Mental Health Care Consumption in the Pandemic: Estimating Impacts of Benefit Payments and Increased Access

Madeline Reed

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Abstract

Using the US Census Bureau's Household Pulse Survey, this study estimates the rate that people reported delaying needed mental health care services during the pandemic. Access to mental health increased with use of remote services, while households also had expanded liquidity to pay for out of pocket costs. However, neither stimulus payments nor higher levels of state tax income tax credits are associated with mental health care consumption. Especially for economically vulnerable households, the demands of other consumption are a higher priority than mental health care.

1 Introduction

The COVID-19 pandemic has impacted both household finances and demand for mental health care. The US Census Pulse Survey shows that over 17% of lower income people reported needing mental health services but not receiving any counseling or therapy. Out of pocket costs are a leading reason people avoid mental health care (Wood et al., 2018). The pandemic provides a unique context to understand mental health care consumption, especially in light of government assistance programs and relaxed mental health services regulations.

The out of pocket costs of mental health care may be especially binding for low-income households with little savings. Pandemic income assistance, as well as income tax refunds, provided liquidity to households. To the extent people delay needed mental health care because of financial constraints, these income supports could reduce the rate of people reporting delayed mental health care consumption.

Mental health counseling can range from $65-250 per therapy session. While insurance may cover mental health therapy, cost-sharing means people still can have significant co-pays or deductibles. Gross et al. (2020) shows that consumers who lack funds needed to pay for health care will delay care until

they receive income, labeled liquidity sensitivity. For example, when low-wealth older people have co-payments for monthly prescriptions, they will delay their medications until they receive their Social Security benefit payments (Gross et al., 2020). Mental health treatments are often more frequent than medications (weekly or bi-weekly) and have larger co-payments than prescriptions. Liquidity sensitivity is likely an important factor to understand the delay of mental health care services.

While any delayed health care consumption can be harmful, delayed mental health care may result in people turning to more harmful substitutes, including substance use and alcohol consumption, both of which increased during the pandemic (McKnight-Eily et al., 2021; Avena et al., 2021; MacMillan et al., 2021). Moreover, untreated mental health conditions can have negative effects on employment and earnings (Marcotte and Wilcox-Gök, 2001). Foregone mental health services can have effects on other family members and the broader community (Knapp and Wong, 2020). The COVID-19 pandemic highlighted these issues, and also provides a useful context to understand the relationship between liquidity and accessing care (Aknin et al., 2021).

Federal policies have expanded access to mental health in recent decades. In 2008, Congress passed the Mental Health Parity and Addiction Equity Act (MHPAHA) in which group health plans could no longer put lifetime limits on coverage for mental health and substance use. Cost sharing could not be more expensive for mental health than for other medical services (Rowan et al., 2013; Goodell, 2014). Additionally, plans cannot have separate deductibles for mental health care.

Starting in March 2020, the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) provided the first of three Economic Impact Payments (EIPs). The Tax Relief Act (December 2020) provided a second EIPs. The American Rescue Plan Act in early March 2021 provided $1,400 per adult and $1,400 for each child or dependent. For a family of four, the combination of the three EIPs could have resulted in $11,400 in total relief payments in less than one calendar year. EIPs differed by household income with the third EIP having the lowest income payment. The first and second stimulus payments were phased out on a sliding scale of $5 for every $100 over the income limit of $75,000 ($150,000 for joint filers). The American Rescue Plan Act in 2021 had a lower income limit where individuals earning over $80,000 ($160,000 for joint filers) received no payments (IRS, 2021a). The third EIP provides more variation between the eligible and non-eligible and therefore is the focus for this study.

Overall spending among low-income households increased due to these payments (Chetty et al., 2020), with the largest effects for liquidity-constrained households (Baker et al., 2020). The effect of EIPs on health spending is less clear (Tsai et al., 2021; Dunn et al., 2021). The first EIP receipt was associated with fewer problems paying for daily expenses including food and utilities, but not medical care. One potential reason for no change in difficulty paying for medical care is that the first EIP was received during April of 2020 when restrictions for non-emergency health care were still in place. The third EIP,

when restrictions on medical care were no longer in place, was associated with a 27% increase in health spending and pharmacy expenses (Dunn et al., 2021).

While not specific to the pandemic, lower-income working families also experience an annual boost in liquidity when they receive income tax refunds. Prior studies show people shift consumption around the time that tax refunds are distributed in February and March each year (Jones and Michelmore, 2018, 2019). Farrell et al. (2018) find increases in health spending immediately after tax refunds, as does work by Dunn et al. (2021). Conversely, Hamad and Niedzwiecki (2019), found no increase in health expenditure in months of tax refunds. No prior study has examined use of mental health services, however.

Lower-income working families faced unique economic and social challenges during the pandemic (Karpman et al., 2020). Tax refunds may have played an important role, especially given the magnitude of EIP benefits during the pandemic. In addition, there are differences across states in the amount of state tax refunds, largely due to the Earned Income Tax Credit (EITC). In 2019, the average amount of federal EITC received was $2,461 (IRS, 2020). Over half of states (29) provide from 3% to 100% of the federal credit amount, or around $300-$500. This means some families in some states received additional liquidity at tax refund time, over and above federal supports and EIPs.

Both supply and demand of health care experienced shocks due to the pandemic. The Centers for Disease Control (CDC) issued guidelines that non-essential medical and dental procedures should be delayed on March 18th, 2020 (CMS, 2020). The CARES Act provided subsidies for mental health care, as well as permitting telephone-based services. The provisions reduced barriers to care at the same time that demand for mental health care may have increased. Compared to all other health care, mental health care declined the least in early 2020 due to substitution to telehealth Ziedan et al. (2020). Telehealth reduced patients' fear of exposure to COVID-19 (Ganson et al., 2020), as well as reduced transaction costs, travel time and other barriers to obtaining care. This may have been most effective in Health Professional Shortage Areas (HPSA) where access to office-based mental health providers is most limited and even people with insurance face higher costs from using out-of-network providers. Congress provided additional mental health funding for mental health and substance use services for targeted areas (Panchal et al., 2021).

Mental health care was transitioned to telehealth, however, some insurance plans do not cover or have higher cost sharing requirements for telehealth visits. To encourage use of telehealth, a portion of states have telehealth coverage and cost- sharing requirements. As of March 2021, 40 states have instituted requirements that state-regulated individual and group health insurance plans to cover telehealth visits (see Figure 1). Before the pandemic, 35 states required state-regulated individual and group health insurance plans to cover telehealth visits. In response to COVID-19 five states instituted telehealth

coverage requirements. Other states required insurers to limit cost sharing for telehealth. [1] (Volk et al., 2021). In response to COVID-19 seven states eliminated or lowered telehealth cost sharing. This study uses data from state telehealth policies to test whether the presence of state requirements are associated with less delays of mental health care (Volk et al., 2021). It is predicted that states with telehealth coverage requirements or cost-sharing requirements will have lower delay of mental health care.

This study investigates how the timing of the third EIPs and state EITC payments affected mental health care use among people who reported needing care. Both offer insights into the relative role of out of pocket costs relative to liquidity for people reporting delaying care.

Currently, studies of health care seeking during the pandemic have focused on involuntary care disruptions not initiated by the patient (Callison and Ward, 2021) or the demographic characteristics of those who have delayed or forgone health care in the first months of the pandemic (Anderson et al., 2021; Czeisler, 2020; Findling et al., 2020; Gonzalez et al., 2021; Smith and Blavin, 2021; Ganson et al., 2020).

This study most closely relates to the studies that investigated how policies influenced health and health care during the pandemic. Donnelly and Farina (2021) studies mental health outcomes but the delay of needed care. Evangelist et al. (2021), and also Berkowitz and Basu (2021a), study the role of unemployment benefits on health care seeking, but not mental health care specifically. Dunn et al. (2021) shows that during March 2021, when income tax refunds were received, health care spending increased. However, this study did not investigate mental health care seeking.

This study adds to the literature on health care seeking and policy in four ways. First, using bi-weekly data from August 2020 to July 2021 this study estimates a difference-in-difference-in-differences (DDD) association of mental health care seeking. Previous literature focused on the decline in health services in the spring (Ziedan et al., 2020) and summer of 2020 (Berkowitz and Basu, 2021b; Evangelist et al., 2021). These early declines in health care were likely in part driven from supply-side effects given restrictions on non-emergency and elective care. Mental health care experienced fewer supply side restrictions due to the transition to telehealth. Second, this study investigates the third federal EIPs and state EITC payments on mental health care use. This study includes a broader population than other studies of this period, and is not limited to studying health care seeking among the unemployed (Berkowitz and Basu, 2021b; Evangelist et al., 2021). Third, this study investigates how increased access to telehealth, through state regulations impacts the delay of mental health care. Fourth, while this study focuses on health care seeking during the pandemic, the findings contribute to the overarching literature on health care seeking among people experiencing liquidity constraints. Prior studies on income tax refunds and health care seeking arrive at differing conclusions (Hoynes et al., 2015; Markowitz et al., 2017; Rehkopf

[1] Before the pandemic, half of states required insurers to limit cost sharing for telehealth.

et al., 2014; Hamad and Rehkopf, 2015; Baker, 2008; Dunn et al., 2021; Hamad and Niedzwiecki, 2019). This study adds to the understanding of how increased liquidity affects health care consumption.

