

# Stress and depression among individuals with low socioeconomic status during economic inflation

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## SUMMARY

Financial hardship has been associated with increased levels of stress and can potentially lead to poor mental health and mental disorders. This study seeks to explore the association between stress due to inflation and depression in the United States (US). We hypothesized that inflation caused higher stress which was associated with increased depression among US adults. The Census Household Pulse Survey (HPS) week 53 (January 4 – January 16, 2023), issued by US Census Bureau, comprises of survey data from randomly selected individuals across the nation with an approximately 6% response rate. The HPS survey includes 54,611 individuals, where nearly 75% of adults reported experiencing stress due to inflation. A significantly higher percentage of adults with stress reported depression (28.2% vs. 6.8%) compared to those without stress. When grouping individuals by socioeconomic status (SES), the association of stress with depression was more pronounced in the low SES group than those in the high SES group. These results suggest that stress has a stronger association with depression among individuals with lower SES status during periods of economic inflation. Our data indicate that interventions and support systems that address mental health issues related to stress may need to be tailored differently for individuals with varying socioeconomic backgrounds.

## INTRODUCTION

Stress can have negative effects on an individual's overall well-being by decreasing happiness, impairing sleep quality, disrupting cognitive function, and increasing the risks of anxiety, ultimately reducing quality of life. Financial hardship has been associated with increased levels of stress and can potentially lead to poor mental health and mental disorders such as depression (1). During recent periods of major worldwide recessions, such as the Great Recession which occurred from 2007-2009 as well as after the COVID-19 pandemic in 2020-2022, positive correlation between stress and economic crisis was reported which subsequently resulted in an increased rate of mental health disorders including depression, anxiety, and suicide (2-4). For example, among patients who visited their primary care physicians in Spain, the depression rate increased from 28.9% in 2006

to 47.5% in 2010 (2). Similarly, the suicide rate increased by 4.2% among European men and 6.4% among American men in 2009 compared to rates during the period of 2000-2007 (2). The recession that occurred after the COVID-19 pandemic (2020-2022) caused prices to spike significantly in the United States (US) (3). The depression rates were much higher (42.9%) among individuals in the low-income group (42.9%) than individuals in the high-income group (14.0%) (4). In economics, a sustained increase in the general price level, known as inflation, is often measured using an index of consumer prices. This index, called the Consumer Price Index (CPI), measures the cost of living at a given time relative to a base year (5). Recently, in the US, the CPI rose by 4.9% over the past year (April 2022-2023) (6). Inflation, characterized by rising prices, can increase the cost of living and reduce purchasing power, subsequently leading to financial difficulties for individuals.

Socioeconomic status (SES) is defined as a measure of one's combined economic and social status. In general, a low SES represents a lower income, unemployment, or lower education level (7). These factors are frequently correlated as individuals with low income tend to have less educational attainment, limited occupational prestige, and reduced social community support (8). Inflation can disproportionately affect families and individuals with a low SES (9). These individuals were reported to have higher risks of losing stable housing, losing jobs, and increasing credit debt during an economic recession than people with high levels of SES (9). Families with lower household income, lower parental education, and parental unemployment reported more stressful life situations than families with high SES (10). Individuals with low SES or high stress also reported having a higher rate of mental health disorders (10,11). Even though inflation differs from recession in terms of its magnitude and duration, the financial impact on individuals with low SES is quite similar (12).

Depression is one of the most common mental health disorders. Prior to COVID-19, a national survey study showed the 12-month and lifetime prevalence of depression ranged from 10.4% to 20.6% respectively (13). In recent years, the number of US adults with depression has increased (14). It was reported that the prevalence of depression in US was more than 3-times higher during the COVID-19 pandemic compared to pre-COVID-19 times (15). Individuals with low SES reported a greater burden of depression and severe depression symptoms can be sustained among 3-12% of patients with post-COVID-19 syndrome (15-16). With the worsening of global economic inflation during the post-COVID year (2023), it is necessary to determine the prevalence of

depression and its association with an individual's stress due to inflation, especially among individuals of different SES conditions and demographic characteristics.

