for individuals with diabetes than the general public (12), with a mortality rate 65% higher than that for those without diabetes (13). Increased risk of adverse outcomes and mortality sets the stage for differential mental health outcomes for individuals with diabetes and other comorbid disorders. In a meta-analysis of studies examining mental health during the pandemic, rates of anxiety were 40% among individuals with diabetes, compared with 33% in nondiabetes subgroups (7). Rates of depression were reported at 28% overall but were higher in those with diabetes. Other risk factors for psychological burden were female sex, low socioeconomic status, being at higher risk for COVID-19 social isolation, and longer time spent consuming COVID-19–related news (7).

The COVID-19 pandemic may also lead to increased diabetes-related distress and potentially increases in A1C attributable to changes in daily routines as well as to social isolation and decreased access to health care (14). In an April 2020 survey of 1,382 U.S. adults with diabetes, patients reported changes in health care access (telehealth appointments, canceled appointments), increases in general and diabetes-related stress and isolation, less physical activity, greater glucose variability, and changes in eating habits (15). Patients also shared concerns regarding accessing adequate food (33.0%), obtaining diabetes supplies (12.4%), and delayed and cancelled laboratory tests (30.5%). In a cross-sectional survey of 120 Brazilian adults with diabetes (data collected in late March 2020), 44.2% screened positive for depression and/or anxiety (type 1 diabetes 32.7%; type 2 diabetes 52.9%), 29.2% reported diabetes distress, 75.8% screened positive for an eating disorder, and 77.5% met criteria for a moderate or severe sleeping disorder (16).

To date, a majority of studies examining the impact of COVID-19 on mental health of individuals with diabetes have been conducted internationally, indicating elevated rates of depression, anxiety, and distress. Only one study has examined the mental health of adults with diabetes early in the U.S. pandemic experience, but it lacked a comparison sample of adults without diabetes (15). It is unknown how individuals with diabetes compare with those without diabetes in terms of mental health outcomes including depression, anxiety, perceived stress, and resilience. The purpose of the current study was to characterize mental health experiences associated with COVID-19 in adults with and without diabetes over the course of the pandemic. Because of the increased risk of mortality from COVID-19 in individuals with diabetes, it was hypothesized that adults with diabetes would experience greater levels of stress and more difficulty coping during the COVID-19 pandemic compared with those without diabetes.

RESEARCH DESIGN AND METHODS

We conducted a longitudinal observational survey study over a 12-month period. In this article, we report findings from our baseline time point from 29 May 2020 to 30 June 2020. We recruited U.S. adults to complete an online survey. Participants were recruited from health registries and social media. Research Match is a national volunteer registry (148,000 registrants) created by academic institutions and supported by the U.S. National Institutes of Health as part of the Clinical and Translational Science Award program. E-mails were sent through Research Match (96,793 e-mails sent) to adults age ≥18 years, including those with a diagnosis of diabetes. All IN for Health is an Indiana-specific recruitment registry (7,794 e-mails sent) hosted by the Indiana Clinical and Translational Sciences Institute. E-mails were sent to registrants age ≥40 years. Recruitment e-mails contained a link to the REDCap consent and survey. Finally, recruitment was conducted in partnership with Diabetes Sisters, Inc., an online nationwide support network of women with diabetes, providing education and peer support. Recruitment of followers of Diabetes

Sisters, Inc., included a notice in the monthly newsletter (13,500 recipients) and postings on the group's Facebook (10,000 followers), Twitter (6,000), and Instagram (2,300) accounts. Notices and postings included a link to the REDCap consent form and survey.

Measures

Demographics and COVID-19 Status

Items included age, self-reported race/ethnicity, income, education and other demographic information, self-reported diabetes status, diabetes treatment, and health history. Additional questions assessed the effects of COVID-19 on the participant, including diagnosis of COVID-19, change in income as a result of the pandemic, employment status during the pandemic, and financial appraisal ("How hard has it been to make ends meet over the past 30 days?", "Have you had difficulty paying your bills in the past 30 days?", "How hopeful are you about your financial situation?") (17).

Diabetes Distress Scale-17 (DDS) (18) measures emotional burden, physician-related distress, regimen-related distress, and interpersonal distress specific to diabetes. Responses use a 6-point Likert scale from 1 (not a problem) to 6 (serious problem). Total scale score is expressed as the mean of the item responses, with higher scores indicative of higher levels of distress. Scores <2 are indicative of little to no distress, between 2.0 and 2.9 moderate distress, and ≥3.0 high distress (19). Only participants with type 1 or type 2 diabetes were asked to complete the DDS.

Patient Health Questionnaire (PHQ-8) (20) is a brief measure of depression symptoms over a 2-week period based on DSM-IV (21) criteria for depression, minus the criterion on suicidal ideation. Participants are asked to indicate how often each of the criteria occurred on a scale from 0 (not at all) to 3 (nearly every day). Scores for each item are summed to arrive at a total item score, with higher scores suggestive of greater depression severity. Ranges for severity of scores on the PHQ-9 (with the suicidal ideation question included) are as follows: 0–4, none; 5–9, mild; 10–14, moderate; and 15–19, moderately severe (20).

Generalized Anxiety Disorder (GAD-7) (22) is a seven-item measure to assess symptoms of generalized anxiety disorder based on DSM-IV (21) criteria and are rated on a 4-point Likert scale from 0 (not at all) to 3 (nearly every day). Responses for each item are summed to calculate a total score. A score of ≥10 has a sensitivity and specificity of >0.80. It has high internal consistency (Cronbach α 0.92) and test-retest reliability (intraclass correlation 0.83).

Perceived Stress Scale (PSS) (23) is a 10-item measure assessing the perception of stress in the past month (e.g., "How often have you felt that you were unable to control the important things in your life?"). Responses are on a 5-point scale from 0 (never) to 4 (very often). Scores of ≤13 are indicative of low stress, 14–26 moderate stress, and ≥27 high perceived stress. It has adequate reliability and validity.

Brief Resilience Scale (BRS) (24) is a 6-item measure assessing resilience, or "resistance to illness, adaptation, and thriving, the ability to bounce back or recover from stress" (24 p. 194). Items are phrased as declarations (e.g., "It is hard for me to snap back when something bad happens," "I usually come through difficult times with little trouble"). Respondents are asked whether they agree or disagree with each of the items, on a scale from 1 (strongly disagree) to 5 (strongly agree). Item responses are averaged to calculate mean item score from 1 to 5, with higher scores indicative of greater resilience. Meaningful score cut points have not been established, but mean item score of <4 indicating low resilience has been used in prior studies (25). The measure has good internal consistency (Cronbach α range 0.80–0.91) and test-retest reliability (intraclass correlation coefficient 0.69 after 1 month).

Statistical Analyses

The characteristics of the sample were summarized using means and SDs. Diabetes status (no diabetes, type 1 diabetes, type 2 diabetes, prediabetes, lifetime history of gestational only) was used as a grouping variable. Additional subgroup analyses were conducted to assess the differences by sex, race, ethnicity, and age grouping. For the racial groupings, participants were asked to identify their race from the following options: White, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Pacific Islander. Participants could choose as many categories as they felt applied to their status. Because of the small number of participants who endorsed American Indian, Asian, and Native Hawaiian or Pacific Islander or who selected multiple categories, these were combined into a single category (i.e., Other). For the age groupings, the sample was divided into quartiles, resulting in four age groupings: 18–34, 35–50, 51–64, and 65–92 years.

Significance tests were calculated on all variables. Student t tests were conducted to compare differences in demographic variables among the diabetes and other subgroupings. Outcome measures were analyzed by diabetes status and demographic characteristics (e.g., age group, sex, race, ethnicity) using ANCOVAs and Tukey tests to evaluate differences among subgroups on continuous variables, controlling for relevant demographic characteristics (i.e., age, sex, race, diabetes status, income). Categorical variables were analyzed using χ^2 tests. All analyses were conducted using SAS 9.4 (SAS Institute, Inc.). Significance was determined at $P \leq 0.05$.

RESULTS

Demographic Variables

A total of 2,176 adults completed all measures of the online survey. Participants were drawn from all regions of the U.S., including Alaska and Hawaii (Fig. 1). Demographic characteristics are shown in Table 1. Twenty-seven percent of the sample ($n = 580$) reported a diagnosis of diabetes, with a majority reporting a diagnosis of type 2 diabetes ($n = 301$; 52.1%), followed by prediabetes ($n = 145$; 24.9%), type 1 diabetes ($n = 100$; 17.2%), and gestational only ($n = 34$; 5.8%). Among those with type 1 diabetes, the primary mode of diabetes treatment was insulin pump ($n = 70$; 70.0%), followed by insulin injections ($n = 24$; 24.0%). For those with type 2 diabetes, the primary treatment mode was by oral medications ($n = 147$; 48.4%), followed by a combination of oral medications and insulin injections ($n = 61$; 20.1%). Mean age at diagnosis of diabetes was 18.3 (SD 9.9) and 47.3 years SD 13.3) for participants with type 1 and type 2 diabetes, respectively.
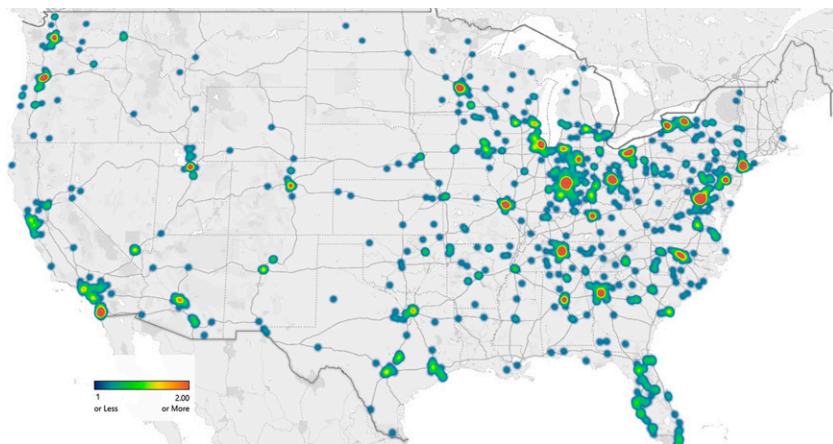
Figure 1—Heat map of study participants (not pictured are Alaska and Hawaii, each of which had 2–5 participants).