2 Data

This study uses the Census Household Pulse Survey public use data. The Pulse is a brief, internet-based survey fielded bi-weekly, and provides relevant national data on a range of social and economic topics. The sampling frame for the Pulse was drawn from the Census Bureau's Master Address File (MAF), which contains cell phone numbers along with email addresses for over 100 million residential addresses (Fields et al., 2020). Households were sent emails, and/or contacted via a cell phone call. The survey is intended to take less than 20 minutes. Questions about delaying of mental health care were fielded starting in August 2020. Throughout the survey collection an average of about 76,000 households a week responded. Phase 1 was collected weekly for twelve weeks from (April 23-July 2020) and later phases were collected in two-week intervals. The Pulse survey also tracked COVID-19 related shocks to employment, health, and food, housing, and economic security.

The sample for this study is from August 2020 through July 2021. The analytic sample is limited to working age adults (age 17-64) who did not have missing income or demographic characteristics. Additionally, respondents were removed if they had missing responses to the questions regarding delay of mental health care seeking or delay of any health care. The final sample size is 919,096. [2] The delay of mental health care is measured by the question: "At any time in the last 4 weeks, did you need counseling or therapy from a mental health professional, but DID NOT GET IT for any reason?" This question was collected from August 2020 through the July 2021 data used in this study.

Eligibility for the third EIPs and EITC payments is estimated using marital status and 2019 household income. For EITC eligibility the number of children is also used. The Pulse reports household income in categories and income is first assigned to the midpoint of the categorical income. Eligibility for the EIP provides variation based on differences in income and marital status. State EITC provides variation across states based on differences in state EITC generosity and within states (based on differences in number of children and marital status). The maximum Federal EITC refund is $538 for no children, $3,584 for 1 child, $5,920 for 2 children and $6,660 for three or more children. Twenty-nine states provide additional supplemental state EITC (See Figure Appendix A-3). The state EITC is a percentage of the federal amount ranging from 3% up to 85%. [3]

[2] For the State EITC the sample is limited to adults with 2019 household income under $75,000 and the sample size is 401,902.

[3] California and Wisconsin are estimated separately as these states have differential determination based on income and number of children. The variation in federal EITC and state EITC can be seen in figures Appendix A-1 and Appendix A-2 respectively.

Table 1 displays demographic characteristics of the working age adult population. The columns are separated by whether the adult delayed mental health care in the last four weeks. Adults who delay mental care are financially vulnerable and plausibly liquidity constrained. Delayed care is more prevalent among younger, not married, and lower income households, all of which are associated with lower levels of savings and access to credit. Uninsurance rates and public insurance rates are higher for adults who delayed mental health care compared to adults that did not delay. The demographic characteristics imply adults who delayed mental health care likely face financial barriers. The adults that delay mental health care are more likely to be eligible for the third EIPs and EITC payments than adults who did not delay care.

Table 1: Sample Characteristics by Delay of Mental Health Care

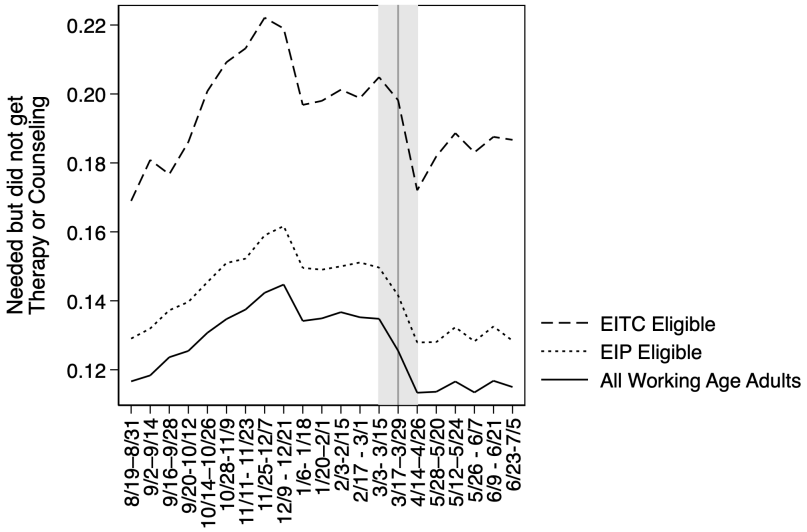
Variable	No Delay	Delayed	Diff
Less than 25,000	0.09	0.16	0.072***
	(0.00)	(0.00)	(0.001)
25,000 - 34,999	0.07	0.11	0.033***
	(0.00)	(0.00)	(0.001)
35,000 - 49,999	0.09	0.13	0.032***
	(0.00)	(0.00)	(0.001)
50,000 - 74,999	0.16	0.19	0.023***
	(0.00)	(0.00)	(0.001)
17-25	0.04	0.08	0.035***
	(0.00)	(0.00)	(0.001)
26-39	0.27	0.38	0.105***
	(0.00)	(0.00)	(0.001)
40-54	0.39	0.37	-0.018***
	(0.00)	(0.00)	(0.002)
55-64	0.30	0.18	-0.123***
	(0.00)	(0.00)	(0.001)
White	0.74	0.73	-0.003**
	(0.00)	(0.00)	(0.001)
Black	0.07	0.08	0.005***
	(0.00)	(0.00)	(0.001)
Latinx	0.10	0.11	0.010***
	(0.00)	(0.00)	(0.001)
Other race/ ethnicity	0.09	0.08	-0.012***
	(0.00)	(0.00)	(0.001)
Less than Bachelor's	0.43	0.47	0.041***
	(0.00)	(0.00)	(0.002)
Uninsured	0.07	0.11	0.042***
	(0.00)	(0.00)	(0.001)
Public	0.08	0.16	0.074***
	(0.00)	(0.00)	(0.001)
Private	0.76	0.64	-0.128***
	(0.00)	(0.00)	(0.001)
Public and Private	0.08	0.10	0.012***
	(0.00)	(0.00)	(0.001)
Married	0.61	0.45	-0.153***
	(0.00)	(0.00)	(0.002)
In MSA	0.33	0.32	-0.012***
	(0.00)	(0.00)	(0.001)
Children	0.77	0.79	0.020***
	(0.00)	(0.00)	(0.003)
Household size	2.94	2.92	-0.018***
	(0.00)	(0.00)	(0.005)
Female	0.60	0.73	0.134***
	(0.00)	(0.00)	(0.002)
EITC Eligible	0.14	0.24	0.093***
	(0.00)	(0.00)	(0.001)
EIP Eligible	0.78	0.88	0.105***
	(0.00)	(0.00)	(0.001)
N	802755	116341	919096

[1] Significance levels: * < 10% ** < 5% *** < 1%

[2] Standard errors in parentheses Source: Weeks 13–33 of Census Pulse Survey. Observations are working age adults (17-64) without missing demographic characteristics. Column (1) includes people who did not delay mental health care. Column (2) includes those who delayed mental health care.

Figure 2 displays the outcome variable of delay of mental health care for EIP, EITC eligbible and the overall populations. The lines are not exclusive as adults can be eligible for both the EIPs and tax refunds. Around 14% of EIP eligible adults delay care. The EITC eligible adults are more likely to delay mental health care in every week of the pandemic, on average 19%. The higher delay of mental health care among the EITC eligible is expected given the more stringent income requirements. Important trends emerge for all three groups. Mental health care delay reached a peak at the end of 2020. During the period of tax refund and the third EIPs, mental health decline for all groups.

Figure 1: Mental Health Care Seeking by EIP and EITC Eligibility



Data Source: Household Pulse and includes all adults. EIP Eligibility is determined using household income and marital status. EITC Eligibility is determined using household income, number of children, and marital status. This graph shows the percentage of adults reporting they needed counseling or therapy but did not receive it. The shaded area is March and the vertical line indicates the weeks in which the third EIPs were likely received. Pulse weeks of 3/17 and 4/14 are considered treatment weeks for the third EIPs.

Table 2 shows more detail on the average delay of mental health care by eligibility. In Panel A the columns 1 and 2 are separated by and whether the week occurred during the EIPs treatment weeks. Panel A of Table 2 includes all working age adults. EIP eligible adults are more likely to delay mental health care in all weeks. As expected, during the treatment weeks EIP eligible are less likely to delay mental health care compared to the non-treatment weeks, however, the EIP ineligible have a similar decline in delay of mental health care.

In Panel B the sample is limited to adults with income under $75,000. Columns 1 and 2 are separated by March, the period in which tax refunds are likely distributed, and all other months. Column (3) shows the difference between March and all other months. This table provides context for the regression coefficients. Overall, the EITC eligible adults, compared to the ineligible are more likely to delay mental health care. This is expected given the EITC eligible are lower income and face a range of material

hardships.

Surprisingly, the average delay of mental health care only slightly decreases from March to all other months for the EITC eligible. This very small decrease in delay is not expected given that the EITC eligible receive on average $2,000 in tax refunds in March. Conversely, ineligible adults increase delay of mental health care by .01% in March. In states with EITC adults are less likely to delay mental health care compared to adults in states without. A reduction in delay of care in March is seen for the adults in states with an EITC (.30% reduction). An increase in delay of care in March is seen for adults in state without state EITCs (31%).

In Panel C of Table 2, the sample is limited to only the EITC eligible adults. The EITC eligible adults in states with State EITC are slightly less likely to delay mental health care. In March, adults in states with state EITC, are -.27% less likely to delay mental health care. Conversely, in March adults in states without state EITC, are more likely to delay mental health care compared to all other months. This suggest the small state EITC may assist adults in the period tax refunds arrive. Finally, the sample is limited to ineligible adults. Again, a decline in delay of mental health care is seen among adults in states with supplemental EITC. The average changes in delay of mental health care are relative small. This small effect size is expected for state EITCs is on average, only about $500. These results show regardless of Federal EITC eligibility, the delay of mental health care declines in March in states with supplemental EITCs.