We hypothesized that current economic inflation can be associated with increased stress and depression, especially among individuals of low SES. Therefore, we analyzed nationally representative survey data, which includes information on individuals' SES, stress levels due to inflation, and depression conditions. Our results indicated that inflation was strongly associated with depression among low SES individuals. Understanding the association between economic inflation and mental health conditions among vulnerable populations can enhance psychiatric screening and illness prevention, early diagnosis, and treatment. Implementing effective interventions will help reduce economic stress and potentially minimize the prevalence of mental disorders such as depression during times of economic inflation.

## RESULTS

### Demographic and socioeconomic factors were associated with stress due to inflation

In this study, we analyzed data from Census Household Pulse Survey (HPS) Week 53, a nationally representative survey with data from US households on economic and social matters. Individuals were randomly selected by the US Census Bureau, and the response rate of HPS Week 53 was 6.53%. Demographic variables included age, sex, and number of kids in the household, and socio-cultural factors included race and ethnicity. For example, among all survey

respondents, 50.9% were female, 63.6% identified as non-Hispanic White (NHW), and 13.7% reported incomes at the poor level (**Table 1**). Additionally, we found that 74.7% of survey respondents expressed stress due to inflation (**Table 1**). The overall prevalence of depression was 22.8%. We observed that individuals aged 18-34 experienced more stress than older individuals, with 79.1% of 18-34 year olds reporting stress vs. 58.9% for those aged 75+ ( $p < 0.001$ , **Table 1**). In terms of female participants, 77.3% reported experiencing stress, compared to 22.7% who reported no stress ( $p < 0.001$ , **Table 1**). Similarly, more male participants reported experiencing stress than ones without (71.6% vs. 28.4%,  $p < 0.001$ , **Table 1**). Additionally, individuals with stress due to inflation had lower SES compared to individuals without stress. For example, more individuals with below high school education levels were found in the stress group compared with the no-stress group (83.9% vs. 16.1%,  $p < 0.001$ , **Table 1**). In addition, more individuals with poor income levels were in the stress group than those in the no-stress group (87.6% vs. 12.4%,  $p < 0.001$ , **Table 1**). When individuals were divided into high versus low SES based on their education and income levels (high SES: bachelor's degree or above and high income), 80.6% of individuals with low SES had stress due to inflation compared to 19.4% of low SES individuals without stress ( $p < 0.001$ , **Table 1**).

### Depression was associated with stress due to inflation

When participants were divided into two groups due to their expression of stress, more individuals experienced depression symptoms with stress than those without stress (28% vs. 7%,  $p < 0.001$ , **Figure 1A**). Depression was measured using the Personal Health Questionnaire (PHQ-2). When we considered individuals' SES, we observed that individuals with low SES tended to have higher prevalence of depression than those with high SES (**Figure 1B**). Each SES factor including poverty, education, and income levels, higher poverty, lower education and income loss were all associated with higher depression levels in this study (**Figure 1C-E**).