Participants were queried about other health diagnoses including depression ($n = 728$; 33.5%), high blood pressure ($n = 610$; 28.0%), and high cholesterol ($n = 524$; 24.1%). Other primary conditions listed by participants ($n = 514$; 23.6%) included asthma, fibromyalgia, arthritis, and anxiety. Mean number of comorbidities was 1.94 (SD 1.7) per person. We also calculated the number of COVID-19 risk factors per participant. Risk factors included a diagnosis of diabetes (type 1 or type 2 only), heart disease, cancer, cardiovascular disease, and asthma. Mean number of COVID-19 risk factors for all participants was 0.5 (SD 0.7).

Significant differences among the diabetes groups were found in the variables of age, sex, education, marital status, home ownership, income, race and ethnicity, A1C, and number of people who are supported by the household income. Significant differences were also found in number of COVID-19 risk factors, with the type 2 diabetes group having significantly more risk factors than each of the other diabetes groups (all $P < 0.01$). The comparisons between the type 1 diabetes group and each of the other groups were all significant with regard to these same variables (all $P < 0.01$). Participants with type 2 diabetes had significantly more comorbidities than participants in the other diabetes groupings (all $P < 0.001$).

Few participants reported a diagnosis of COVID-19 at baseline ($n = 21$; 1.0%) or a household member receiving a diagnosis ($n = 18$; 0.8%). Approximately one-third of participants ($n = 636$; 29.7%) indicated that their income had changed because of the pandemic, with a majority reporting a small or large decrease (88.8%). Employment status across the sample was variable, with working from home ($n = 832$; 38.2%) and not working and wasn't working before ($n = 692$; 31.80%) most frequently endorsed. Fourteen percent of the sample ($n = 303$) indicated that they had difficulty paying bills in the last 30 days, with a greater proportion in the prediabetes subgroup reporting difficulty (16.7%; $P < 0.001$) compared with participants without diabetes.

Outcome Measures

Significant differences were found among the diabetes groups in the mental health measures after controlling for age, sex, race, income, and diabetes status (Table 2). Assessment of depressive symptoms (PHQ-8) for the whole sample was mean of 7.1 (SD 5.8), indicating mild symptoms. Significant differences were found between the type 2 diabetes group (mean 7.7; SD 5.9) and the group without diabetes (mean 6.9; SD 5.7; $P < 0.001$). Mild levels of anxiety on the GAD-7 (mean 5.9; SD 5.3) were observed across all groups ($P < 0.001$), with significant differences between the type 2 diabetes group and the group without diabetes ($P < 0.05$). Moderate levels of stress were observed on the PSS (mean 16.1; SD 8.03) across groups ($P < 0.001$), with significant differences between the type 2 diabetes group and the group without diabetes ($P < 0.05$). Finally, adults with type 1 diabetes (mean 2.6; SD 0.7) reported higher levels of diabetes distress than the type 2

diabetes group (mean 2.4; SD 0.9; $P < 0.05$), with both in the moderate range of severity of diabetes-specific distress.

Subgroupings by Sex

Women were significantly younger than the men, with a mean age of 48.2 (SD 16.5) versus 54.8 (SD 17.0) years, respectively ($P < 0.001$) (Table 3). Significant differences in demographic variables were observed in home ownership ($P < 0.05$), diabetes status ($P < 0.001$), A1C ($P < 0.001$), and number of comorbidities ($P < 0.001$). Women fared significantly worse than men in all mental health outcomes, including mean DDS, PHQ, GAD-7, PSS, and BRS scores (all $P < 0.01$). Significantly higher percentages of women scored in the moderate and moderately severe categories on the PHQ ($P < 0.001$), screened positive for anxiety on the GAD ($P < 0.001$), and scored in the moderate and high ranges of stress on the PSS ($P < 0.001$), after controlling for covariates.

Subgroupings by Race and Ethnicity

Significant age differences were found when grouping by race and ethnicity, with White participants being the oldest (mean 50.2; SD 16.9) (Table 3), followed by African Americans (M mean 48.0; SD 14.1; $P < 0.001$). Hispanic and Latino participants were younger (mean 41.7; SD 14.2) when compared with non-Latinos (mean 50.0; SD 16.9; $P < 0.001$). Rates of diabetes were significantly higher among African Americans ($P < 0.01$). Worse mental health scores were found in the Other racial category, followed by the White category (all $P < 0.001$). African American participants reported the lowest levels of depression, anxiety, and stress. Mean PHQ scores for Other, White, and African American participants were 8.9 (SD 6.4), 7.1 (SD 5.7), and 6.2 (SD 5.6; $P < 0.001$), respectively. This same pattern held for the GAD ($P < 0.001$), PSS ($P < 0.001$), and BRS ($P < 0.001$). Lowest scores on the DDS were observed among White participants (mean 2.5; SD 0.9), followed by African Americans (mean 2.6; SD 0.9) and participants in the Other category (mean 2.6; SD 0.83; $P < 0.001$).

Subgroupings by Age

Analyses by age group (Table 3) yielded significant but expected differences in

Table 1—COVID-19 survey: demographic information for whole group and by diabetes status

	Whole group	No diabetes	Type 1 diabetes	Type 2 diabetes	Prediabetes	Gestational only
Total participants	n = 2,176	n = 1,593 (73.21)	n = 100 (4.60)	n = 301 (13.97)	n = 145 (6.66)	n = 34 (1.56)
Mean age (SD), years (n = 2,159)	49.60 (16.85)	47.53 (17.16)	42.96 (14.47)	59.97 (12.12)	55.19 (14.48)	49.65 (12.25)
Sex (n = 2,164)						
Male	433 (20.01)	281 (17.71)	25 (25.77)	90 (29.90)	37 (25.52)	NA
Female	1,732 (79.99)	1,306 (82.29)	72 (74.23)	211 (70.10)	108 (74.48)	34 (100.00)
Race (n = 2,176)						
White/Caucasian	1,922 (88.33)	1,428 (89.64)	88 (88.00)	255 (83.88)	123 (84.83)	28 (82.35)
Black/African American	110 (5.06)	64 (4.02)	7 (7.00)	26 (8.55)	12 (8.28)	1 (2.94)
Other or mixed race	122 (5.61)	88 (5.52)	2 (2.00)	21 (6.91)	6 (4.14)	5 (14.71)
Latino/Hispanic (n = 2,168)	104 (4.80)	78 (4.91)	6 (6.06)	6 (1.98)	12 (8.33)	2 (5.88)
Marital status (n = 2,170)						
Married	988 (45.53)	710 (44.68)	50 (50.51)	134 (44.22)	70 (48.28)	24 (70.59)
Living with partner	230 (10.60)	173 (10.89)	17 (17.17)	26 (8.58)	12 (8.28)	2 (5.88)
Single	534 (24.61)	427 (26.87)	22 (22.22)	53 (17.49)	31 (21.38)	1 (2.94)
Divorced	288 (13.27)	188 (11.83)	9 (9.09)	61 (20.13)	24 (16.55)	6 (17.65)
Separated	25 (1.15)	18 (1.13)	0 (0.00)	5 (1.65)	2 (1.38)	0 (0.00)
Widowed	104 (4.79)	72 (4.53)	1 (1.01)	24 (7.92)	6 (4.14)	1 (2.94)
Other	1 (0.05)	1 (0.06)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Education (n = 2,173)						
Less than high school	5 (0.23)	3 (0.19)	0 (0.00)	1 (0.33)	1 (0.69)	0 (0.00)
High school or GED	90 (4.14)	63 (3.96)	3 (3.06)	17 (5.59)	7 (4.83)	0 (0.00)
Trade school	64 (2.95)	39 (2.45)	2 (2.04)	18 (5.92)	3 (2.07)	2 (5.88)
Some college	423 (19.47)	283 (17.78)	16 (16.33)	81 (26.64)	36 (24.83)	7 (20.59)
College degree	726 (33.41)	540 (33.92)	38 (38.78)	95 (31.25)	42 (28.97)	11 (32.35)
Master or postgraduate degree	865 (39.81)	664 (41.71)	39 (39.80)	92 (30.26)	56 (38.62)	14 (41.18)
Income, $ (n = 2,140)						
0–10,000	64 (2.99)	51 (3.26)	2 (2.02)	10 (3.34)	1 (0.70)	0 (0.00)
10,001–20,000	130 (6.07)	87 (5.56)	5 (5.05)	22 (7.36)	15 (10.49)	1 (3.03)
20,001–40,000	334 (15.61)	223 (14.24)	10 (10.10)	74 (24.75)	24 (16.78)	3 (9.09)
40,001–60,000	371 (17.34)	278 (17.75)	14 (14.14)	51 (17.06)	21 (14.69)	7 (21.21)
60,001–80,000	343 (16.03)	236 (15.07)	16 (16.16)	58 (19.40)	29 (20.28)	4 (12.12)
80,001–100,000	269 (12.57)	201 (12.84)	18 (18.18)	27 (9.03)	17 (11.89)	6 (18.18)
>100,000	629 (29.39)	490 (31.59)	34 (34.34)	57 (19.06)	36 (25.17)	12 (36.36)
Mean n supported by income (SD), (n = 2,165)	2.13 (1.17)	2.13 (1.16)	2.26 (1.17)	1.97 (1.16)	2.08 (1.12)	3.00 (1.39)
Own home (n = 2,155)	1,393 (64.64)	1,009 (63.74)	61 (61.62)	198 (66.89)	95 (65.97)	30 (90.91)
Mean age at diabetes diagnosis, years (n = 397)	40.21 (17.70)	NA	18.30 (9.89)	47.29 (13.32)	NA	NA
Mean A1C (SD), mmol/mol (n = 763)	6.33 (1.36)	5.40 (0.92)	7.15 (1.11)	7.18 (1.28)	5.87 (0.51)	6.19 (2.09)
Diabetes treatments (n = 405)						
Diet only	14 (3.46)	NA	0 (0.00)	13 (4.28)	NA	NA
Exercise only	0 (0.00)	NA	0 (0.00)	0 (0.00)	NA	NA
Diet and exercise	25 (6.17)	NA	0 (0.00)	25 (8.22)	NA	NA
Oral medications	147 (36.30)	NA	0 (0.00)	147 (48.36)	NA	NA
Insulin injections	56 (13.83)	NA	24 (24.00)	32 (10.53)	NA	NA
Oral medications and insulin injections	67 (16.54)	NA	6 (6.00)	61 (20.07)	NA	NA
Insulin pump	77 (19.01)	NA	70 (70.00)	7 (2.30)	NA	NA
Other (e.g., multiple of the above, bydurion)	19 (4.69)	NA	0 (0.00)	19 (6.25)	NA	NA
Other diagnoses (n = 2,176)						
Depression	728 (33.46)	506 (31.76)	32 (32.00)	119 (39.14)	60 (41.38)	11 (32.35)
High blood pressure	610 (28.03)	307 (19.27)	24 (24.00)	198 (65.13)	73 (50.34)	8 (23.53)
High cholesterol	524 (24.08)	255 (16.01)	25 (25.00)	180 (59.21)	60 (41.38)	4 (11.76)
Thyroid disorder	377 (17.33)	251 (15.76)	31 (31.00)	66 (21.71)	26 (17.93)	3 (8.82)