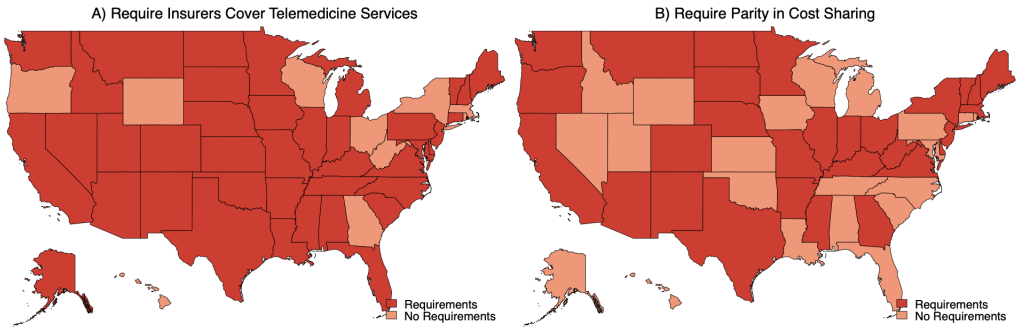
The Pulse data is further supplemented by policy data on state statutes, emergency orders, and subregulatory guidance for state-regulated individual and group health insurance coverage of telehealth from prior to the pandemic until March 15, 2021 (Volk et al., 2021). From the telehealth policy data, two indicators are created if the state had the telehealth requirement as seen in Figure 1. The first policy whether the state requires telehealth coverage. The second policy is whether the state has requirements regarding cost-sharing for telehealth. The states that added requirements during the pandemic instituted the policies in March and April 2020, prior to the collection of delay of mental health care in the Pulse data. This data limitation does not allow for a before and after comparison of delay of mental health care.

Table 2: Delay of Mental Health Care

	(1) Treated Weeks	(2) Non-Treated Weeks	(3) Treated- Non-Treated
	Panel A. All Working Age Adults		
All	11.98	12.72	-.74
EIP Eligible	13.52	14.19	-.66
EIP Ineligible	6.53	7.18	-.65
	Panel B. Under $75,000, by EITC Eligibility		
	March	Other months	March - Other Months
EITC Eligible	19.28	19.30	-.02
EITC Ineligible	15.34	15.33	.01
State EITC	16.29	16.59	-.30
No State EITC	17.18	16.87	.31
	Panel C. Under $75,000, Separated by Federal EITC Eligibility		
EITC Eligible			
State EITC	18.76	19.03	-.27
No State EITC	19.86	19.54	-.32
EITC Ineligible			
State EITC	15.00	15.24	-.24
No State EITC	15.74	15.39	-.35

This table shows average delay of mental health care. Observations are adults (17-64) without missing income. Averages are not weighted.

Figure 2: State Telehealth Requirements (as of March 15, 2021)



This graph shows state level regulations for insurers to cover telemedicine services and state has requirements regarding parity in cost sharing for telemedicine services. Data Source: Center on Health Insurance Reforms, Georgetown University Health Policy Institute; Commonwealth Fund analysis Volk et al. (2021).

3 Empirical Strategies

3.1 EIP

To investigate the effect of the third round of EIPs on mental health care seeking, a difference-in-differences analysis is used. The third round of EIPs is investigated, as opposed to the first and second payments for several reasons. The first EIPs arrived in April 2020 and the question regarding mental health care delay was not asked until August 2020. The second EIPs are not investigated as these payments were available to a larger portion of the population.

The third EIP had lower income limits and provided a larger control group of households which received no stimulus payments. Eligibility for EIPs is based on income cutoffs which were $80,000 and for married couples the cutoff was $160,000. For the Pulse sample eligibility for the third EIPs is determined using household income and marital status.

The following equation investigates delay of mental health care for adults who are eligible the full amount compared to those who were not in the weeks the third EIP received compared to all other weeks.

$$Y_i = \beta_1 EligibleEIP_i * TreatedWeeks_t + \beta_2 TreatedWeekst + \beta_3 EligibleEIP_i + X_i + \varepsilon_{ist} \quad (1)$$

The coefficient of interest in this model is β_1, which is the interaction of $EligibleEIP_i$ and $TreatedWeeks_t$. The indicator $EligibleEIP_i$ is equal to one if the individual was eligible for the third EIP. $TreatedWeeks_t$ is an indicator if the week occurred during the pulse weeks 27 and 28 corresponding to March 17th to April 26th. EIPs were sent out to eligible individuals beginning on March 12, 2021 (IRS, 2021b). The same vector of person level controls used in equation 3.2 are included in X_i.

3.2 State EITC

In order to investigate the effect of state EITC on delay of mental health care this study utilizes a differences-in-differences-in-differences (DDD) strategy. In this model, the variation arises from differences across states in EITC. This identification strategy has been utilized in several previous studies (Averett and Wang, 2018; Markowitz et al., 2017; Rehkopf et al., 2014).

The treatment in the model is the interaction of $StateEITC_s$, $EITCeligible_i$ and $March_t$. The $StateEITC_s$ is an indicator equal to one if the state had supplemental EITC. An indicator for the individual's eligibility, $EITCeligible_i$, is determined using the 2019 household income, number of children,

and martial status.

The indicator $March_t$ is equal to one if the survey response occurred in March of 2021. Pulse Weeks 26 - 28 of the survey are considered the treatment weeks because the outcome of interest ask respondents about their health care seeking "in the last four weeks". These Pulse weeks align with the calender period of March 3 through April 26. Week 28, for which the 4 week look back period would correspond roughly to March 17th 2021- March 29th is considered a treatment week. [4]

The following specification estimates the impact of receiving EITC refunds on the probability delaying mental health care:

$$Y_i = \beta_1 EITCeligible_i * March_t * StateEITC_s + \beta_2 March_t * StateEITC_i + \beta_3 StateEITC_s * EITCeligible_i + \beta_4 March_t * StateEITC_s + \beta_5 EITCeligible_i + \beta_6 StateEITC_s + \beta_7 March_t + \beta_9 X_i + \varepsilon_i \quad (2)$$

Where Y_i is the outcome of interest $Y \in \{\text{Delayed mental health care}\}$ for $individual_i$. This estimation strategy first compares eligible to ineligible individuals, then compares this difference in states with EITC and states without. The final difference compares the delay of mental health care in March to all other months.

A vector of demographic controls, X_i is included. The individual controls capture any observable characteristics that are associated with health care seeking but are not used in the estimation of EITC eligibility. The controls used include age (17-25, 26-39, 40-54, 55-64), gender, race/ethnicity (White, Black, Latinx, Other race/ ethnicity), and residence in MSA. The standard errors are clustered at state level.

3.3 Telehealth Access

In order to investigate the effect of state telehealth policies on delay of mental health care this study utilizes a descriptive LPM. In this model, the variation arises from differences across states in telehealth requirements.

The following specification estimates the impact of state telehealth policies on the probability delaying mental health care:

$$Y_i = \beta_1 StateRequirement_s + \beta_2 X_i + \varepsilon_i \quad (3)$$

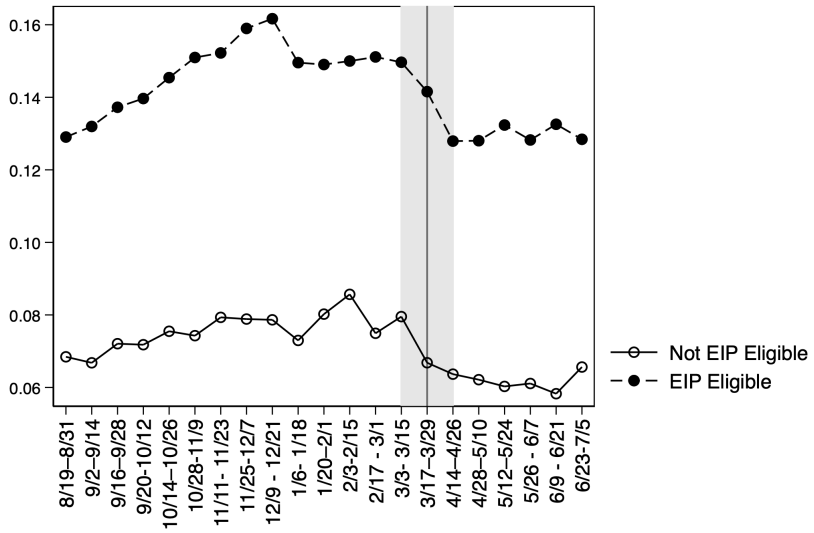
[4] A gap in the Pulse survey collection occurred between Phase 3 and Phase 3.1. (Week 27 is March 17, 2021 to March 29, 2021 where as Week 28 collection period does not begin till April 14, 2021 and continues till April 26, 2021). Robustness checks are shown and the results are not sensitive to the definition of treatment weeks.

Where Y_i is the report of delayed care for $individual_i$. Where $StateRequirement_s$ is the state policy of interest the state that $individual_i$ resides in for the Pulse survey. This descriptive estimate simply compares the difference in delay of mental health care in states with telehealth requirements and without. The same vector of demographic controls as Eq 1 and Eq 2, X_i are also included. The standard errors are clustered at state level.