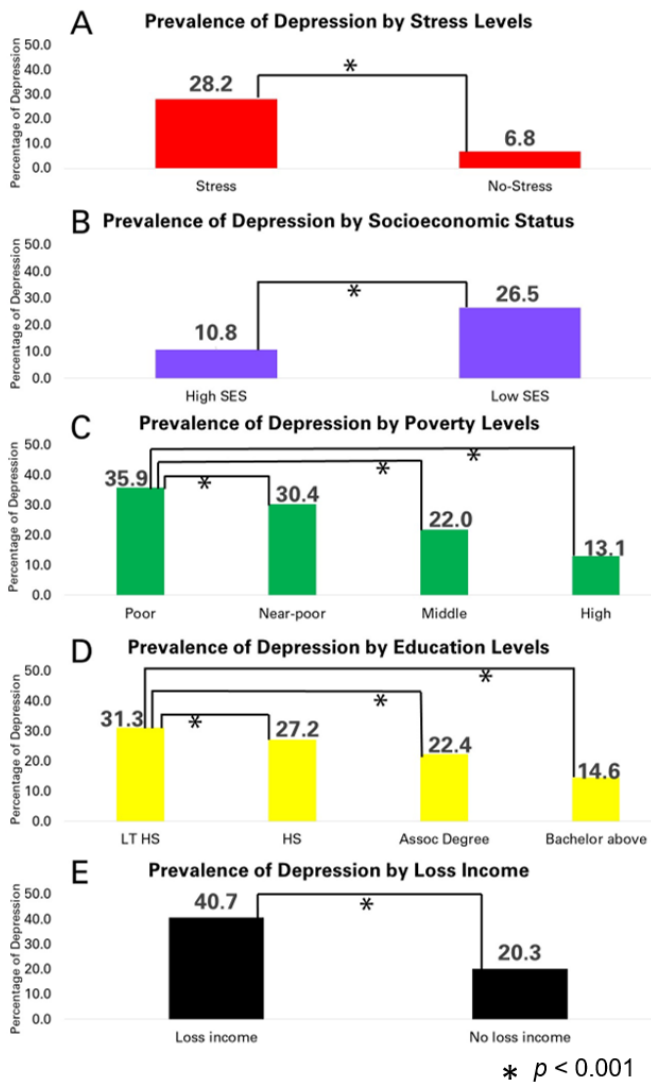
Furthermore, we used multivariable logistic regression to determine the association between stress and depression and found that depression was closely associated with inflation related stress. Even after adjusting for other demographic and socioeconomic factors, stress due to inflation had an adjusted odds ratio (AOR) of 3.96, indicating that the occurrence of stress was higher associated with the prevalence of depression (AOR=3.96 with 95% Confidence Interval (CI) of 3.37 to 4.66,  $p < 0.0001$ , **Table 2**). Individuals receiving less education or having low income also tended to have higher odds of suffering depression (**Table 2**). Regarding demographic factors, female individuals tended to be less depressed when compared with the male individuals (AOR=0.90, 95% CI 0.83-0.98,  $p = 0.0129$ , **Table 2**). Non-Hispanic Black (NHB) individuals tended to have less depression in comparison to the non-Hispanic White (NHW) individuals (AOR=0.75, 95% CI 0.64-0.87,  $p = 0.0002$ , **Table 2**). Our findings indicate that the most important contributors to depression are stress due to inflation and low SES.

### The relationship of stress due to inflation among high and low SES groups

We examined the association of stress due to inflation with depression in SES groups. For these analyses, we

Variables	Stress N, Wt%	Non-Stress N, Wt%	Variables	Stress N, Wt%	Non-Stress N, Wt%
	(37285, 74.7)	(17326, 25.3)		(37285, 74.7)	(17326, 25.3)
<b>Gender</b>			<b>Poverty level</b>		
Female	22479 77.3	8956 22.7	Poor	4182 87.6	625 12.4
Male	13961 71.6	8121 28.4	Near poor	6694 86.1	1195 13.9
Transgender	545 84.9	132 15.1	Middle income	11249 78.3	3707 21.7
Miss/Unknown	300 73.0	117 27.0	High income	12410 58.0	10921 42.0
			Miss/Unknown	2750 80.0	878 20.0
<b>Age group</b>			<b>No. of children in the household</b>		
18-34 years	6223 79.1	2073 20.9	0	23591 71.1	12816 28.9
35-44 years	7742 78.4	3035 21.6	1	5945 78.6	2101 21.4
45-54 years	7218 78.5	2724 21.5	2	4867 81.8	1677 18.2
55-64 years	7224 74.1	3291 25.9	3	1894 83.7	539 16.3
65-74 years	6481 67.3	4171 32.7	4	656 88.2	132 11.8
75+ years	2397 58.9	2032 41.1	5 or above	332 84.0	61 16.0
<b>Race and ethnicity</b>			<b>Health insurance</b>		
NHW	27274 72.3	13852 27.7	Yes	34967 73.9	16841 26.1
NHB	2925 76.4	1022 23.6	No	1740 84.8	323 15.2
Hispanic/Latino	3809 83.6	1022 16.4	Miss/Unknown	578 80.1	162 19.9
Asian	1629 70.3	926 29.7			
Others	1648 78.2	504 21.8	<b>Lost income</b>		
<b>Marital Status</b>			Yes	4233 89.8	622 10.2
Married	20360 72.1	11037 27.9	No	32986 72.7	16679 27.3
Widow	2056 72.0	984 28.0	Missing/Unknown	66 83.7	25 16.3
Separate/Divorced	7223 80.7	2282 19.3			
Never married	7508 78.0	2970 22.0	<b>SES</b>		
Missing/Unknown	138 76.1	53 23.9	High	9641 53.9	9460 46.1
<b>Education Levels</b>			Low	24894 80.6	6988 19.4
Below HS	874 83.9	165 16.1	Miss/Unknown	2750 80.0	878 20.0
High School	14459 81.0	3724 19.0			
Associate degree	4513 78.4	1319 21.6			
Bachelor's Degree or above	17439 62.7	12118 37.3			