Table 1—Continued						
	Whole group	No diabetes	Type 1 diabetes	Type 2 diabetes	Prediabetes	Gestational only
Heart disease	99 (4.55)	**52 (3.26)**	**1 (1.00)**	**40 (13.16)**	**5 (3.45)**	**1 (2.94)**
Sleep apnea or other diagnosed sleep disorder	377 (17.33)	**193 (12.12)**	**13 (13.00)**	**118 (38.82)**	**47 (32.41)**	**6 (17.65)**
Liver disease	30 (1.38)	**12 (0.75)**	**0 (0.00)**	**14 (4.61)**	**4 (2.76)**	**0 (0.00)**
Kidney disease	65 (2.99)	**30 (1.88)**	**2 (2.00)**	**30 (9.87)**	**3 (2.07)**	**0 (0.00)**
Cancer	105 (4.83)	**71 (4.46)**	**0 (0.00)**	**27 (8.88)**	**7 (4.83)**	**0 (0.00)**
Cardiovascular disease	72 (3.31)	**35 (2.20)**	**2 (2.00)**	**28 (9.21)**	**6 (4.14)**	**1 (2.94)**
Asthma	312 (14.34)	**209 13.12)**	**10 (10.00)**	**58 (19.08)**	**26 (17.93)**	**9 (26.47)**
Other (e.g., arthritis, anxiety, fibromyalgia)	514 (23.62)	372 (23.35)	23 (23.00)	80 (26.32)	31 (21.38)	8 (23.53)
Mean n of COVID-19 risk factors (SD), (n = 2,176)	0.46 (0.71)	**0.23 (0.50)**	**1.13 (0.34)**	**1.50 (0.75)**	**0.30 (0.59)**	**0.32 (0.64)**
Mean n of comorbidities (SD), (n = 2,176)	1.94 (1.73)	**1.44 (1.34)**	**2.63 (1.42)**	**4.15 (1.89)**	**2.40 (1.46)**	**1.50 (1.31)**
Smoker (n = 2,170)	171 (7.88)	116 (7.30)	8 (8.00)	32 (10.60)	11 (7.64)	4 (11.76)

Data are presented as n (%) unless otherwise indicated. Bold comparisons are significant at $P < 0.05$. GED, General Educational Development; NA, not applicable.

marital status ($P < 0.001$), income ($P < 0.001$), education ($P < 0.001$), diabetes status ($P < 0.001$), other diagnoses (all $P < 0.05$), number of COVID-19 risk factors ($P < 0.001$), and number of comorbidities ($P < 0.001$). After controlling for covariates, the youngest age group (18–34 years) had higher levels of depression, anxiety, distress, and stress compared with all other groups, with the oldest group (65–92 years) showing the least impact (all $P < 0.001$). Additionally, the highest rates of diabetes distress were found in the youngest age group, with 53% scoring in the high distress range, compared with 20% of those in the oldest age group ($P < 0.001$). Forty-three percent of participants age 18–34 years scored in the moderate or moderately severe categories on the PHQ, compared with ~16% in the 65+ years group (n = 71; 15.8%; $P < 0.001$). Rates of anxiety and stress were significantly higher in the youngest two age groups compared with the oldest two groups (both $P < 0.001$).

CONCLUSIONS

In this study of mental health experiences in the COVID-19 pandemic in individuals with and without diabetes, we observed a greater burden of depression symptoms and lower levels of resilience among participants with type 2 diabetes compared with those without diabetes. We also found that comorbidities were unequally distributed across the diabetes groups,

with participants with type 2 diabetes having significantly more comorbidities and COVID-19 risk factors than the other groups. These findings are comparable to Norwegian (26) and Canadian (27) studies conducted during the COVID-19 pandemic.

In our sample, rates of depression were considerably higher during the early period of the COVID-19 pandemic than those reported in studies conducted before the pandemic (28,29). Depression prevalence among U.S. adults using the PHQ-9 has been reported at 8.1% in the general population, with higher rates in women (10.4%) compared with men (5.5%) (28). These prepandemic rates demonstrate the severity of depression experienced in our sample during the early phase of the pandemic, with a prevalence rate of 32.0% overall in our sample (women 34.1%; men 24.2%). Furthermore, rates of depression in U.S. adults with type 2 diabetes have been reported at 11.7% (29), compared with our rate of 36.0%. These data demonstrate the severity of change in mental health from before to during the pandemic.

Similarly, our sample demonstrated greater rates of anxiety on the GAD-7 compared with data collected prior to COVID-19 (30). The National Health Interview Survey reported a positive rate of anxiety on the GAD-7 of 6.1% in U.S. adults in 2019 (30), compared with our overall rate of 23.3%. The National Health Interview Survey also reported a higher rate of anxiety among women

(7.8%) compared with men (4.3%). A similar pattern was found in our sample (women 25.0%; men 16.6%).

On the basis of prior studies from China (7), we expected to observe greater differences in anxiety levels by diabetes status. While the type 1 diabetes group had a higher mean score (below the clinical cutoff of 10) than any of the other groups, the result was not statistically significant. Interestingly, the type 2 diabetes group had the lowest score on the GAD-7 of all groups. These findings are also consistent with recent studies in Norwegian (26) and Canadian samples (27). A similar pattern was seen in the PSS scores, with adults with type 1 diabetes reporting the highest mean score and the type 2 diabetes group reporting the lowest after controlling for covariates.

In terms of diabetes distress, we observed high levels of diabetes distress in adults with type 1 diabetes, with more than half of the diabetes subsample experiencing moderate or severe levels of diabetes-related distress, regardless of diabetes type. This rate is higher than prepandemic levels of distress reported in prior studies (31), reflecting the difficulties that individuals with diabetes are experiencing during the pandemic. This is remarkable in the context of the socioeconomic assets (higher education and household income) in this sample. We might anticipate that greater financial assets would confer greater buffers to diabetes distress. Levels of distress in our

Table 2—COVID-19 survey of mental health, stressors, and COVID-19 data (collected 12 May–30 June 2020)