4 Results

Multiple descriptive graphs show the average delay of mental health care over the sample period. Figure 3 displays mental health delay by EIP eligibility. As expected adults eligible for EIP are more likely to delay care in all weeks. A considerable drop in delay of mental health care does occur for the EIP eligible in the week of January 6th, 2021. This is likely due to the second EIP being distributed in the end of December of 2020. The vertical line indicates when the Third EIPs were distributed in March 2021. Both the EIP eligble and non-eligble have a decreased delay of mental health care during the treatment weeks, however the EIP eligible do see a slightly larger decline.

Figure 3: Mental Health Care Seeking by EIP Eligibility

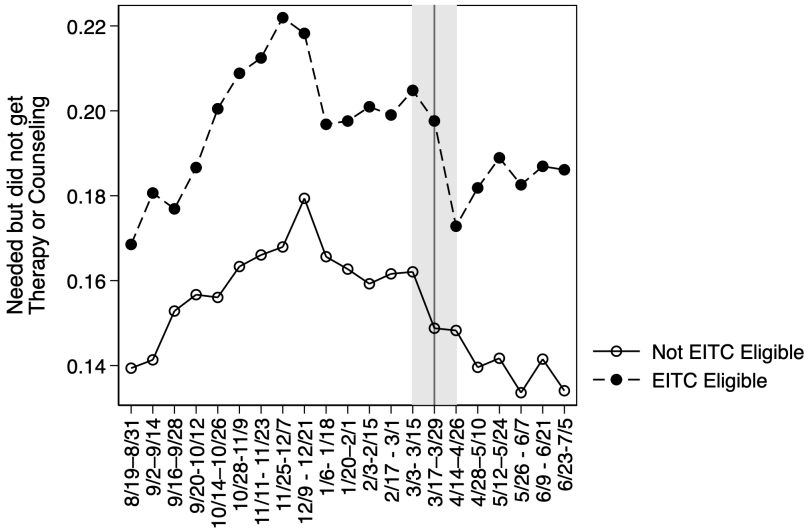


Data Source: Household Pulse and includes all adults. EIP Eligibility is determined using household income and marital status. This graph shows the percentage of adults reporting they needed counseling or therapy but did not receive it. The shaded area is March and the vertical line indicates the weeks in which the third EIPs were likely received. Pulse weeks of 3/17 and 4/14 are considered treatment weeks for the third EIPs.

Figure 4 compares the delay of mental health care is higher among the EITC eligible adults and not eligible adults. The sample is limited to adults with household income under $75,000 to provide a better comparison group the the EITC eligible. During the winter of 2020 an increase is seen for both the eligible and ineligible adults. Again, both groups experience a decline in delay of mental health care

starting in 2021 potentially, due to the distribution of the second EIPs. During the spring of 2021 delay of mental health care remains consistent in the month of February and then begins to decline staring March. The ineligible adults continue to decline delay of mental health care after the months tax refunds arrive. Comparably, the delay of mental health care among the EITC eligible begins to increase after the months of tax refunds. This graph shows prior to tax refunds the eligible and non eligible adults tended to have similar trends in mental health care delay and during the post period the ineligible experience a consistent decline.

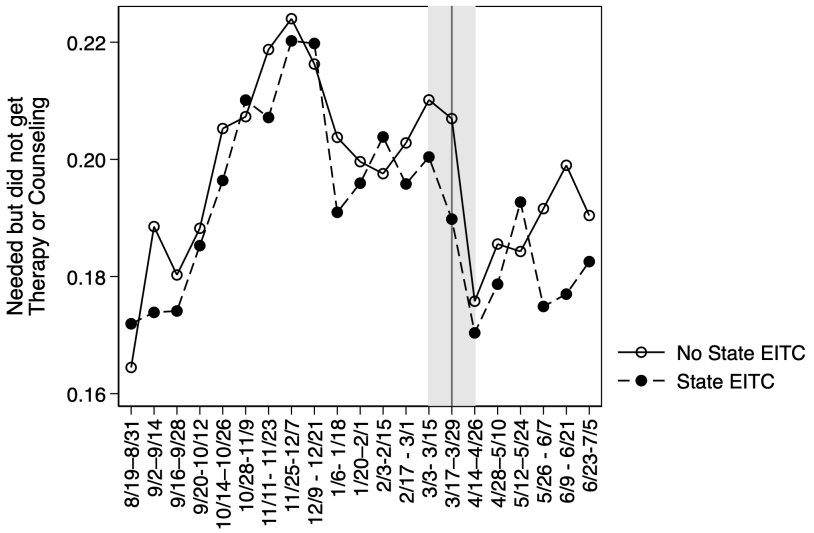
Figure 4: Mental Health Care Seeking by EITC Eligibility



Data Source: Household Pulse and includes all adults. EITC Eligibility is determined using household income, number of children, and marital status. This graph shows the percentage of adults reporting they needed counseling or therapy but did not receive it. The shaded area is March and the vertical lines indicate the weeks in which EIPs were likely received.

In Figure 5 the sample is limited to adults Eligible for federal EITC. The lines are separated by whether the adult lived in a state with state EITC. During the pre-treatment period, the delay of mental health care is similar between the two populations. Adults in states with state EITC are less likely to delay mental health care during the weeks tax refund likely arrive. After the tax refund period, adults in states with state EITC delay health care at lower rates in almost all weeks. In the pre-period eligible adults are comparable across states with and without EITC. Adults in states with supplemental EITC delay mental health care less than adults in states without. Importantly, the delay is lower in almost every week after the tax refund period in states with state EITC. This lower delay of mental health care in the post period suggests state EITC may be slightly associated with less mental health care delays.

Figure 5: Mental Health Care Seeking of the EITC Eligible, by State EITC



Data Source: Observations are adults (age 17-64) with income under $75,000 and are eligible for Federal EITC. This graph shows the percentage of adults reporting they delayed mental health care. The dotted line shows the mean for adults in states with State EITC. The shaded area is March, the time period tax refunds were likely to arrive and the vertical lines indicate the weeks in which EIPs were likely received.

Figure Appendix A-4 shows mental health delay by state telehealth requirements. No difference in delay of mental health care is seen in states with and without telehealth coverage requirements. Slightly more delay of mental health care is seen in states with requirements on cost-sharing for telehealth.

4.1 EIP

Table 3: Delayed Mental Health Care Seeking, Third EIP

	(1)	(2)	(3)
Treated Weeks	-0.007***	-0.005*	-0.005*
	(0.002)	(0.002)	(0.002)
EIP Eligible	0.070***	0.057***	0.057***
	(0.001)	(0.001)	(0.001)
Treated Weeks X EIP Eligible	-0.000	0.001	0.001
	(0.004)	(0.004)	(0.004)
Person Controls	No	Yes	Yes
Per Captia Mental Health Providers	No	No	Yes
N	919,096	919,096	919,096
Mean (%)	0.127	0.127	0.127
Sd	0.333	0.333	0.333

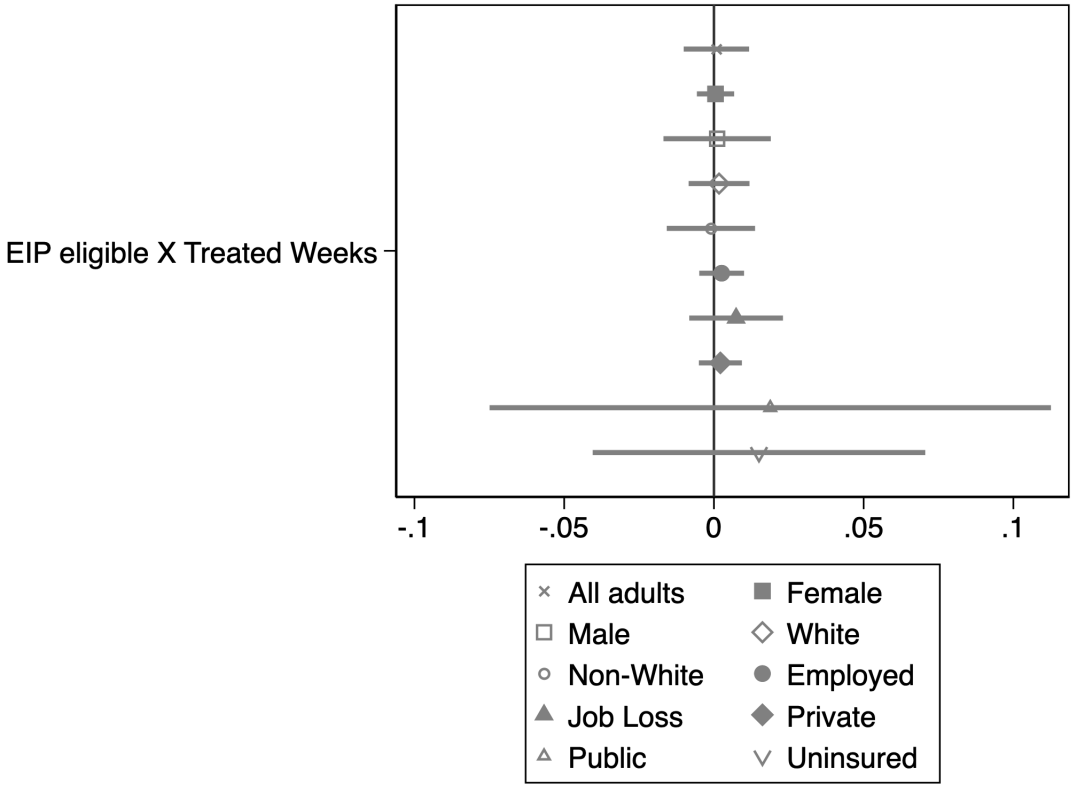
Estimates from Equation 3.1. The outcome is delay mental health care. Observations are working age adults (17-64) without missing income. EIP eligibility is based on income and martial status. Pulse weeks of 3/17 and 4/14 are considered treatment weeks for the third EIPs. Column (1) includes no controls. Column (2) includes person level controls of age , gender, race/ethnicity, and residence in MSA. Column (3) includes a control for state level per capita mental health providers. Significance levels: * < 10% ** < 5% *** < 1%

Table 3 displays the results of equation 3.1 for the outcome of delay of mental health care. In all

columns the estimate for the treated weeks is negative as expected, although small. Meaning in the period the third EIPs were distributed delay of mental health care decreased for all adults. As predicted, adults eligible for EIPs are 7% more likely delay mental health care. This is expected as EIP eligible are lower income and likely more economically constrained than ineligible adults. The estimate of interest is difference-in-difference estimate of $EligibleEIPXTreatedweeks$. The estimate is small and economically and statistically insignificant. The receipt of the third EIPs is not associated with a change in the delay of mental health care.