**Table 1: Characteristic comparisons by stress due to inflation using census HPS week 53 data.** Characteristic comparisons were performed between individuals with stress due to inflation and ones without. We included 54,611 participants, among which 37,285 individuals had stress due to inflation and 17,326 ones without stress from HPS Week 53 data. All categorical variables were compared using Rao-Scott chi-square test between stress and non-stress groups. Abbreviations: HPS, Household Pulse Survey; NHW, non-Hispanic White; NHB: non-Hispanic Black; HS: high school; N, number; Wt%, weighted percentage.



**Figure 1: Comparison of depression among individuals of different stress and socioeconomic statuses.** (A) Overall prevalence of depression among individuals with or without stress. (B) The prevalence of depression by low/high SES. (C) The prevalence of depression by poverty levels (poor, near poor, middle, and high). (D) The prevalence of depression by education levels (bachelor's degree or above, associate degree, high school, and below high school levels). (E) The prevalence of depression by income loss (Yes/No). Abbreviations: SES, socioeconomic status; LT HS, low than high school; HS, high school. In terms of the depression levels, weighted percentages of all categorical variables were compared using Rao-Scott chi-square test (A: stress vs. no-stress; B: high SES vs. low SES; C: poor vs. near poor; poor vs. middle income; and poor vs. high income; D: LT HS vs. HS; LT HS vs. associate degree; LT HS vs. bachelor's degree or above; and E: loss income vs. no loss income). Statistically significant differences were found in all groups when prevalence of depression was compared among individuals with different stress and socioeconomic statuses ( $p < 0.001$ ).

considered adults with education of bachelor's degree or above and high income as high SES and others as low SES. Adults who were missing income information were not included in this analysis. We conducted two logistic regressions to determine the association between stress and depression among two different groups: one for the high SES group and the other for the low SES group. In the high SES

group, we found that adults with stress were 3.59 (95% CI 3.05-4.21,  $p < 0.0001$ ) times as likely as those without stress to report depression (Table 3). However, in the low SES group, adults with stress were 4.41 (95% CI 3.60-5.41,  $p < 0.0001$ ) times as likely as those without stress to report depression, indicating the association of stress with depression was more pronounced in the low SES group (Table 3).

**DISCUSSION**

Economic stress occurs commonly and often escalates during periods of economic recession. Our study reveals that nearly three-quarters of the participants reported feeling very or moderately stressed due to economic inflation. This

	AOR	95%CI	p-value
<b>Stress due to inflation</b>			
No (ref)			
Yes	3.96	3.37-4.66	<0.0001
<b>Social Determinants of Health</b>			
Education level			
Bachelor's degree or above (ref)			
Associate College degree	1.24	1.11-1.39	0.0002
High school	1.45	1.33-1.59	<0.0001
Lower than High school	1.48	1.17-1.88	0.0011
Poverty Status			
High income (ref)			
Middle income	1.38	1.22-1.55	<0.0001
Near Poor	1.79	1.55-2.06	<0.0001
Poor	2.06	1.73-2.46	<0.0001
Loss of Income in the past 4 weeks			
No (ref)			
Lost Income	1.85	1.62-2.11	<0.0001
Health Insurance			
Yes (ref)			
No	1.17	0.94-1.44	0.1524
Marital status			
Married (ref)			
Widowed	1.31	1.09-1.57	0.0034
Separated or Divorced	1.55	1.33-1.81	<0.0001
Never married	1.43	1.27-1.60	<0.0001
<b>Demographic Factors</b>			
Age Groups in years			
18-34 Years (ref)			
35-44 Years	0.79	0.72-0.87	<0.0001
45-54 years	0.73	0.64-0.82	<0.0001
55-64 years	0.66	0.58-0.75	<0.0001
65-74 years	0.38	0.33-0.45	<0.0001
75, or older	0.31	0.25-0.37	<0.0001
Gender			
Male (ref)			
Female	0.90	0.83-0.98	0.0129
Number of Kids in the Household			
	0.90	0.85-0.94	<0.0001
<b>Socio-cultural Factors</b>			
Race and ethnicity			
NHW (ref)			
NHB	0.75	0.64-0.87	0.0002
Hispanic	0.90	0.79-1.03	0.1173
Asian	0.84	0.66-1.07	0.1533
Others	0.97	0.81-1.16	0.7203