	Whole group	No diabetes	Type 1 diabetes	Type 2 diabetes	Prediabetes	Gestational only
Total participants	2,176	1,593 (73.21)	100 (4.60)	301 (13.97)	145 (6.66)	34 (1.56)
DDS (n = 388)						
Mean score (SD)	2.47 (0.93)	NA	2.61 (0.85)*	2.43 (0.95)*	NA	NA
No to low distress (<2.0)	140 (36.08)	NA	29 (30.53)	111 (37.88)	NA	NA
Moderate distress (2.0–2.9)	128 (32.99)	NA	34 (35.79)	94 (32.08)	NA	NA
High distress (≥3.0)	120 (30.93)	NA	32 (33.68)	88 (30.03)	NA	NA
PHQ-8 (n = 2,160)						
Mean score (SD)	7.14 (5.75)	**6.93 (5.73)**†	7.99 (5.20)	**7.72 (5.92)**†	7.36 (5.69)	8.38 (6.16)
None (0–4)	700 (35.21)	**541 (37.28)**	20 (21.98)	**90 (31.80)**	42 (31.58)	**7 (23.33)**
Mild (5–9)	651 (32.75)	**466 (32.12)**	41 (45.05)	**91 (32.16)**	45 (33.83)	**8 (26.67)**
Moderate (10–14)	358 (18.01)	**248 (17.09)**	19 (20.88)	**54 (19.08)**	29 (21.80)	**8 (26.67)**
Moderately severe (>14)	279 (14.03)	**196 (13.51)**	11 (12.09)	**48 (16.96)**	17 (12.78)	**7 (23.33)**
GAD (n = 2,165)						
Mean score (SD)	5.90 (5.32)	**5.89 (5.31)**‡	6.81 (4.96)	**5.68 (5.50)**‡	5.77 (5.38)	6.38 (5.07)
Low anxiety (<10)	1,670 (76.75)	1,228 (77.09)	74 (74.00)	231 (75.99)	110 (75.86)	27 (79.41)
Positive for anxiety (≥10)	506 (23.25)	365 (22.91)	26 (26.00)	73 (24.01)	35 (24.14)	7 (20.59)
PSS (n = 2,169)						
Mean score (SD)	16.10 (8.03)	**16.02 (8.02)**§	17.59 (6.99)	**15.82 (8.33)**§	16.09 (7.82)	17.76 (9.07)
Low stress (<14)	891 (40.95)	656 (41.18)	32 (32.00)	131 (43.09)	61 (42.07)	11 (32.35)
Moderate stress (14–26)	1,051 (48.30)	766 (48.09)	59 (59.00)	140 (46.05)	68 (46.90)	18 (52.94)
High stress (>26)	234 (10.75)	171 (10.73)	9 (9.00)	33 (10.86)	16 (11.03)	5 (14.71)
BRS (n = 2,135)						
Mean score (SD)	20.89 (5.17)	**20.97 (5.15)**‖	20.65 (4.35)	**20.74 (5.37)**‖	20.60 (5.42)	20.59 (5.54)
Low resilience (<4)	41 (1.88)	29 (1.82)	2 (2.00)	4 (1.32)	6 (4.14)	0 (0.00)
Not low resilience (≥4)	2,135 (98.12)	1,564 (98.18)	98 (98.00)	300 (98.68)	139 (95.86)	34 (100.00)
Income has changed because of COVID-19 (n = 2,140)	636 (29.72)	466 (29.83)	30 (30.30)	76 (25.17)	49 (34.27)	15 (44.12)
Income change (n = 636)						
Decreased a lot	237 (37.26)	166 (35.62)	10 (33.33)	35 (46.05)	19 (38.78)	7 (46.67)
Decreased a little	328 (51.57)	247 (53.00)	15 (50.00)	32 (42.11)	27 (55.10)	7 (46.67)
Increased a little	54 (8.49)	40 (8.58)	4 (13.33)	6 (7.89)	3 (6.12)	1 (6.67)
Increased a lot	17 (2.67)	13 (2.79)	1 (3.33)	3 (3.95)	0 (0.00)	0 (0.00)
Currently has insurance (n = 2,168)	2,081 (95.99)	1,523 (95.85)	92 (92.93)	291 (96.68)	143 (98.62)	32 (94.12)
COVID-19 diagnosis, participant (n = 2,171)	21 (0.97)	16 (1.01)	0 (0.00)	5 (1.64)	0 (0.00)	0 (0.00)
COVID-19 status, participant						
Still have major symptoms	3 (0.14)	1 (0.06)	NA	2 (0.66)	NA	NA
Still have minor symptoms	7 (0.32)	5 (0.31)	NA	2 (0.66)	NA	NA
Receiving follow-up care	1 (0.05)	0 (0.00)	NA	1 (0.33)	NA	NA
Ongoing adverse effects	2 (0.09)	1 (0.06)	NA	1 (0.33)	NA	NA
Returned to prior state of health	12 (0.55)	9 (0.56)	NA	3 (0.99)	NA	NA

Table 2—Continued

	Whole group	No diabetes	Type 1 diabetes	Type 2 diabetes	Prediabetes	Gestational only
COVID-19 diagnosis, household (n = 2,164)	18 (0.83)	14 (0.88)	1 (1.01)	3 (0.99)	0 (0.00)	0 (0.00)
COVID-19 status, household						
Still have major symptoms	2 (0.09)	1 (0.06)	0 (0.00)	1 (0.33)	NA	NA
Still have minor symptoms	3 (0.14)	2 (0.13)	0 (0.00)	1 (0.33)	NA	NA
Receiving follow-up care	1 (0.05)	0 (0.00)	0 (0.00)	1 (0.33)	NA	NA
Ongoing adverse effects	2 (0.09)	1 (0.06)	0 (0.00)	1 (0.33)	NA	NA
Returned to prior state of health	12 (0.55)	10 (0.63)	1 (100.00)	1 (0.33)	NA	NA
Employment status (n = 2,176)						
Recently lost job because of COVID-19	210 (9.65)	150 (9.42)	9 (9.00)	28 (9.21)	19 (13.10)	4 (11.76)
Currently looking for a job	154 (7.08)	124 (7.78)	8 (8.00)	11 (3.62)	9 (6.21)	2 (2.88)
Working job that cannot be done at home	361 (16.59)	272 (17.07)	18 (18.00)	40 (13.16)	22 (15.17)	9 (26.47)
Working from home	832 (38.24)	652 (40.93)	40 (40.00)	71 (23.36)	51 (35.17)	18 (52.94)
Not working to care for children	49 (2.25)	39 (2.45)	1 (1.00)	5 (1.64)	2 (1.38)	2 (5.88)
Not working and was not working before	692 (31.80)	465 (29.19)	23 (23.00)	150 (49.34)	50 (34.48)	4 (11.76)
Household member lost job because of COVID-19	94 (4.32)	63 (3.95)	5 (5.00)	13 (4.28)	8 (5.52)	5 (14.71)
Other (e.g., working part from home and part from work)	233 (10.71)	156 (9.79)	11 (11.00)	50 (16.45)	14 (9.66)	2 (5.88)
Lockdown status (n = 2,176)						
No stay-at-home order	200 (9.19)	142 (8.91)	7 (7.00)	39 (12.83)	10 (6.90)	2 (5.88)
Ordered to stay home except for essential workers	794 (36.49)	581 (36.47)	31 (31.00)	106 (34.87)	62 (42.76)	14 (41.18)
In process of reopening	1,628 (74.82)	1,195 (75.02)	83 (83.00)	216 (71.05)	105 (72.41)	29 (85.29)
Other	20 (0.92)	13 (0.82)	1 (1.00)	5 (1.64)	1 (0.69)	0 (0.00)
How hard has it been to make ends meet over last 30 days? (n = 2,174)						
Very hard	102 (4.69)	56 (3.52)	5 (5.00)	28 (9.21)	11 (7.59)	2 (5.88)
Hard	163 (7.50)	120 (7.54)	5 (5.00)	28 (9.21)	8 (5.52)	2 (5.88)
Not hard, not easy	756 (34.77)	516 (32.43)	42 (42.00)	126 (41.45)	59 (40.69)	13 (38.24)
Easy	600 (27.60)	462 (29.04)	29 (29.00)	68 (22.37)	32 (22.07)	9 (26.47)
Very easy	553 (25.44)	437 (27.47)	19 (19.00)	54 (17.76)	35 (24.14)	8 (23.53)
Had difficulty paying bills in last 30 days (n = 2,169)	303 (13.97)	199 (12.54)	11 (11.00)	66 (21.71)	24 (16.67)	3 (8.82)
How would you describe your financial situation? (n = 2,173)						
Getting better	252 (11.60)	198 (12.45)	12 (12.00)	22 (7.24)	16 (11.11)	4 (11.76)
Staying the same	1,459 (67.14)	1,066 (67.00)	71 (71.00)	211 (69.41)	90 (62.50)	21 (61.76)
Getting worse	462 (21.26)	327 (20.55)	17 (17.00)	71 (23.36)	38 (36.29)	9 (26.47)
How satisfied are you with your present financial situation? (n = 2,172)						
Very satisfied	469 (21.59)	376 (23.66)	19 (19.00)	48 (15.79)	20 (13.79)	6 (17.65)
Somewhat satisfied	663 (30.52)	492 (30.96)	38 (38.00)	85 (27.96)	39 (26.90)	9 (26.47)
Neither satisfied nor dissatisfied	415 (19.11)	276 (17.37)	17 (17.00)	77 (25.33)	38 (26.21)	7 (20.59)
Somewhat dissatisfied	440 (20.26)	322 (20.26)	19 (19.00)	56 (18.42)	34 (23.45)	9 (26.47)
Very dissatisfied	185 (8.52)	123 (7.74)	7 (7.00)	38 (12.50)	14 (9.66)	3 (8.82)

Table 2—Continued

	Whole group	No diabetes	Type 1 diabetes	Type 2 diabetes	Prediabetes	Gestational only
How hopeful are you about your financial situation? (n = 2,171)						
Pretty hopeful	887 (40.86)	688 (43.27)	35 (35.00)	104 (34.32)	50 (34.72)	10 (29.41)
More or less hopeful	1,052 (48.46)	747 (46.98)	56 (56.00)	156 (51.49)	74 (51.39)	19 (55.88)
Not hopeful at all	232 (10.69)	155 (9.75)	9 (9.00)	43 (14.19)	20 (13.89)	5 (14.71)

Data are presented as n (%) unless otherwise indicated. Bold comparisons are significant at $P < 0.05$. NA, not applicable. *ANCOVA $P < 0.001$, controlling for diabetes status, age, sex, race, and income. Age and income were significant covariates (both $P < 0.001$). †ANCOVA $P < 0.001$, controlling for diabetes status, age, sex, race, and income. Diabetes status, age, sex, and income were significant covariates (all $P < 0.001$). ‡ANCOVA $P < 0.001$, controlling for diabetes status, age, sex, race, and income. Diabetes status ($P < 0.05$), age ($P < 0.001$), sex ($P < 0.01$), and income ($P < 0.001$) were significant covariates. §ANCOVA $P < 0.001$, controlling for diabetes status, age, sex, race, and income. Diabetes status ($P < 0.01$) and age, sex, and income were significant covariates (all $P < 0.001$). ‖ANCOVA $P < 0.001$, controlling for diabetes status, age, sex, race, and income. Diabetes status ($P < 0.05$) and age, sex, and income were significant covariates (all $P < 0.001$).

sample may be driven by economic insecurity (32) or fluctuating blood glucose levels (33) and/or concerns about access to diabetes supplies (15).