Figure 6 shows the coefficient of interest from each of the conditional regression separately. Conditional on gender, race, employment and insurance status there is no effect of the third EIPs on delay of mental health care.

Figure 6: EIP, Mental health care



This graph shows the results from Equation 3.1 for the outcome of delaying mental health care. The weeks include week 13-33. The EIP treatment weeks are March 17th to April 26th. Each estimate is a separate regression limited to the sub-group of interest. 95 and 99 confidence intervals are shown.

4.2 State EITC

The next policy investigated is State EITC. This policy allows for the triple difference estimation strategy given the variation across states and time. To provide context to the triple difference strategy, the results of each of the three interactions in Equation 3.2 are displayed separately in Columns (1)- (3) of Table 4. The outcome is delay of mental health care and all models include person level controls. Column (1) shows results of the first interaction. The main coefficient of interest is $MarchXEITCEligible$, the interaction of Federal EITC eligibility and the March indicator. Identification in this model comes from comparing EITC eligible adults to ineligible adults during March, the period tax refunds were received, compared to all other months. The other two coefficients display the effects of being EITC eligible and the effect of March separately.

As expected, the effect of being EITC eligible is positive. EITC eligible adults are 3.1% more likely to delay mental health care. This is expected as EITC eligible are lower income. The estimate on March

is small and positive, indicating mental health care is slightly more likely to be delayed in March.[5] The estimate of interest $MarchXEITCEligible$ is small, insignificant, and negative. In the period tax refunds are received, EITC eligible adults are slightly less likely to report delaying mental health care. The negative direction of this estimate is expected as this result indicates the effect of being eligible for Federal EITC. The federal EITC amount can be large, with adults on average receiving over $2,000. Despite the large increase in liquidity, delay of mental health care among eligible adults declines only .01% compared to ineligible adults. Table Appendix A-2 shows robustness checks for all models and the effects are not sensitive to the inclusion of insurance or state level controls.

Table 4: Delay Mental Health Care, State EITC

	(1)	(2)	(3)	(4)
State EITC		-0.0021	-0.0020	-0.0011
		(0.005)	(0.006)	(0.006)
EITC Eligible	0.0313***		0.0325***	0.0326***
	(0.002)		(0.003)	(0.003)
March	0.0037*	0.0071***		0.0075***
	(0.002)	(0.002)		(0.003)
March X EITC Eligible	-0.0010			-0.0007
	(0.004)			(0.006)
State EITC X March		-0.0071**		-0.0068*
		(0.003)		(0.004)
State EITC X EITC Eligible			-0.0026	-0.0025
			(0.004)	(0.005)
State EITC X EITC Eligible X March				-0.0006
				(0.008)
Person Controls	Yes	Yes	Yes	Yes
N	401,662	401,662	401,662	401,662
Mean (%)	0.167	0.167	0.167	0.167
Sd	0.373	0.373	0.373	0.373

The outcome is delayed mental health care. Observations are adults age 17-64 with income under $75,000. All Columns include person level controls including: age (17-25, 26-39, 40-54, 55-64), gender, race/ethnicity (non-Hispanic white, non-Hispanic black, Latinx, Other race/ ethnicity), marital status, and residence in MSA. Significance levels: * < 10% ** < 5% *** < 1%

Column (2) of Table 4 shows results of the second interaction in the triple difference specification from equation 3.2. The main coefficient of interest is $StateEITCXMarch$, the interaction of living in a state with supplemental EITC and the March indicator. Identification comes from comparing adults in states with supplemental EITC to adults in states without, during March compared to all other months.

The other two coefficients display the effects of living in a state with supplemental EITC and the effect of March. Adults in states with supplemental EITC are less likely to delay mental health care, the estimates is small and not statistically significant. The positive estimate March shows all adults are more likely to report delaying mental health care in the period tax refunds likely arrive compared to all other months.

[5]Table Appendix A-3 shows that the effect of March is negative when EITC Eligible is not added to the model.

The estimate of interest $MarchXStateEITC$ is small, significant, and negative. Eligible adults living in states with state EITC are .07% less likely to report delaying mental health care in the period tax refunds are likely received. This negative effect shows regardless of EITC eligibility, adults living in states with supplemental EITC delay less mental health care in March.

Column (3) shows results of the third interaction in the triple difference specification from equation 3.2. The main coefficient of interest is $StateEITCXEITCEligible$, the interaction of living in a state with supplemental EITC and being EITC eligible. Identification comes from comparing the EITC eligible adults to ineligible adults and comparing adults in states with state EITC to adults in states without.

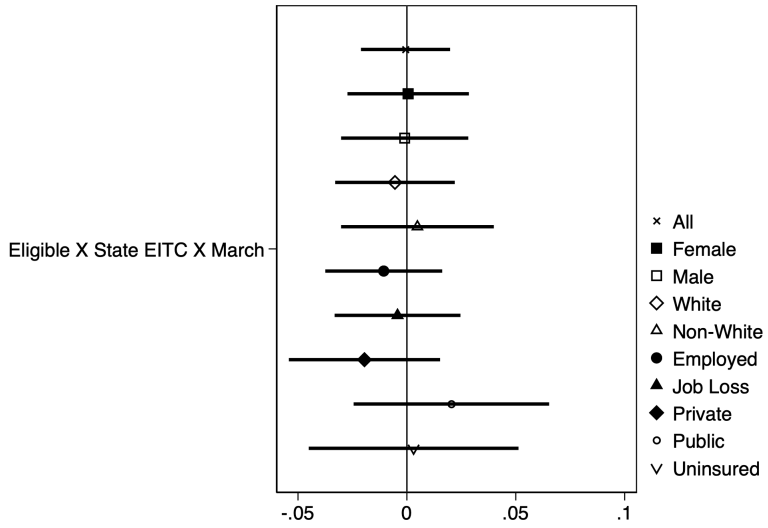
The results show the same pattern as the first two interactions. Adults in states with supplemental EITC are less likely to delay and EITC eligible adults are significant more likely to delay mental health care. Eligible adults are 3.25% more likely to delay mental health care than the ineligible.

The estimate of interest is the interaction of $StateEITCXEITCEligible$. EITC eligible adults living in states with supplemental EITC are slightly less likely to report delay of mental health care. Although, the effect is not significant and economically small. Overall, the separate interactions of the triple difference are the direction predicted although very small.

The main results of Equation 3.2 are displayed in Column (4) of Table 4. The estimate on the triple interaction is small and not statistically significant. The triple difference results show state EITC are not associated with with delay of mental health care for the EITC eligible in March.

As with the EIPs, a sub-group analysis is conducted. In Figure 7 the outcome is delayed mental health care. The top estimate marked with x is the same estimate shown in Table 4 Column (4). For all sub groups, there is no significant change in mental health care delay during the period tax credits arrive for eligible adults.

Figure 7: Effects of State-EITC on Delay of Mental Health Care, Sub Group Analysis



This figure shows coefficient of interest from Equation 3.2. The outcome is an indicator delay of mental health care. The confidence intervals are shown with the 95% and 99%. Each of the estimates are from models run separately by sub group. Model includes person level controls including: age, gender, race/ethnicity, educational attainment, and residence in MSA.

4.3 Mental Health Access

Finally we turn to the effect of state telehealth policies on delay of mental health care. Equation 3.3 is estimated on the dependent variable of delay of mental health care. The two focal independent variables are a state requiring insurance plans to cover telemedicine and state requirements regarding cost sharing for telemedicine visits.

In table 5 columns 1 and 2 show state telehealth coverage requirements are not significantly associated with delay mental health care. Columns 3 and 4 also show no association between state cost-sharing requirements and delay of mental health care. Unexpectedly, the two state telehealth policies do not significantly impact mental health care. State requirements are only a proxy for increased mental health care access. Additionally, other insurers regardless of state requirements also have instituted increased telehealth coverage (Volk et al., 2021).

