

**BEFORE THE WASHINGTON  
UTILITIES AND TRANSPORTATION COMMISSION**

WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION,

Complainant,

v.

CASCADE NATURAL GAS  
CORPORATION,

Respondent.

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# Exploring the Relationship between Debt and Health after Incarceration: a Survey Study

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**Abstract** Financial debt and incarceration are both independently associated with poor health, but there is limited research on the association between debt and health for those leaving incarceration. This exploratory study surveyed 75 people with a chronic health condition and recent incarceration to examine debt burden, financial well-being, and possible associations with self-reported health. Eighty-four percent of participants owed at least one debt, with non-legal debt being more common than legal debt. High financial stress was associated with poor self-reported

health and the number of debts owed. Owing specific forms of debt was associated with poor health or high financial stress. Non-legal financial debt is common after incarceration, and related stress is associated with poor self-reported health. Future research is needed in larger populations in different geographical areas to further investigate the relationship and the impact debt may have on post-release poor health outcomes. Policy initiatives to address debt in the post-release population may improve health.

**Keywords** Incarceration · Health · Debt · LFOs · Prison · Jail · Justice · Reentry · Financial stress

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## Background

Personal debt has been associated with poor mental and physical health even when controlling for socioeconomic status [1–3]. Debt is associated with higher rates of depression and anxiety, stress, substance use, poorer sleep quality, hypertension, higher C-reactive protein, more self-reported chronic medical conditions, and all-cause mortality [4–10]. The relationship between debt and health is nuanced and may be bidirectional. Poor health may lead to debt; notably, people with limited resources are more likely to have unsecured debt after an adverse health event, and medical debt contributes to nearly two-thirds of bankruptcies [11, 12]. It is also thought that debt itself causes poor health

outcomes by increasing stress and unhealthy coping mechanisms while potentially decreasing healthcare utilization [2].

Financial strain from unmanageable debt is common among poor people of color [13] which is the same population most heavily burdened by the criminal legal system [14]. Low wealth (assets minus debt) increases the likelihood of incarceration and disproportionately affects Black people [15], and incarceration negatively impacts future wealth creation [16]. For example, a recent review showed that 50–90% of people leaving incarceration owe debt [17]. A history of incarceration is associated with many of the same negative health outcomes as debt including depression and suicide, substance use, obesity, hypertension, and cardiovascular events [18–21]. People leaving the criminal justice system have more than 12 times higher risk of all-cause mortality than the general population [21], and incarceration itself has been shown to have negative effects on mental and physical health after release [18, 22–24].

Most studies investigating post-incarceration debt focus on unpaid child support and legal financial obligations (LFOs) such as court fees, fines, restitution, and supervision fees but typically do not include other forms of debt [17]. Unpaid child support and LFOs are associated with increased rates of depression, worse self-reported physical health, and higher rates of substance use among men released from prison or jail [25–27], though there is less information in the literature around how non-legal debt may impact health in this population. A small number of studies have shown that medical copays in prison are associated with delays in diagnoses and decreased healthcare utilization among women [28], and that medical debt and “debts of survival,” such as resources needed for food and shelter, hinder women’s healthcare access after release from prison [29].

This study seeks to more completely understand the scope of the debt burden among individuals with chronic illnesses who have experienced incarceration and how specific types of debt may be related to perceived financial stress and health during the immediate period after release. Understanding the association of debt and health among previously incarcerated individuals can allow for the identification of intervenable points to prevent debt accumulation from impacting health outcomes.

## Methods

### Setting

This study was conducted from August to September 2019 in a mid-sized city in New England. Participants were recruited from several organizations that work with previously incarcerated people and community health workers specifically trained in working with previously incarcerated patients assisted with recruitment. Referral organizations included a Transitions Clinic, part of a national network of primary care clinics that serve people leaving federal or state prison, a reentry program located in the city hall, local halfway homes, a community health fair, and referrals from study participants. Participants were recruited from the area regardless of where they were incarcerated or had lived previously.

### Participant Eligibility

Participants qualified for the study if they were over the age of 18 and had any chronic health condition or were over fifty years old, were English speaking, and were released from jail or prison within the past year.

### Data Collection

All participants were interviewed in person by the same researcher, and verbal consent was obtained before the administration of the survey. All questions were read aloud to the participant,s and responses were recorded on a Qualtrics survey using an iPad. The interviews took, on average, 20 min to complete, and participants were compensated with \$10 gift cards. All individuals who met the study inclusion criteria were provided resources for free local financial counseling services regardless of participation in the study.