Our subgroup analyses by sex, race, and age demonstrated significant differences among the groups with regard to depression, anxiety, and stress measures. Women and younger adults reported significantly more difficulty with mental health during the pandemic. Women were less hopeful about their finances compared with men. Participants in the 18–34 years age group had significantly lower income, with ~30% earning <$40,000 per year, compared with ~22% in the 65–92 years age group. Furthermore, the youngest group was more likely to have lost a job because of the pandemic and more likely to be looking for a job. Younger adults may also have fewer financial resources on which to draw (e.g., savings, home equity). Additionally, we observed that levels of resilience were significantly lower in the younger age groups compared with the older groups. The combination of greater financial stress and lower resilience seems to be detrimental to the mental health of adults age <35 years.

African American participants experienced significantly more job loss as well as lower annual income and greater difficulty making ends meet. Remarkably, African Americans had better scores on emotional outcomes compared with other ethnic groups, suggesting the presence of resilience to financial stress and uncertainty.

Evaluation of the economic impact of COVID-19 indicated that adults with type 2 diabetes experienced a differential impact on financial satisfaction and difficulty paying bills compared with other groups. Although nearly half of participants with type 2 diabetes reported not working at the time of the survey and not working prior to the pandemic, they reported higher rates of difficulty paying bills in the past month. They also reported lower rates of satisfaction with their financial situation. We surmise that, because of the high rate of nonemployment, a significant number of participants with type 2 diabetes may have a fixed income (e.g., retired). However, because this article reports participant status at the time of the survey, we do not know if there had been a change in financial status at baseline compared with prepandemic levels.

Finally, we observed very low rates of self-reported COVID-19 diagnoses in our U.S. sample. As of 1 June 2021, <41 per 100,000 of the U.S. population had received a diagnosis of COVID-19 (34). As a result, we were not able to assess the effects of a COVID-19 diagnosis on mental health in participants. Additionally, low rates of COVID-19 diagnoses personally or within households may have resulted in lower frequencies of mental health symptoms than what would be expected following diagnosis.

Strengths of this study include a large sample size drawn from all regions of the U.S. and the breadth of measures, including the first U.S.-based study to measure diabetes distress with the 17-item measure of the DDS during the COVID-19 pandemic. There are several limitations, including the use of a convenience sample and lack of information on prepandemic levels of emotional stress or distress. Because this study was created in response to the COVID-19 pandemic, we do not know if participants who chose to engage in the study had elevated stress or distress levels prior to the pandemic. Our sample is skewed to White, female, highly educated, and middle-class participants. We do not know how generalizable these results would be to individuals of other groups. Also, the number of individuals with diabetes is a relatively small proportion of the total sample, which may limit the generalizability and power to detect all effects. Finally, all measures were self-reported by the study participants. It is unknown to what extent social desirability or other factors may have affected participant responses.

Future studies are needed to characterize the ongoing effects of the COVID-19 pandemic on individuals with and without diabetes. Variability in exposure to waxing and waning rates of infection, local lockdown restrictions, treatment innovations, and the emergence of multiple vaccines for COVID-19 have changed the social, emotional, and behavioral landscapes of the pandemic experience for everyone. With greater prepandemic rates of depression and anxiety (35), individuals with diabetes may be particularly susceptible to long-term effects of lockdown (36). Studies are needed to better understand the mental health

Table 3—COVID-19 survey: demographic subgroups

	Whole group	Grouped by sex		Grouped by race			Grouped by ethnicity		Grouped by age, years			
		Male	Female	White	Black	Other	Latino	Not Latino	18–34	35–50	51–64	65–92
Total participants	2,176	433	1,732	1,914	110	122	94	2,052	534	528	586	511
Mean age (SD), years (n = 2,159)	49.60 (16.85)	54.76 (17.04)	48.22 (16.54)	50.21 (16.90)	48.01 (14.07)	41.26 (15.89)	41.72 (14.16)	49.96 (16.88)	27.40 (4.12)	42.05 (4.58)	57.87 (3.91)	71.11 (5.19)
Race (n = 2,176)												
White/Caucasian	1,922 (88.33)	387 (89.38)	1,526 (88.16)	NA	NA	NA	72 (69.23)	1,842 (89.24)	463 (86.70)	442 (83.71)	520 (88.74)	481 (94.13)
Black/African American	110 (5.06)	17 (3.93)	90 (5.20)	NA	NA	NA	6 (5.77)	104 (5.04)	16 (3.00)	44 (8.33)	35 (5.97)	14 (2.74)
Other or mixed race	122 (5.61)	24 (5.54)	98 (5.66)	NA	NA	NA	16 (15.38)	106 (5.14)	49 (9.18)	36 (6.82)	28 (4.78)	9 (1.76)
Latino/Hispanic (n = 2,168)	104 (4.80)	21 (4.86)	83 (4.81)	72 (3.36)	6 (0.28)	16 (0.75)	94 (4.38)	2052 (95.62)	38 (7.13)	38 (7.21)	23 (3.95)	5 (0.98)
Marital status (n = 2,170)												
Married	988 (45.53)	217 (50.12)	766 (44.35)	923 (48.15)	25 (22.9)	35 (28.69)	37 (35.58)	947 (46.02)	153 (28.65)	263 (50.10)	303 (51.79)	260 (51.08)
Living with partner	230 (10.60)	38 (8.78)	191 (11.06)	201 (10.49)	6 (5.50)	21 (17.21)	15 (14.42)	214 (10.40)	103 (19.29)	60 (11.43)	32 (5.47)	32 (6.29)
Single	534 (24.61)	111 (25.64)	421 (24.38)	428 (22.33)	45 (41.28)	52 (42.62)	33 (31.73)	500 (24.30)	267 (50.00)	120 (22.86)	95 (16.24)	51 (10.02)
Divorced	288 (13.27)	46 (10.62)	240 (13.90)	257 (13.41)	20 (18.35)	7 (5.74)	15 (14.42)	272 (13.22)	8 (1.50)	60 (11.43)	119 (20.34)	98 (19.25)
Separated	25 (1.15)	3 (0.69)	22 (1.27)	21 (1.10)	3 (2.75)	1 (0.82)	2 (1.92)	23 (1.12)	2 (0.37)	12 (2.29)	10 (1.71)	1 (0.20)
Widowed	104 (4.79)	18 (4.16)	86 (4.98)	87 (4.54)	9 (8.26)	6 (4.92)	2 (1.92)	101 (4.91)	0 (0.00)	10 (1.91)	26 (4.44)	67 (13.16)
Other	1 (0.05)	0 (0.00)	1 (0.06)	0 (0.00)	1 (0.92)	0 (0.00)	0 (0.00)	1 (0.05)	1 (0.19)	0 (0.00)	0 (0.00)	0 (0.00)
Education (n = 2,173)												
Less than high school	5 (0.23)	2 (0.46)	3 (0.17)	4 (0.21)	1 (0.92)	0 (0.00)	0 (0.00)	5 (0.24)	1 (0.19)	3 (0.57)	0 (0.00)	1 (0.20)
High school or GED	90 (4.14)	25 (5.77)	65 (3.76)	77 (4.01)	7 (6.42)	6 (4.92)	7 (6.73)	83 (4.03)	19 (3.56)	29 (5.50)	24 (4.10)	17 (3.33)
Trade school	64 (2.95)	9 (2.08)	55 (3.18)	53 (2.76)	4 (3.67)	7 (5.74)	3 (2.88)	61 (2.96)	6 (1.12)	15 (2.85)	30 (5.13)	12 (2.35)
Some college	423 (19.47)	89 (20.55)	331 (19.12)	372 (19.28)	21 (19.27)	21 (17.21)	22 (21.15)	400 (19.41)	78 (14.61)	117 (22.20)	132 (22.56)	93 (18.24)
College degree	726 (33.41)	129 (29.79)	596 (34.43)	635 (33.07)	39 (35.78)	47 (6.52)	40 (38.46)	683 (33.14)	230 (43.07)	164 (31.12)	195 (33.33)	134 (26.27)
Master or postgraduate degree	865 (39.81)	179 (41.34)	681 (39.34)	779 (40.57)	37 (33.94)	41 (33.61)	32 (30.77)	829 (40.22)	200 (37.45)	199 (37.76)	204 (34.87)	253 (49.61)