Table 5: State Telehealth Requirements (as of March 15, 2021)

	(1)	(2)	(3)	(4)
Telehealth Coverage	0.0010	0.0012		
	(0.008)	(0.007)		
Telehealth Parity			0.0038	0.0055
			(0.004)	(0.004)
Person Controls	No	Yes	No	Yes
N	919,096	919,096	919,096	919,096
Mean (%)	0.127	0.127	0.127	0.127
Sd	0.333	0.333	0.333	0.333

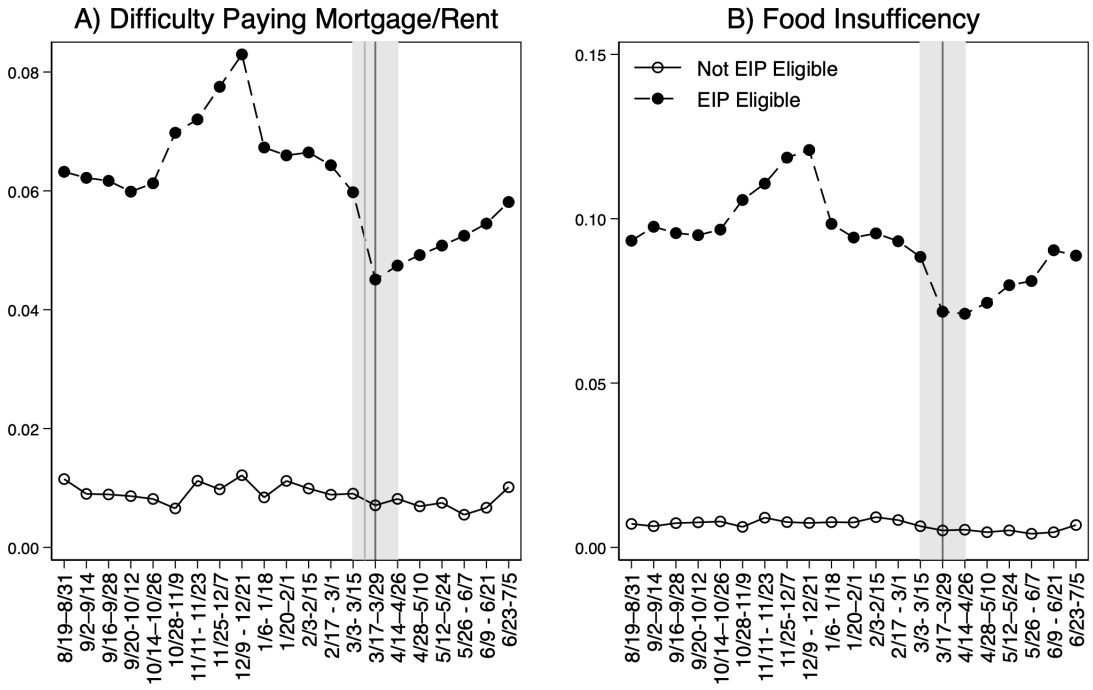
Column 1 and 2 includes an indicator if the state requires insurers to cover telehealth services. Column 3 and 4 includes an indicator if the state has requirements regarding cost sharing for telehealth services. Observations are working age adults 17-64. Person level controls include: age (17-25, 26-39, 40-54, 55-64), gender, race/ethnicity (White, Black, Latinx, other race/ethnicity), educational attainment (less than Bachelor's degree), and residence in MSA. Data source: Pulse and Center on Health Insurance Reforms, Georgetown University Health Policy Institute; Commonwealth Fund analysis Volk et al. (2021). Significance levels: * < 10% ** < 5% *** < 1%

5 Discussion

There does not appear to be a strong response to EIP payments, or federal or state EITC refunds, on mental health care use among people who report needing care. Of course, the EITC and later EIP payments may have been anticipated by consumers, such that they preemptively allocate the funds towards large purchases (Smeeding et al., 2000). Thus the liquidity was already spent. People may had other pressing needs, such as food or utilities, and preferred this consumption to mental health care.

Figure 8 descriptively investigates the prevalence of food insufficiency and difficulty paying for housing by eligibility for the third EIPs. EIP eligible adults are more likely to report experiencing both measures of hardship across the study period. A decline in hardship for the EIP eligible adults during the treatment period, as seen in the gray shaded areas of the graphs. A similar decline, however, is seen among ineligible adults for all hardship measures. EIP eligible adults do appear to experience relatively larger declines in difficulty paying for housing and food insufficiency. In the period after the third EIPs are received, from late April to June, both hardship measures begin to increase for the EIP eligible adults. This suggests the increase liquidity from EIPs and tax refunds may only have assisted adults, however only in the short term.

Figure 8: Hardship by EIP Eligibility



This figure shows weekly average food insufficiency and difficulty paying mortgage or rent. The shaded area is March, the time period tax refunds were likely to arrive and the vertical line indicate the weeks in which the third EIPs were likely received. The housing hardship question is only asked if the adult reports owning their house with a mortgage or loan or was a renter. This question excludes adults who owned their house free and clear or occupied without payment of rent. Sample includes all working age adults.

There are other potential reasons an effect is not seen for mental health care. Relative to traditional health care, mental health care may be perceived as having greater uncertainty about effectiveness for consumers, as well as a wide range of treatment approaches and frequencies. A lack of liquidity for out of pocket costs may not be even a leading reason people avoid getting care.

An important policy question is whether people are under-consuming mental health care. Prior work has shown increases in health spending after Social security benefits (Gross et al., 2020), and tax refunds arrive (Farrel et al., 2018; Dunn et al., 2021). Mental health care differs from prescription drug purchasing as the consequences of delaying mental health care not always immediately apparent. Delay of prescription medication can immediately impact physical health, especially for the elderly population. (Farrel et al., 2018; Dunn et al., 2021) find increases on health spending after tax refunds using consumer banking data.

The findings of this study related to the state EITC align with prior work by Donnelly and Farina (2021) showing the state EITC was not associated with improved psychological distress, as well as Collin et al. (2021) not finding an association with improved mental health. The evidence on the larger federal EITC also do not show conclusively that people increase their use of health care (Hoynes et al., 2015; Markowitz et al., 2017; Rehkopf et al., 2014; Hamad and Rehkopf, 2015; Baker, 2008).

6 Conclusion

During 2021, other government interventions were in place such as stimulus payments, expanded unemployment, mortgage and student loan assistance and in some states, an eviction moratorium. Many of these policies, which improve people's financial situations, have since expired.

Among the lower income sample in the Pulse data, 17% of adults reported not receiving mental health care. This number may be under-representing actual need, as a person must indicate and acknowledge they need mental health care. As over 40% of Pulse respondents experienced anxiety or depressive symptoms.

The fact that added liquidity does not shift mental health care utilization is informative for research into the longer-run consequences of disruptions in mental health care access. The results that the third EIPs, state EITC, and state regulations are not associated with lower delaying of health care can provide basis for designing targeted policies that aim to address the consequences of cost related barriers to health care. Future work is necessary into how to encourage seeking mental health care when needed and not having patients delay care until they can pay the cost of care.

The outcomes of interest in this study were self-reported and were constrained by the time period the questions were asked. The data also does not inquire if health care was delayed specifically for

cost-related reasons. Adults may delay care for a multitude of reasons including social barriers such as stigma.

This study does not observe actual health care sought. Studies that use health spending are able to see changes in the payment of health-related expenses. Consumer spending data on health expenses is also limited to only capturing payments of medical bills not if care was received. There is also the potential for selection bias due to respondents not answering the questions regarding health care seeking or reporting their income.

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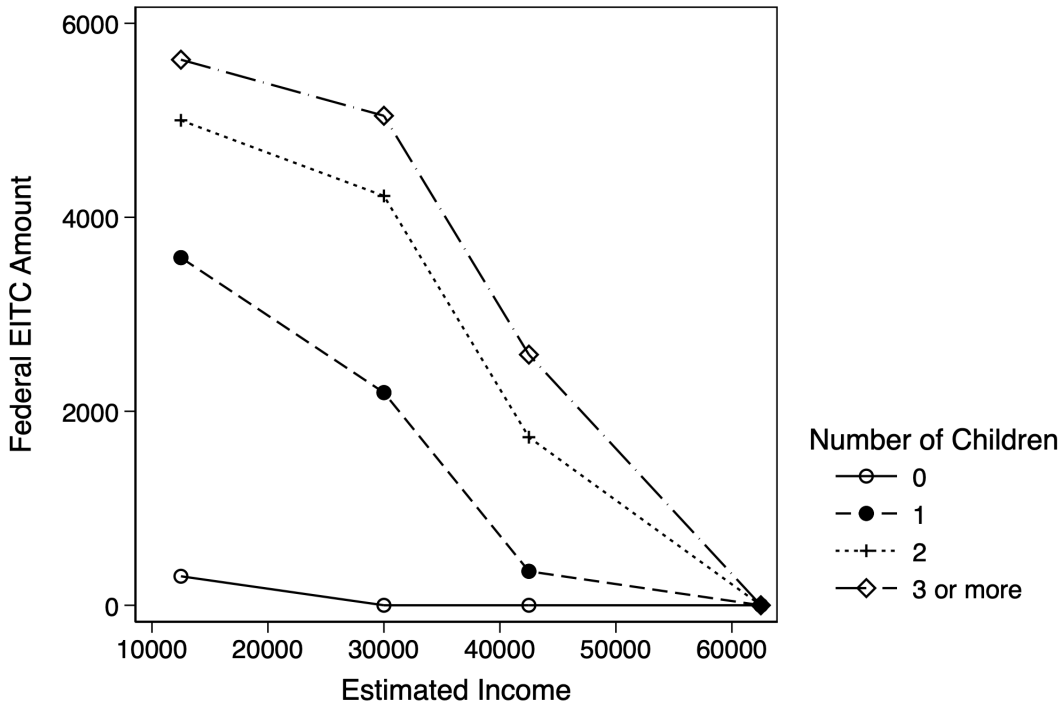
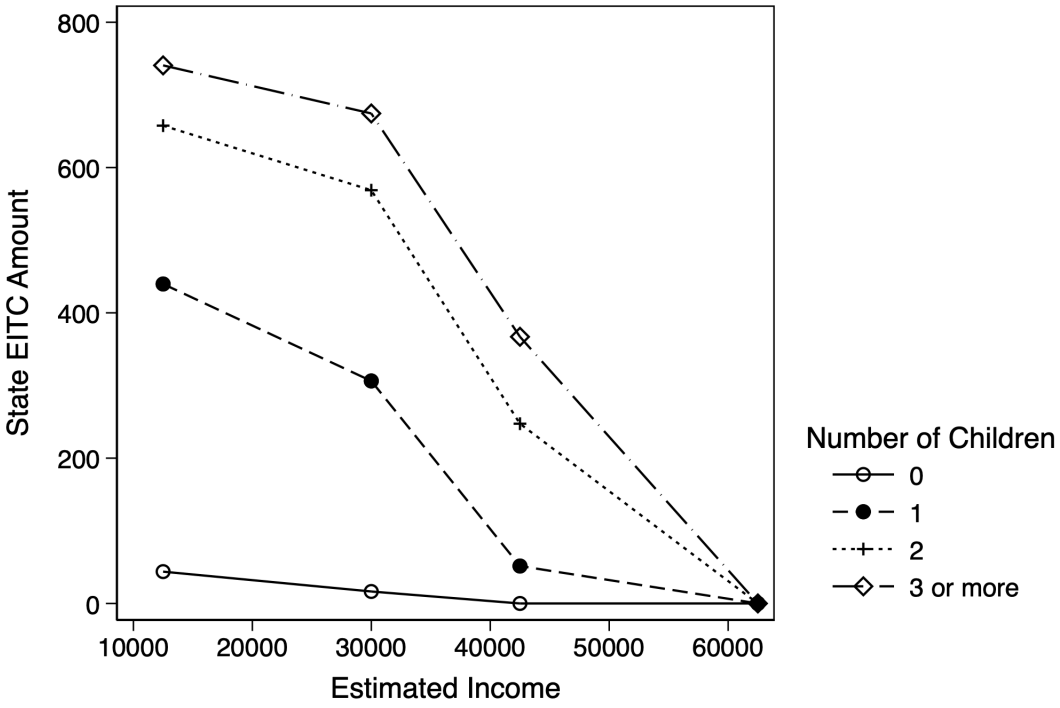
Appendix A Additional Analysis