**Table 2: The association between depression and stress due to inflation with the adjustment of demographic and socioeconomic variables.** Multivariable logistic regression was performed to determine the association between depression and stress with the adjustment of other variables. We included 54,611 participants from HPS Week 53 data. Adjusted Odds Ratio (AOR) with its 95% confidence interval (CI) was reported in the Table. Abbreviations: HPS, Household Pulse Survey; AOR, Adjusted odds ratios; CI, Confidence interval; ref, reference; NHW, non-Hispanic White; NHB, non-Hispanic Black. Individuals missing indicators for poverty status, loss of income, health insurance, and marital status were included in the analyses but are not presented in the table.



	High SES AOR, 95% CI, p value	Low SES AOR, 95% CI, p value
<b>Stress due to inflation</b>		
No (ref)		
Yes	3.59 [3.05-4.21], <0.0001	4.41 [3.60-5.41], <0.0001
<b>Social Determinants of Health</b>		
Loss of Income in the past 4 weeks		
No (ref)		
Lost Income	2.28 [1.75-2.98], <0.0001	1.91 [1.63-2.23], <0.0001
Health Insurance		
Yes (ref)		
No	0.98 [0.52-1.85], 0.9617	1.29 [1.04-1.60], 0.0191
Marital status		
Married (ref)		
Widowed	1.80 [1.13-2.89], 0.0127	1.32 [1.10-1.59], 0.0023
Separated or Divorced	1.71 [1.29-2.27], 0.0001	1.72 [1.47-2.02], <0.0001
Never married	1.59 [1.30-1.95], <0.0001	1.57 [1.37-1.79], <0.0001
<b>Demographic Factors</b>		
Age Groups in years		
18-34 Years (ref)		
35-44 Years	1.03 [0.80-1.34], 0.7952	0.75 [0.66-0.84], <0.0001
45-54 years	0.77 [0.59-0.99], 0.0379	0.74 [0.64-0.86], <0.0001
55-64 years	0.57 [0.44-0.73], <0.0001	0.69 [0.58-0.81], <0.0001
65-74 years	0.36 [0.26-0.49], <0.0001	0.41 [0.34-0.50], <0.0001
75, or older	0.36 [0.25-0.51], <0.0001	0.32 [0.26-0.40], <0.0001
Gender		
Male (ref)		
Female	0.86 [0.73-1.02], 0.0712	0.91 [0.82-1.01], 0.0862
Number of Kids in the Household	0.77 [0.69-0.85], <0.0001	0.94 [0.89-0.99], 0.0265
<b>Socio-cultural Factors</b>		
Race and ethnicity		
NHW (ref)		
NHB	0.89 [0.62-1.29], 0.5393	0.74 [0.61-0.88], <0.0001
Hispanic	1.34 [1.05-1.71], 0.0163	0.93 [0.81-1.08], 0.3465
Asian	0.71 [0.52-0.97], 0.0313	0.96 [0.70-1.33], 0.8078
Others	1.14 [0.78-1.66], 0.5001	1.01 [0.83-1.22], 0.9533