Table 3—Continued

	Whole group	Grouped by sex		Grouped by race			Grouped by ethnicity		Grouped by age, years			
		Male	Female	White	Black	Other	Latino	Not Latino	18-34	35-50	51-64	65-92
Income, $ (n = 2,140)												
0–10,000	64 (2.99)	13 (3.04)	51 (3.00)	55 (2.91)	3 (2.78)	6 (4.96)	5 (4.85)	59 (2.91)	29 (5.49)	22 (4.17)	13 (2.26)	0 (0.00)
10,001–20,000	130 (6.07)	29 (6.79)	99 (5.82)	108 (5.71)	8 (7.41)	10 (8.26)	8 (7.77)	121 (5.96)	38 (7.20)	39 (7.40)	35 (6.08)	18 (3.65)
20,001–40,000	334 (15.61)	56 (13.11)	277 (16.28)	281 (14.87)	25 (23.15)	21 (17.36)	20 (19.42)	313 (15.43)	92 (17.42)	65 (12.33)	81 (14.06)	93 (18.86)
40,001–60,000	371 (17.34)	59 (13.82)	310 (18.22)	312 (16.51)	30 (27.78)	26 (21.49)	18 (17.48)	353 (17.40)	103 (19.51)	73 (13.85)	94 (16.32)	98 (19.88)
60,001–80,000	343 (16.03)	68 (15.93)	271 (15.93)	308 (16.30)	18 (16.67)	17 (14.05)	21 (20.39)	320 (15.77)	76 (14.39)	79 (14.99)	101 (17.53)	85 (17.24)
80,001–100,000	269 (12.57)	62 (14.52)	207 (12.17)	246 (13.02)	8 (7.41)	11 (9.09)	14 (13.59)	254 (12.52)	63 (11.93)	71 (14.99)	72 (12.50)	60 (12.17)
>100,000	629 (29.39)	140 (32.79)	486 (28.57)	580 (30.69)	16 (14.81)	30 (24.79)	17 (16.50)	609 (30.01)	127 (24.05)	178 (33.78)	180 (31.25)	139 (28.19)
Mean n supported by income (SD), (n = 2,165)	2.13 (1.17)	2.03 (1.05)	2.15 (1.20)	2.12 (1.15)	2.12 (1.39)	2.32 (1.33)	2.21 (1.30)	2.12 (1.16)	2.08 (1.19)	2.66 (1.45)	2.10 (1.06)	1.66 (0.68)
Own home (n = 2,155)	1,393 (64.64)	292 (68.38)	1,092 (63.64)	1,263 (66.33)	59 (55.14)	58 (47.54)	44 (42.31)	1,343 (65.74)	172 (32.39)	331 (63.05)	452 (78.08)	424 (84.29)
Diabetes diagnosis (n = 2,176)												
Type 1 diabetes	100 (4.60)	25 (5.77)	72 (4.16)	88 (4.58)	7 (6.36)	2 (1.64)	6 (5.77)	93 (4.51)	33 (6.18)	36 (6.82)	22 (3.75)	9 (1.76)
Type 2 diabetes	304 (13.97)	90 (20.79)	211 (12.19)	255 (13.27)	26 (23.64)	21 (17.21)	6 (5.77)	297 (14.39)	11 (2.06)	49 (9.28)	117 (19.97)	124 (24.27)
Prediabetes	145 (6.66)	37 (8.55)	108 (6.24)	123 (6.40)	12 (10.91)	6 (4.92)	12 (11.54)	132 (6.40)	16 (3.00)	32 (6.06)	54 (9.22)	42 (8.22)
Gestational diabetes only	34 (1.56)	NA	34 (1.96)	28 (1.46)	1 (0.91)	5 (4.10)	2 (1.92)	32 (1.55)	3 (0.56)	18 (3.41)	10 (1.71)	3 (0.59)
No diabetes diagnosis	1,593 (73.21)	281 (64.90)	1,306 (75.45)	1,428 (74.30)	64 (58.18)	88 (72.13)	78 (75.00)	1510 (73.16)	471 (88.20)	393 (74.43)	383 (65.36)	333 (65.17)
Mean age at diabetes diagnosis (SD), (n = 397)	40.21 (17.70)	42.76 (17.94)	39.30 (17.64)	40.88 (17.97)	37.12 (13.22)	37.09 (19.63)	26.50 (14.38)	40.67 (17.65)	16.39 (8.21)	26.75 (11.52)	41.92 (13.11)	55.07 (11.68)
Mean A1C, mmol/mol (n = 763)	6.33 (1.36)	6.64 (1.59)	6.23 (1.27)	6.31 (1.33)	6.41 (1.30)	6.33 (1.64)	6.12 (1.79)	6.34 (1.34)	6.06 (1.47)	6.24 (1.46)	6.50 (1.49)	6.31 (0.99)
Diabetes treatments (n = 405)												
Diet only	14 (3.46)	3 (2.61)	11 (2.76)	10 (2.91)	3 (9.09)	1 (4.35)	1 (8.33)	13 (3.32)	2 (4.44)	1 (1.18)	5 (3.60)	5 (3.76)

Table 3—Continued

	Whole group	Grouped by sex		Grouped by race			Grouped by ethnicity		Grouped by age, years			
		Male	Female	White	Black	Other	Latino	Not Latino	18–34	35–50	51–64	65–92
Exercise only	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Diet and exercise	25 (6.17)	5 (4.35)	20 (7.04)	22 (6.40)	2 (6.06)	1 (4.35)	0 (0.00)	25 (6.39)	1 (2.22)	6 (7.06)	7 (5.04)	11 (8.27)
Oral medications	147 (36.30)	42 (36.52)	103 (36.27)	121 (35.17)	15 (45.45)	10 (43.48)	2 (16.67)	144 (36.83)	5 (11.11)	20 (23.53)	53 (38.13)	69 (51.88)
Insulin injections	56 (13.83)	20 (17.39)	35 (12.32)	49 (14.24)	2 (6.06)	3 (13.04)	4 (33.33)	52 (13.30)	13 (28.89)	12 (14.12)	19 (13.67)	12 (9.02)
Oral medications and insulin injections	67 (16.54)	20 (17.39)	47 (16.55)	57 (16.57)	5 (15.15)	5 (21.74)	1 (8.33)	66 (16.88)	2 (4.44)	16 (18.82)	30 (21.58)	17 (12.78)
Insulin pump	77 (19.01)	21 (18.26)	53 (18.66)	68 (19.77)	6 (18.18)	1 (4.35)	4 (33.33)	72 (18.41)	22 (48.89)	26 (30.59)	20 (14.39)	9 (6.77)
Other (e.g., multiple of the above, bydurion)	19 (4.69)	4 (3.48)	15 (5.28)	17 (4.94)	0 (0.00)	2 (8.70)	0 (0.00)	19 (4.86)	0 (0.00)	4 (4.71)	5 (3.60)	10 (7.52)
Other diagnoses (n = 2,176)												
Depression	728 (33.46)	113 (26.10)	612 (35.36)	649 (33.77)	25 (22.73)	47 (38.52)	34 (32.69)	692 (33.53)	198 (37.08)	215 (40.72)	199 (33.96)	111 (21.72)
High blood pressure	610 (28.03)	188 (43.42)	414 (23.92)	540 (28.10)	43 (39.09)	23 (18.85)	18 (17.31)	591 (28.63)	30 (5.62)	110 (20.83)	211 (36.01)	252 (49.32)
High cholesterol	524 (24.08)	139 (32.10)	376 (21.72)	468 (24.35)	30 (27.27)	22 (18.03)	16 (15.38)	507 (24.56)	22 (4.12)	85 (16.10)	186 (31.74)	226 (44.23)
Thyroid disorder	377 (17.33)	34 (7.85)	340 (19.64)	347 (18.05)	14 (12.73)	13 (10.66)	11 (10.58)	364 (17.64)	45 (8.43)	85 (16.10)	134 (22.87)	109 (21.33)
Heart disease	99 (4.55)	42 (9.70)	56 (3.24)	92 (4.79)	3 (2.73)	4 (3.28)	1 (0.96)	98 (4.75)	2 (0.37)	9 (1.70)	27 (4.61)	61 (11.94)
Sleep apnea or other diagnosed sleep disorder	377 (17.33)	100 (23.09)	274 (15.83)	332 (17.27)	16 (14.55)	24 (19.67)	13 (12.50)	363 (17.59)	31 (5.81)	90 (17.50)	139 (23.72)	117 (22.90)
Liver disease	30 (1.38)	9 (2.08)	21 (1.21)	26 (1.35)	1 (0.61)	2 (1.64)	2 (1.92)	28 (1.36)	0 (0.00)	13 (2.46)	9 (1.54)	8 (1.57)
Kidney disease	65 (2.99)	20 (4.62)	45 (2.60)	58 (3.02)	6 (5.45)	1 (0.82)	2 (1.92)	63 (3.05)	5 (0.94)	10 (1.89)	20 (3.41)	30 (5.87)
Cancer	105 (4.83)	30 (6.93)	72 (4.16)	98 (5.10)	2 (1.82)	7 (5.66)	3 (2.88)	101 (4.89)	5 (0.94)	15 (2.84)	30 (5.12)	54 (10.57)
Cardiovascular disease	72 (3.31)	32 (7.39)	38 (2.20)	65 (3.38)	3 (2.73)	3 (2.46)	0 (0.00)	72 (3.49)	3 (0.56)	6 (1.14)	17 (2.90)	46 (9.00)
Asthma	312 (14.34)	40 (9.24)	271 (15.66)	274 (14.26)	13 (11.82)	23 (18.85)	18 (17.31)	292 (14.15)	82 (15.36)	94 (17.80)	74 (12.63)	62 (12.13)
Other (e.g., arthritis, anxiety, fibromyalgia)	514 (23.62)	96 (22.17)	414 (23.92)	450 (23.41)	25 (22.73)	32 (26.23)	19 (18.27)	493 (23.89)	126 (23.60)	157 (29.73)	128 (21.84)	101 (19.77)
	0.46 (0.71)	0.60 (0.84)	0.42 (0.67)	0.45 (0.71)	0.49 (0.69)	0.47 (0.75)	0.33 (0.51)	0.46 (0.72)	0.25 (0.48)	0.40 (0.63)	0.49 (0.73)	0.70 (0.89)