Figure Appendix A-1: Estimated Federal EITC Amount by Number of Children



Data Source: Household Pulse and includes all adults with household income under $75,000. The Federal EITC eligibility amount is defined based on income, marital status, and number of children. This graph shows the average federal EITC estimated refund for the sample, by number of children.

Figure Appendix A-2: Estimated State EITC Amount by Number of Children



Source: Household Pulse and includes all adults with household income under $75,000. The state EITC eligibility amount is determined based on income, and number of children and the state EITC rate. This graph shows the average state EITC estimated refund for the sample.

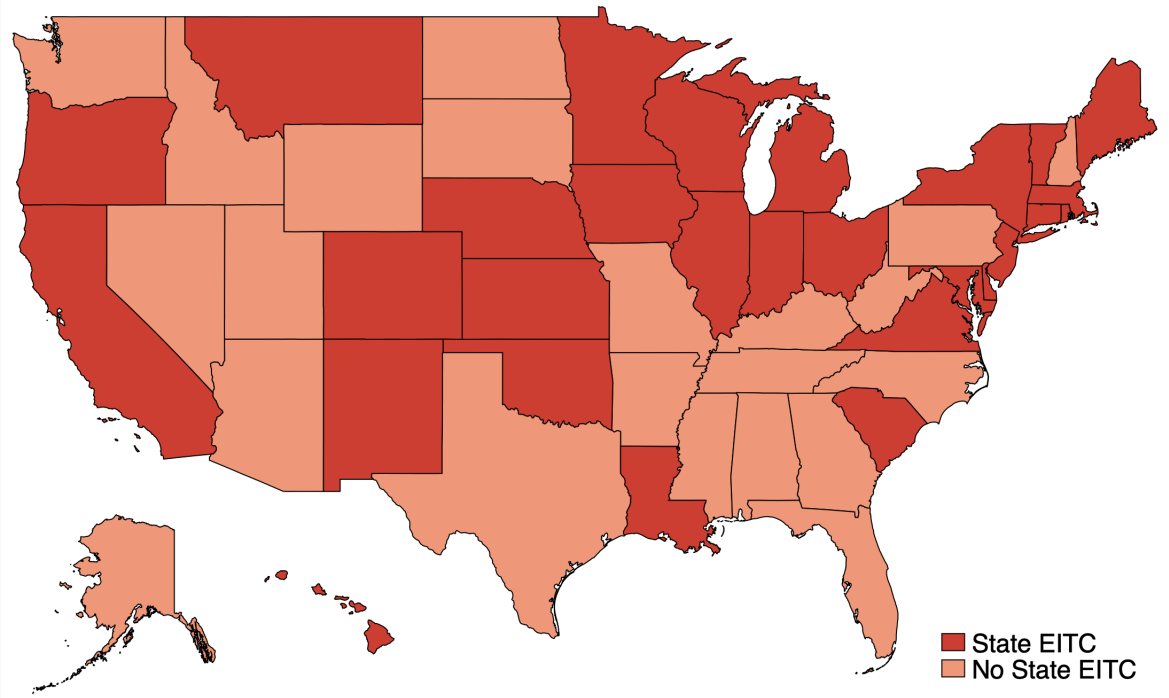
Table Appendix A-1: Sample Demographic Characteristics, by State EITC

Variable	No State EITC	State EITC	Diff
Less than 25,000	0.22	0.23	0.004***
	(0.00)	(0.00)	(0.001)
25,000 - 34,999	0.17	0.17	-0.001
	(0.00)	(0.00)	(0.001)
35,000 - 49,999	0.23	0.22	-0.003**
	(0.00)	(0.00)	(0.001)
50,000 - 74,999	0.38	0.38	0.000
	(0.00)	(0.00)	(0.002)
17-25	0.08	0.07	-0.006***
	(0.00)	(0.00)	(0.001)
26-39	0.30	0.31	0.005***
	(0.00)	(0.00)	(0.001)
40-54	0.33	0.33	-0.002
	(0.00)	(0.00)	(0.001)
55-64	0.29	0.29	0.003*
	(0.00)	(0.00)	(0.001)
Non-Hispanic White	0.69	0.66	-0.023***
	(0.00)	(0.00)	(0.001)
Non-Hispanic Black	0.11	0.10	-0.010***
	(0.00)	(0.00)	(0.001)
Hispanic	0.13	0.14	0.014***
	(0.00)	(0.00)	(0.001)
Other race/ ethnicity	0.08	0.10	0.019***
	(0.00)	(0.00)	(0.001)
Less than Bachelor's	0.63	0.61	-0.024***
	(0.00)	(0.00)	(0.002)
Uninsured	0.15	0.11	-0.039***
	(0.00)	(0.00)	(0.001)
Public	0.16	0.22	0.059***
	(0.00)	(0.00)	(0.001)
Private	0.57	0.55	-0.024***
	(0.00)	(0.00)	(0.002)
Public and Private	0.12	0.12	0.005***
	(0.00)	(0.00)	(0.001)
married	0.40	0.36	-0.039***
	(0.00)	(0.00)	(0.002)
In MSA	0.25	0.27	0.016***
	(0.00)	(0.00)	(0.001)
Children	0.72	0.67	-0.047***
	(0.00)	(0.00)	(0.003)
Total number of people in household	2.77	2.72	-0.055***
	(0.00)	(0.00)	(0.005)
Female	0.67	0.67	0.003**
	(0.00)	(0.00)	(0.001)
Estimated Federal EITC Amt	744.61	726.33	-18.282***
	(3.53)	(3.19)	(4.754)
Estimated State EITC Amt	0.00	183.13	183.130***
	(0.00)	(1.01)	(1.111)
Needed counseling/therapy but did not get it	0.17	0.17	-0.004***
	(0.00)	(0.00)	(0.001)
N	182105	219557	401662

[1] Significance levels: * < 10% ** < 5% *** < 1%

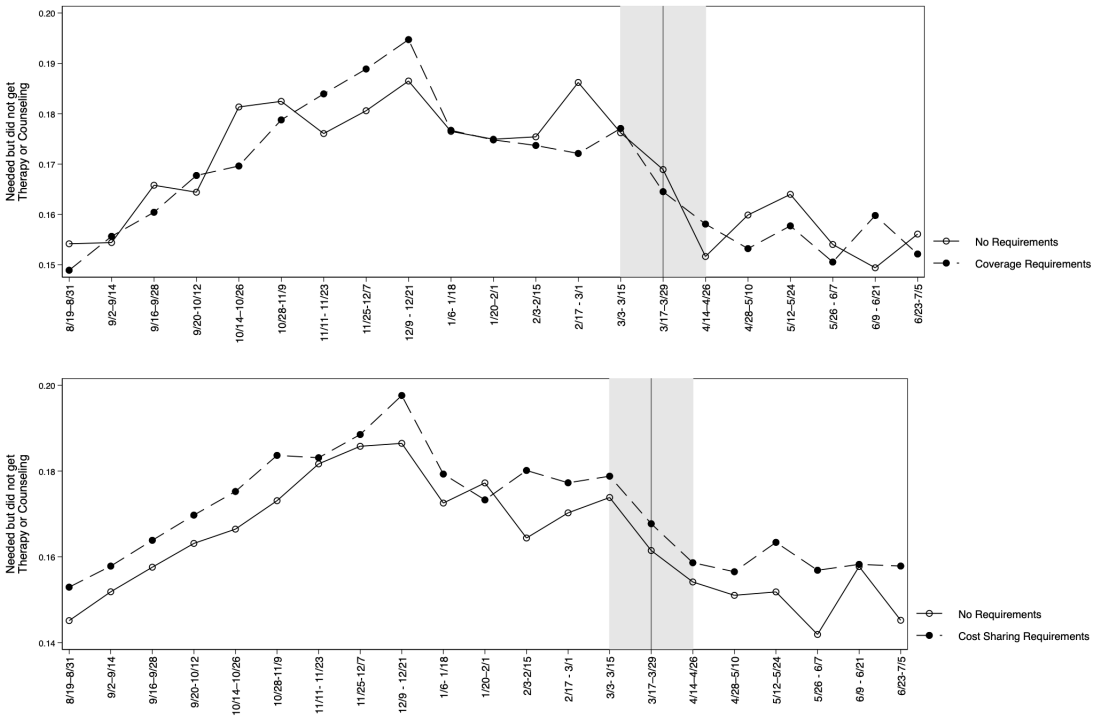
[2] Standard errors in parentheses Data is weeks 13- 33 of Census Household Pulse Survey. Observations are adults (17-64) with income under $75,000 and without missing demographic characteristics. The columns are separated by whether the person lives in a state with State EITC. Estimates are unweighted.