**Table 3: The association between depression and stress due to inflation among individuals of High and Low SES with the adjustment of other demographic and socio-cultural variables.** Multivariate logistic regression was performed to determine the association between depression and stress among individuals of High and Low SES with the adjustment of other variables. Individuals with a bachelor's degree or higher and high income were classified into the high SES group, while those without a bachelor's degree or high income were classified into the low SES group. Adjusted Odds Ratio (AOR) with its 95% confidence interval (CI) was reported in the Table. Abbreviations: HPS, Household Pulse Survey; AOR, Adjusted odds ratios; CI, Confidence interval; ref, reference; NHW, non-Hispanic White; NHB, non-Hispanic Black. Individuals missing indicator for loss of income, health insurance, and marital status were included in the analyses but are not presented in the table.

suggests that economic stress is pervasive; hence, taking actions to control inflation and reducing stress among the population is imperative. Our study shows the rate of depression in January 2023 from HSP survey is 22.84%, and this figure falls within the range of lifetime (29%) and current have/treated (17.8%) depression rates among US adults reported in 2023 (17). It is noteworthy that this prevalence is higher than the depression rate reported in 2017 (17).

Stress is also associated with depression (18). Different types of stress have been reported such as psychogenic stress from psychological or emotional factors, and economic stress specifically from financial difficulties or economic uncertainty (1,18). Although we can't equate inflation stress directly with economic stress, our study findings confirm the association between stress due to inflation and depression. With odds nearly 4 times higher of having depression among individuals with stress due to inflation than others without stress, this inflation-induced stress acts as an inevitable factor and contributes heavily to depression, indicating the essential role of financial burden on depression. More importantly, when individuals of high versus low SES were analyzed separately, stress plays a more pivotal role in the association of depression among individuals of low SES than ones with high SES. These findings also suggest that during economic inflation: to avoid higher prevalence

of depression, it is essential to focus on providing aid to people with increased stress and the populations with low SES. If healthcare providers can implement strategies to reduce stress, provide medical and financial help, and issue screening for depression with early treatment, the prevalence of mental illness during times of economic inflation may be reduced (19-21).

Determining the prevalence of depression and its associated factors has great healthcare significance, especially during economic recession and inflation. It has been reported that during economic recessions, many hospitals were closed including outpatient clinics (22). The government may also reduce the healthcare budget to overcome such economic recession (23). As economic inflation can be closely related to recession, policymakers should act as early as possible during the inflation phase (24). Due to the increased number of individuals with depression, it should be recommended to expand certain healthcare services to deal with the increased number of mental health disorders (25). The data presented in this study suggest that care can be focused on specific target populations, thus saving healthcare costs.

Our study possesses several strengths. This study used HPS, one of the national representative data reported via US Census Bureau with a relatively large-scale sample size (26,27). The survey uses a probability-based sample of households from the US Census Bureau's Master Address File to ensure that it accurately represents the US population (26,27). Using such survey data could reflect the current prevalence of depression among different populations across the nation. We used a multivariable logistic regression analysis to determine the association between inflation-related stress and depression, with the adjustments of all other common and relevant variables that were reported in the previous studies such as age, gender, and SES (28,29).

Our study also has its limitations. We did not determine the causative effects of depression and stress levels since stress can be caused by multiple factors and many studies have already addressed the association between depression and stress (30,31). Therefore, we only focused on the association between stress due to inflation and depression. While many studies included other mental disorders and classified the severity of the illnesses, we only used depression since it is considered one of the most prevalent mental conditions and we could not further separate the disorders by severity. We were limited to the questions of the HPS study, which included patient demographics and questions regarding the price-related stress increases whereas other factors were not analyzed. More comprehensive data were not included such as the dynamic changes of inflation over time and the medical outcomes of economic impacts on mental health (for example, any worsening of the mental conditions resulting in hospitalizations or clinical visits, etc.). Additionally, this study analyzed survey data in which levels of stress and depression were self-reported, potentially introducing biases among individuals due to the lack of standardization. Future large-scale prospective studies focused on risks associated with depression due to economic inflation are warranted to further identify the potential mechanism(s).

In conclusion, we found that three-quarters of individuals experienced stress due to inflation. Those affected by stress were nearly four times more likely to suffer from depression when compared to individuals without stress. More importantly,

individuals with low SES emerged as a particularly vulnerable group with a higher prevalence of depression during economic inflation. These findings suggest the urgency of implementing tailored interventions and support systems to address mental health challenges with stress, especially among individuals from diverse socioeconomic backgrounds.