Table 3—Continued

	Whole group	Grouped by sex		Grouped by race			Grouped by ethnicity		Grouped by age, years			
		Male	Female	White	Black	Other	Latino	Not Latino	18–34	35–50	51–64	65–92
Mean n of COVID-19 risk factors (n = 2,176)												
Mean n of comorbidities (n = 2,176)	1.94 (1.73)	2.21 (1.85)	1.86 (1.68)	1.95 (1.73)	1.95 (1.64)	1.81 (1.92)	1.43 (1.31)	1.96 (1.74)	1.11 (1.11)	1.84 (1.66)	2.24 (1.80)	2.56 (1.90)
Smoker (n = 2,170)	171 (7.88)	41 (9.51)	127 (7.35)	138 (7.19)	13 (11.82)	17 (14.17)	13 (12.62)	158 (7.67)	22 (4.14)	74 (14.02)	54 (9.23)	21 (4.13)
DDS (n = 388)												
Mean score (SD)	2.47 (0.93)	2.28 (0.90)	2.56 (0.94)	2.45 (0.94)*	2.56 (0.94)*	2.64 (0.83)*	2.59 (1.22)	2.47 (0.92)	2.99 (0.84)†	2.76 (0.87)†	2.49 (0.91)†	2.10 (0.88)†
No to low distress (<2.0)	140 (36.08)	47 (42.73)	90 (33.09)	121 (36.78)	11 (34.38)	7 (30.43)	5 (55.56)	134 (35.54)	5 (11.63)	19 (23.17)	43 (32.32)	73 (57.03)
Moderate distress (2.0–2.9)	128 (32.99)	35 (31.82)	90 (33.09)	106 (32.22)	11 (34.38)	9 (39.13)	1 (11.11)	127 (33.69)	15 (34.88)	33 (40.24)	49 (36.84)	29 (22.66)
High distress (≥3.0)	120 (3093)	28 (25.45)	92 (33.82)	102 (31.00)	10 (31.25)	7 (30.43)	3 (33.33)	116 (30.77)	23 (53.49)	30 (36.59)	41 (30.83)	26 (20.31)
PHQ-8 (n = 2,160)												
Mean score (SD)	7.14 (5.75)	5.90 (5.67)	7.46 (5.73)	7.08 (5.69)‡	6.23 (5.61)‡	8.86 (6.42)‡	7.88 (6.14)	7.11 (5.73)	8.61 (5.78)§	8.29 (5.92)§	7.05 (5.90)§	4.55 (4.33)§
None (0–4)	700 (35.21)	186 (46.85)	511 (32.30)	616 (35.12)	43 (42.57)	32 (28.57)	31 (32.29)	666 (35.35)	120 (23.90)	122 (25.42)	196 (36.10)	256 (57.02)
Mild (5–9)	651 (32.75)	115 (28.97)	531 (33.57)	581 (33.12)	32 (31.68)	33 (29.46)	32 (33.33)	615 (32.64)	166 (33.07)	169 (35.21)	188 (34.62)	122 (27.17)
Moderate (10–14)	358 (18.01)	49 (12.34)	309 (19.53)	321 (18.30)	16 (15.84)	19 (16.96)	13 (13.54)	344 (18.26)	120 (23.90)	101 (21.04)	86 (15.84)	49 (10.91)
Moderately severe (>14)	279 (14.03)	47 (11.84)	231 (14.60)	236 (13.45)	10 (9.90)	28 (25.00)	20 (20.83)	259 (13.75)	96 (19.12)	88 (18.33)	73 (13.44)	22 (4.90)
GAD (n = 2,165)												
Mean score (SD)	5.90 (5.32)	4.72 (4.97)	6.21 (6.38)	5.85 (5.27)‖	5.05 (5.32)‖	7.36 (5.87)‖	6.83 (5.98)	5.86 (5.29)	7.58 (5.43)¶	7.17 (5.68)¶	5.52 (5.19)¶	3.40 (3.75)¶
Low anxiety (<10)	1,670 (76.75)	361 (83.37)	1,299 (75.04)	1,487 (77.37)	88 (80.00)	81 (66.39)	72 (69.23)	1,592 (77.13)	358 (67.04)	363 (68.75)	463 (79.01)	469 (91.78)
Positive for anxiety (≥10)	506 (23.25)	72 (16.63)	432 (24.96)	435 (22.63)	22 (20.00)	41 (33.61)	32 (30.77)	472 (22.87)	176 (32.96)	165 (31.25)	123 (20.99)	42 (8.22)
PSS (n = 2,169)												
Mean score (SD)	16.10 (8.03)	13.50 (7.93)	16.77 (7.92)	15.96 (8.01)#	14.95 (8.11)#	19.16 (7.90)#	17.45 (7.36)	16.03 (8.06)	18.81 (7.37)**	18.00 (7.92)**	15.82 (7.87)**	11.79 (7.06)**
Low stress (<14)	891 (40.95)	226 (52.19)	658 (38.01)	803 (41.78)	51 (46.36)	30 (24.59)	32 (30.77)	855 (41.42)	138 (25.84)	166 (31.44)	255 (43.52)	318 (62.23)

Table 3—Continued

	Whole group	Grouped by sex		Grouped by race			Grouped by ethnicity		Grouped by age, years			
		Male	Female	White	Black	Other	Latino	Not Latino	18–34	35–50	51–64	65–92
Moderate stress (14–26)	1,051 (48.30)	182 (42.03)	864 (49.91)	922 (47.97)	49 (44.55)	66 (54.10)	59 (56.73)	988 (47.87)	318 (59.55)	288 (54.55)	268 (45.73)	174 (34.05)
High stress (>26)	234 (10.75)	25 (5.77)	209 (12.07)	197 (10.25)	10 (9.09)	26 (21.31)	13 (12.50)	221 (10.71)	78 (14.61)	74 (14.02)	63 (10.75)	19 (3.72)
BRS (n = 2,168) Mean score (SD)	20.89 (5.17)	22.18 (5.07)	20.56 (5.15)	20.96 (5.14)††	21.65 (5.16)††	19.14 (5.33)††	20.79 (4.59)	20.89 (5.20)	19.71 (4.95)‡‡	20.03 (5.26)‡‡	21.12 (5.26)‡‡	22.66 (4.64)‡‡
Low resilience (<4)	41 (1.88)	6 (1.39)	35 (2.02)	39 (2.03)	0 (0.00)	1 (0.82)	2 (1.92)	39 (1.89)	5 (0.94)	5 (0.95)	14 (2.39)	16 (3.13)
Not low resilience (≥4)	2,135 (98.12)	427 (98.61)	1,696 (97.98)	1,883 (97.97)	110 (100.00)	121 (99.18)	102 (98.08)	2,025 (98.11)	529 (99.06)	523 (99.05)	572 (97.61)	495 (96.87)
COVID-19 diagnosis, participant (n = 2,171)	21 (0.97)	3 (0.70)	18 (1.04)	15 (0.78)	4 (3.64)	1 (0.82)	1 (0.96)	20 (0.97)	7 (1.31)	5 (0.95)	4 (0.69)	5 (0.98)
COVID-19 diagnosis, household (n = 2,164)	18 (0.83)	1 (0.23)	16 (0.93)	13 (0.68)	3 (2.75)	2 (1.64)	1 (0.97)	17 (0.83)	4 (0.75)	5 (0.95)	5 (0.86)	4 (0.76)
Income has changed because of COVID-19 (n = 2,140)	636 (29.72)	117 (27.40)	515 (30.28)	555 (29.35)	41 (37.61)	36 (30.25)	42 (40.78)	591 (29.11)	178 (33.71)	192 (37.07)	191 (33.16)	72 (14.37)
Income change (n = 636)												
Decreased a lot	237 (37.26)	48 (41.03)	188 (36.50)	201 (36.22)	21 (51.22)	13 (36.11)	26 (61.90)	211 (35.70)	64 (35.96)	77 (40.10)	73 (38.22)	22 (30.56)
Decreased a little	328 (51.57)	54 (46.15)	271 (52.62)	293 (52.79)	12 (29.27)	21 (58.33)	13 (30.95)	312 (52.79)	94 (52.81)	92 (47.92)	98 (51.31)	42 (58.33)
Increased a little Increased a lot	54 (8.49) 17 (2.67)	10 (8.55) 5 (4.27)	44 (8.54) 12 (2.33)	47 (8.47) 14 (2.52)	6 (14.63) 2 (4.88)	1 (2.78) 1 (2.78)	1 (2.38) 2 (4.76)	53 (8.97) 15 (2.54)	14 (7.87) 6 (3.37)	18 (9.38) 5 (2.60)	15 (7.85) 5 (2.62)	7 (9.72) 1 (1.39)
Employment status												
Recently lost job because of COVID-19	210 (9.65)	48 (11.09)	160 (9.24)	171 (8.90)	19 (17.27)	17 (13.93)	14 (13.46)	195 (9.45)	62 (11.61)	51 (9.66)	64 (10.92)	32 (6.26)
Currently looking for a job	154 (7.08)	28 (6.47)	126 (7.28)	124 (6.45)	11 (10.00)	19 (15.57)	7 (6.73)	147 (7.12)	71 (13.30)	52 (9.85)	24 (4.10)	7 (1.37)
Working a job that cannot be done from home	361 (16.59)	77 (17.78)	284 (16.41)	306 (15.92)	29 (26.36)	22 (18.03)	18 (17.31)	343 (16.62)	109 (20.41)	115 (21.78)	104 (17.75)	29 (5.68)
Working from home	832 (38.24)	137 (31.64)	691 (39.92)	747 (38.87)	34 (30.91)	47 (38.52)	52 (50.00)	775 (37.55)	287 (53.75)	255 (48.30)	231 (39.42)	56 (10.96)