Figure Appendix A-3: State EITC



Data Source: University of Kentucky Center for Poverty Research. (2021, Feb.). UKCPR National Welfare Data, 1980-2019. This maps shows states with and without State EITC.

Figure Appendix A-4: Mental Health Care Seeking by State Telehealth Requirements



Data Source: Observations are adults (age 17-64). This graph shows the percentage of adults reporting they delayed mental health care. The shaded area is March, the time period tax refunds were likely to arrive and the vertical lines indicate the weeks in which the third EIPs were likely received.

Table Appendix A-2: Robustness Delay Mental Health Care, Difference-in-Differences

	(1)	(2)	(3)	(4)
	Panel A.Federal EITC Eligibility			
EITC Eligible	0.040***	0.031***	0.006**	0.006**
	(0.003)	(0.002)	(0.002)	(0.002)
March	0.000	0.004*	0.004**	0.009***
	(0.002)	(0.002)	(0.002)	(0.002)
March X EITC Eligible	-0.000	-0.001	-0.001	-0.001
	(0.004)	(0.004)	(0.004)	(0.004)
N	401,662	401,662	401,662	401,662
Mean (%)	0.167	0.167	0.167	0.167
Sd	0.373	0.373	0.373	0.373
	Panel B. State EITC Eligibility			
State EITC	-0.002	-0.002	-0.003	-0.003
	(0.006)	(0.006)	(0.005)	(0.005)
EITC Eligible	0.041***	0.033***	0.009***	0.009***
	(0.004)	(0.003)	(0.003)	(0.003)
State EITC X EITC Eligible	-0.004	-0.003	-0.006	-0.006
	(0.005)	(0.004)	(0.004)	(0.004)
N	401,662	401,662	401,662	401,662
Mean (%)	0.167	0.167	0.167	0.167
Sd	0.373	0.373	0.373	0.373
	Panel C. State EITC and Federal EITC Eligibility			
State EITC	-0.003	-0.002	-0.005	-0.004
	(0.006)	(0.005)	(0.005)	(0.005)
March	0.003	0.007***	0.007***	0.012***
	(0.002)	(0.002)	(0.002)	(0.002)
March X State EITC	-0.006*	-0.007**	-0.007**	-0.007**
	(0.003)	(0.003)	(0.003)	(0.003)
Person Controls	No	Yes	Yes	Yes
Insurance Controls	No	No	Yes	Yes
State Controls	No	No	No	Yes
N	401,662	401,662	401,662	401,662
Mean (%)	0.167	0.167	0.167	0.167
Sd	0.373	0.373	0.373	0.373

The outcome is delay mental health care. Observations are adults (17-64) with income under $75,000. Person level controls include: age (17-25, 26-39, 40-54, 55-64), gender, race/ethnicity (White, Black, Latinx, other race/ethnicity) and residence in MSA. Significance levels: * < 10% ** < 5% *** < 1%

Table Appendix A-3: Robustness Delay Mental Health Care, Interactions

	(1)	(2)	(3)
	Panel A.Federal EITC Eligibility		
March	-0.0003		0.0002
	(0.002)		(0.002)
EITC Eligible		0.0395***	0.0396***
		(0.003)	(0.003)
March X EITC Eligible			-0.0002
			(0.004)
N	401,662	401,662	401,662
Mean (%)	0.167	0.167	0.167
Sd	0.373	0.373	0.373
	Panel B. State EITC		
March	-0.0003		0.0031
	(0.002)		(0.002)
State EITC		-0.0036	-0.0029
		(0.006)	(0.006)
March X State EITC			-0.0060*
			(0.003)
N	401,662	401,662	401,662
Mean (%)	0.167	0.167	0.167
Sd	0.373	0.373	0.373
	Panel C. State EITC and Federal EITC Eligibility		
State EITC	-0.0036		-0.0023
	(0.006)		(0.006)
EITC Eligible		0.0395***	0.0414***
		(0.003)	(0.004)
State EITC X EITC Eligible			-0.0035
			(0.005)
N	401,662	401,662	401,662
Mean (%)	0.167	0.167	0.167
Sd	0.373	0.373	0.373

The outcome is delay mental health care. Observations are adults (17-64) with income under $75,000. Person level controls are not included.Significance levels: * < 10% ** < 5% *** < 1%

Table Appendix A-4: Robustness: Delay Mental Health Care, State EITC

	(1)	(2)	(3)	(4)	(5)
State EITC	-0.0015	-0.0011	-0.0023	-0.0005	-0.0016
	(0.006)	(0.006)	(0.005)	(0.006)	(0.006)
Federal EITC Eligible	0.0415***	0.0326***	0.0089***	0.0327***	0.0089***
	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)
March	0.0035	0.0075***	0.0076***	0.0123***	0.0127***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
March X EITC Eligible	-0.0003	-0.0007	-0.0009	-0.0007	-0.0009
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
State EITC X EITC Eligible	-0.0036	-0.0025	-0.0063	-0.0026	-0.0064
	(0.006)	(0.005)	(0.004)	(0.005)	(0.004)
State EITC X March	-0.0060	-0.0068*	-0.0066*	-0.0076*	-0.0074*
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
State EITC X EITC Eligible X March	0.0000	-0.0006	-0.0004	-0.0005	-0.0002
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Person Controls	No	Yes	Yes	Yes	Yes
Insurance Controls	No	No	Yes	No	Yes
State Controls	No	No	No	Yes	Yes
N	401,662	401,662	401,662	401,662	401,662
Mean (%)	0.167	0.167	0.167	0.167	0.167
Sd	0.373	0.373	0.373	0.373	0.373

The outcome is delayed mental health care. Observations are adults (17-64) with income under $75,000. Columns (2-4) include person level controls. Person level controls include: age (17-25, 26-39, 40-54, 55-64), gender, race/ethnicity (White, Black, Latinx, other race/ethnicity), marital status,and residence in MSA. Column (3) adds insurance variables of uninsured, private, public or private and public. Column (4) includes state level controls including weekly state vaccine percentage and per captia new COVID cases. Significance levels: * < 10% ** < 5% *** < 1%

Table Appendix A-5: Delay Mental Health Care, State EITC Triple Difference Robustness

	(1) week 26-27	(2) wk 27-28	(3) wk 26-29
St EITC X Eligible X March (wks26-27)	-0.006		
	(0.008)		
St EITC X Eligible X March (wks26-28)			-0.001
			(0.008)
St EITC X Eligible X March (wks27-28)		0.001	
		(0.011)	
Person Controls	Yes	Yes	Yes
N	401,662	401,662	401,662
Mean (%)	0.167	0.167	0.167
Sd	0.373	0.373	0.373

This table shows the robustness checks for results displayed in 4. The outcome is reporting delaying mental health care. Observations are adults with income under $75,000 . Significance levels: * < 10% ** < 5% *** < 1%

Table Appendix A-6: Delay Mental Health Care, Log of State EITC Amount

	(1)	(2)	(3)	(4)
Log State EITC Amount	-0.011***	-0.013***	-0.014***	-0.014***
	(0.002)	(0.002)	(0.002)	(0.002)
March	-0.013	-0.013	-0.013	-0.009
	(0.015)	(0.014)	(0.015)	(0.014)
Log State EITC Amount X March	0.002	0.002	0.002	0.002
	(0.003)	(0.003)	(0.003)	(0.003)
Person Controls	No	Yes	Yes	Yes
N	79,473	79,473	79,473	79,473
Mean (%)	0.190	0.190	0.190	0.190
Sd	0.393	0.393	0.393	0.393

The outcome is reporting delaying mental health care. Observations are adults (17-64) with income under $75,000 and eligible for State EITC. Column (1) includes no controls. Column (2) includes person level controls. Column (3) includes person level and health insurance controls. Column (4) includes state controls of weekly vaccination rate and new COVID-19 cases. Person level controls include: age (17-25, 26-39, 40-54, 55-64), gender, race/ethnicity (non-Hispanic white, non-Hispanic black, Latinx, Other race/ ethnicity), and residence in MSA. The estimate of interest is the interaction of $LogStateEITCAmountXMarch$. The estimate is very small and is not economically or statistically significant. The amount of state EITC an adult is eligible for is not associated with delay of mental health care in the period tax refunds are distributed.
Significance levels: * < 10% ** < 5% *** < 1%