## MATERIALS AND METHODS

### Obtaining data from the Census Household Pulse Survey

This study is a cross-sectional observational study using data from the Census Household Pulse Survey (HPS). The Census Bureau issued the HPS to households in the US to collect information including individuals' SES, levels of stress due to inflation, and depression conditions. The survey was conducted periodically every two weeks starting from October 2021. Data from the 53rd Week of the HPS data (January 4, 2023, to January 16, 2023), which was the first cycle of data in 2023, was analyzed. As the data are completely de-identified, public data, this study was considered as non-human subjects by regional institutional review boards.

### Study Participants

HPS (Week 53) data included 68,504 adults aged 18 or older in the US. This study focused on individuals with stress due to inflation and depression, so we only included participants who reported a price increase in their areas. We excluded participants who had missing data in depression or stress due to inflation yielding 54,611 individuals. Using the replicate weights obtained from HPS data, these individuals accounted for a weighted national population of 193,270,519 (~193.2 million) adults in the US.

### Identifying individuals with Depression (Outcome Variable)

We used the Personal Health Questionnaire (PHQ-2) for depression measurements (Table 4). The answers to both questions are not at all (0 points), several days (1 point), more than half the days (2 points), and nearly every day (3 points). The four-point Likert-scale was used to calculate the total scores (32). Participants with a total score of 3 or greater on the PHQ-2 were considered to have depression (32). Therefore, we categorized individuals as either having depression (score 3-6) or not having depression (score 0-2).

### Key Variable: Stress Due to Inflation (Yes/No)

The key variable of interest was the level of stress due to inflation (Table 4). We classified individuals having stress due to inflation whose responses to the level of stress due to inflation were either "very stressful" or "moderately stressful" and ones having no stress if the answers were either "a little stressful" or "not stressful at all."

### Other explanatory variables

Other variables used in our analyses included education (less than high school, high school, some college and associate, and bachelor's degree or above), poverty status using federal poverty line (poor, near poor, middle income, and high income), loss of income from employment by any household member in the past 4 weeks (yes, no), health insurance (yes, no), and marital status (married, widowed, divorced and separated, and never married). We also included a missing/unknown indicator for poverty status, loss of

	Questionnaires	Answers
PHQ-2 (depression)	1. Over the last 2 weeks, how often have you been bothered by having little interest or pleasure in doing things? 2. Over the last 2 weeks, how often have you been bothered by feeling down, depressed, or hopeless?	1. Not at all (0 points) 2. Several days (1 point) 3. More than half the days (2 points) 4. Nearly every day (3 points)
Level of stress	How stressful, if at all, has the increase in prices in the last two months been for you?	Yes: who answered "very stressful" or "moderately stressful" No: who answered either "a little stressful" or "not stressful at all"

**Table 4: Details of survey questionnaires.** Survey questionnaires from Census Household Pulse Survey include two questions (i.e., PHQ-2) for depression screening and one question for determining individual's level of stress due to inflation.

income, health insurance, and marital status. We defined high SES as individuals who received a higher level of education (bachelor's degree or above) and had higher income, whereas individuals with either lower levels of education (i.e., other than bachelor's degree or above) or lower income (i.e., other than high income) were considered low SES. Demographic variables included age, sex (male, female, transgender, and unknown), and number of kids in the household. Race and ethnicity (NHW, NHB, Hispanic, or others) was considered as a socio-cultural factor.

### Statistical Analysis

Weighted percentages of each variable from the study were reported and compared between stress and no stress groups, poverty status, education, loss of income, and health insurance. A Rao-Scott Chi-square test was used for all categorical comparisons among groups. In addition, a multivariate logistic regression was performed to determine the adjusted association of stress due to inflation with depression. The binary outcome (individuals with or without depression) was used as the dependent variable, and the key independent variable was stress due to inflation. The adjusted variables included the SES (education level, poverty status, loss of income, health insurance), demographic (age, gender, marital status, number of kids in the household), and socio-cultural variable (race and ethnicity). AOR with 95% CI was reported accordingly. In this study, all analyses with weighted replicates were performed by SAS 9.4.

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