Table 3—Continued

	Whole group	Grouped by sex		Grouped by race			Grouped by ethnicity		Grouped by age, years			
		Male	Female	White	Black	Other	Latino	Not Latino	18–34	35–50	51–64	65–92
Not working to care for children	49 (2.25)	4 (0.92)	45 (2.60)	39 (2.03)	6 (5.45)	3 (2.46)	5 (4.81)	44 (2.13)	17 (3.18)	22 (4.17)	7 (1.19)	3 (0.59)
Not working and was not working before	692 (31.80)	154 (35.57)	532 (30.73)	627 (32.62)	27 (24.55)	28 (22.95)	13 (12.50)	677 (32.80)	73 (13.67)	76 (14.39)	164 (27.99)	370 (72.41)
Household member has lost job because of COVID-19	94 (4.32)	15 (3.46)	79 (4.56)	85 (4.42)	5 (4.55)	4 (3.28)	8 (7.69)	85 (4.12)	32 (5.99)	28 (5.30)	25 (4.27)	9 (1.76)
Other (e.g., working part from home and part from work)	233 (10.71)	58 (13.39)	173 (9.99)	204 (10.61)	9 (8.18)	14 (11.48)	6 (5.77)	225 (10.90)	37 (6.93)	42 (7.95)	59 (10.07)	93 (18.20)
Lockdown status												
No stay-at-home order	200 (9.19)	51 (11.78)	149 (8.61)	170 (8.84)	16 (14.55)	13 (10.66)	11 (10.58)	188 (9.11)	38 (7.12)	68 (12.88)	55 (9.39)	37 (7.24)
Ordered to stay home except for essential workers	794 (36.49)	156 (36.03)	634 (36.63)	682 (35.48)	49 (44.55)	53 (43.44)	55 (52.88)	735 (35.61)	238 (44.57)	181 (34.28)	201 (34.30)	166 (32.49)
In process of reopening	1,628 (74.82)	310 (71.59)	1,306 (75.45)	1,442 (75.03)	79 (71.82)	92 (75.41)	60 (57.69)	1,564 (75.78)	400 (74.91)	405 (76.70)	437 (74.57)	373 (72.99)
Other	20 (0.92)	3 (0.69)	17 (0.98)	19 (0.99)	0 (0.00)	1 (0.82)	0 (0.00)	20 (0.97)	2 (0.37)	4 (0.76)	7 (1.19)	6 (1.17)
How hard has it been to make ends meet over last 30 days? (n = 2,174)												
Very hard	102 (4.69)	20 (4.62)	82 (4.74)	83 (4.32)	9 (8.18)	9 (7.38)	5 (4.81)	97 (4.70)	21 (3.93)	44 (8.33)	31 (5.29)	6 (1.18)
Hard	163 (7.50)	29 (6.70)	134 (7.75)	132 (6.88)	11 (10.00)	15 (12.30)	21 (20.19)	141 (6.84)	41 (7.68)	54 (10.23)	49 (8.36)	18 (3.54)
Not hard, not easy	756 (34.77)	138 (31.8)	614 (35.51)	651 (33.91)	41 (37.27)	54 (44.26)	40 (38.46)	714 (34.63)	176 (32.96)	191 (36.17)	241 (41.13)	143 (28.09)
Easy	600 (27.60)	117 (27.02)	479 (27.70)	544 (28.33)	31 (28.18)	24 (19.67)	24 (23.08)	572 (27.74)	181 (33.90)	128 (24.24)	137 (23.38)	149 (29.27)
Very easy	553 (25.44)	129 (29.79)	420 (24.29)	510 (26.56)	18 (16.36)	20 (16.39)	14 (13.46)	538 (26.09)	115 (21.54)	111 (21.02)	128 (21.84)	193 (37.92)
How hopeful are you about your financial situation? (n = 2,171)												
Pretty hopeful	887 (40.86)	202 (46.65)	681 (39.46)	792 (41.29)	55 (50.46)	30 (24.59)	37 (35.58)	848 (41.17)	95 (17.82)	79 (14.96)	53 (9.06)	21 (4.12)
More or less hopeful	1,052 (48.46)	190 (43.88)	856 (49.59)	926 (48.28)	47 (43.12)	70 (57.38)	54 (51.92)	995 (48.30)	323 (60.60)	323 (61.17)	397 (67.86)	405 (79.41)
Not hopeful at all	232 (10.69)	41 (9.47)	189 (10.95)	200 (10.43)	7 (6.42)	22 (18.03)	13 (12.50)	217 (10.53)	115 (21.58)	126 (23.86)	135 (23.08)	84 (16.47)

Table 3—Continued

	Whole group	Grouped by sex		Grouped by race			Grouped by ethnicity		Grouped by age, years			
		Male	Female	White	Black	Other	Latino	Not Latino	18–34	35–50	51–64	65–92
Had difficulty paying bills in last 30 days (n = 2,169)	**303 (13.97)**	63 (14.58)	240 (13.91)	246 (12.85)	27 (24.55)	25 (20.49)	28 (26.92)	274 (13.32)	71 (13.30)	115 (21.78)	94 (16.12)	22 (4.34)
How satisfied are you with your present financial situation? (n = 2,172)												
Very satisfied	469 (21.59)	111 (25.64)	355 (20.56)	433 (22.56)	18 (16.51)	14 (11.48)	17 (16.35)	450 (21.84)	87 (16.29)	79 (15.02)	121 (20.68)	176 (34.51)
Somewhat satisfied	663 (30.52)	131 (30.25)	531 (30.75)	600 (31.27)	27 (24.77)	30 (24.59)	26 (25.00)	635 (30.83)	182 (34.08)	164 (31.18)	145 (24.79)	167 (32.75)
Neither satisfied nor dissatisfied	415 (19.11)	77 (17.78)	335 (19.40)	356 (18.55)	31 (28.44)	25 (20.49)	18 (17.31)	395 (19.17)	104 (19.48)	98 (18.63)	122 (20.85)	89 (17.45)
Somewhat dissatisfied	440 (20.26)	76 (17.55)	359 (20.79)	374 (19.49)	23 (21.10)	37 (30.33)	35 (33.65)	403 (19.56)	113 (21.16)	118 (22.43)	143 (24.44)	63 (12.35)
Very dissatisfied	185 (8.52)	38 (8.78)	147 (8.51)	156 (8.13)	10 (9.17)	16 (13.11)	8 (7.69)	177 (8.59)	48 (8.99)	67 (12.74)	54 (9.23)	15 (2.94)

Data are presented as n (%) unless otherwise indicated. Bold comparisons are significant at $P < 0.05$. GED, General Educational Development; NA, not applicable. *ANCOVA $P < 0.001$. Race was not a significant covariate. †ANCOVA $P < 0.001$. Age and income were significant covariates (both $P < 0.001$). Age 18–34 compared with 51–64 ($P < 0.05$) and 65–92 years ($P < 0.001$). Age 35–50 compared with 65–92 years ($P < 0.001$). ‡ANCOVA $P < 0.001$. Race, age, sex, and income were significant covariates (all $P < 0.01$). White compared with Black ($P < 0.05$). Black compared with Other ($P < 0.01$). Age, sex, and income were significant covariates (all $P < 0.001$). Age 18–34 compared with 51–64 ($P < 0.01$) and 65–92 years ($P < 0.001$). Age 51–64 compared with 65–92 years ($P < 0.05$). §ANCOVA $P < 0.001$. Race ($P < 0.05$) and age, sex, and income were significant covariates (all $P < 0.01$). White compared with Black ($P < 0.05$). Black compared with Other ($P < 0.05$). ‖ANCOVA $P < 0.001$. Age, sex, and income were significant covariates (all $P < 0.001$). Age 18–34 compared with 51–64 and 65–92 years (both $P < 0.001$). Age 35–50 compared with 51–64 and 65–92 years (both $P < 0.001$). ¶ANCOVA $P < 0.001$. Age, sex, and income were significant covariates (all $P < 0.001$). White compared with Black ($P < 0.001$). #ANCOVA $P < 0.001$. Race ($P < 0.01$) and age, sex, and income were significant covariates (all $P < 0.001$). White compared with Black ($P < 0.05$). Black compared with Other ($P < 0.001$). Age 35–50 compared with 51–64 and 65–92 years ($P < 0.001$). **ANCOVA $P < 0.01$. Age, sex, and income were significant covariates (all $P < 0.001$). Age 51–64 compared with 65–92 years ($P < 0.001$). ††ANCOVA $P < 0.001$. Age, sex, and income were significant covariates (all $P < 0.001$). Black compared with Other ($P < 0.01$). ‡‡ANCOVA $P < 0.001$. Age, sex, and income were significant covariates (all $P < 0.001$). Age 51–64 ($P < 0.01$) and 65–92 years ($P < 0.001$). Age 18–34 compared with 51–64 ($P < 0.01$) and 65–92 years ($P < 0.001$).

consequences of COVID-19 exposure and recovery following COVID-19 infection (37).

The current study furthers our understanding of the emotional and behavioral impacts of the COVID-19 pandemic on individuals with and without diabetes, particularly in light of the drastic increase in anxiety and depression during the pandemic. These data help to characterize the level of emotional burden resulting from this unprecedented set of events. Findings from this study outline the magnitude and scope of the emotional impact of these events and inform the adaptation of existing mental health interventions that may be used in the future, particularly as the pandemic continues.

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