### Study Measures

We collected information on participant demographics, health, criminal legal system involvement, financial situation, and debt. Participant health was measured using the SF-20 questionnaire [30] which includes questions on physical and mental health. We used the SF-20 to characterize the overall burden of illness; specific chronic conditions found in this

cohort have been previously described [31]. Participants were read a list of possible types of debt including consumer debt, non-loan debt, LFOs, and criminal justice-associated debt and were asked how much they owed for each type. Consumer debts included credit card debt, student loans, and medical bills. Non-loan debt included debt resulting from unpaid bills or fines, such as driving violations or bank account fees. LFOs were defined as money currently owed to the criminal legal system including legal fines, court fees, supervision fees, restitution, and program fees (i.e., mandatory classes). Criminal legal debt was defined as debt resulting from incarceration but not owed to the state, which included debt owed to lawyers and bail, as well as social networks to afford commissary, phone calls, and healthcare during incarceration. Financial difficulty, self-perceived indebtedness, and financial stress were assessed using the Likert scale (see [Appendix](#) for full questions). Receipt of monetary support from someone outside during their most recent incarceration was used as a proxy for social support.

### Analysis

All data were exported from Qualtrics to Excel. GraphPad Prism and SPSS were used for statistical analysis. Data were analyzed using descriptive statistics. Participants were divided into two groups: low health scores (i.e., poor health, SF-20  $\leq 55$ ) and higher health scores (i.e., better health, SF-20  $> 55$ ). Mann–Whitney U tests were performed to test whether these groups differed in their financial difficulty, self-perceived indebtedness, financial stress, number of debts, total amount of debt, and social support. Similarly, participants were divided into low financial stress (self-reported stress rated 1–4) and high financial stress (self-reported stress rated 5). These groups were compared with Mann–Whitney U tests for the above measures along with SF-20 scores for overall health and a sub-score on mental health. Chi-squared analysis using Fisher’s exact test was used to test for associations between low income ( $< \$10,000/\text{year}$ ) and health scores as well as for financial stress. To analyze whether the likelihood of having high financial stress or poor health was associated with demographic differences, a chi-squared analysis using Fisher’s exact test was performed

comparing Black vs. non-Black participants and men vs. women.

To test whether participants who owed specific types of debt were more likely to have poor health, the percentages of participants who fell into low or high health score groups were compared with chi-squared analysis using Fisher’s exact test among participants who owed each type of debt. Analysis to investigate whether participants who owed specific types of debt were associated with higher financial stress was done in the same manner. The Mann–Whitney U test was performed to test whether participants who owed child support were younger than participants who did not owe child support.

## Results

### Demographics

Seventy-five participants were enrolled in this study. Participants were largely middle-aged Black men without a college education (Table 1). Most resided in halfway houses, homeless shelters, or with friends or family; only 13% were residing at their own house or apartment. As Connecticut has an integrated jail and state prison system, we investigated the length of most recent incarceration instead of whether participants had been released from jail or prison. Forty-eight percent of participants’ most recent incarceration had been 12 months or longer. Half of the participants had been released for at least six months, and 20% had been released within the past month. The average SF-20 self-reported health was  $56.15 \pm 14.71$  (mean  $\pm$  SD). The average SF-20 score for those under 50 was  $55.35 \pm 14.97$ ,  $N=48$ , and for those 50 and older was  $57.56 \pm 13.05$ ,  $N=27$  (mean  $\pm$ SD).

### Study Participants’ Finances and Debt

Nearly half of the participants had a yearly income of less than \$10,000, and almost a third of the study participants reported finding it difficult or very difficult to manage financially (Table 2). Nearly half reported the highest level of financial stress, and half had high levels of self-perceived indebtedness. Eighty-four percent of participants owed at least one debt with over a quarter of participants owing four or more

**Table 1** Demographics of the study population

|                                     |   | N/Median | %/range   |
|-------------------------------------|---|----------|-----------|
| Age (mean, SD)                      |   | 45.65    | 10.63     |
| Gender                              | Male  | 54       | 72%       |
| Race/ethnicity                      | Black/African American (non-Hispanic)         | 35       | 47%       |
|                                     | White (non-Hispanic)                          | 26       | 35%       |
|                                     | Hispanic/Latino (any race)                    | 11       | 15%       |
|                                     | Native American                               | 5        | 7%        |
|                                     | Unknown/other                                 | 3        | 4%        |
| Education                           | Less than 12 years                            | 18       | 24%       |
|                                     | High school/GED                               | 32       | 43%       |
| Residence                           | Halfway house                                 | 21       | 28%       |
|                                     | Friend/family member's home                   | 19       | 25%       |
|                                     | Homeless/unsheltered                          | 16       | 21%       |
|                                     | Own home                                      | 10       | 13%       |
|                                     | Supportive housing/sober house                | 9        | 12%       |
| Recruitment                         | Health Justice Laboratory                     | 22       | 29%       |
|                                     | Halfway homes                                 | 15       | 20%       |
|                                     | Community reentry programs                    | 14       | 19%       |
|                                     | Transitions Clinic Network                    | 10       | 13%       |
|                                     | Referral                                      | 10       | 13%       |
| Lifetime criminal legal involvement | Community health fair                         | 4        | 5%        |
|                                     | Age first incarcerated                        | 17       | (8–68)    |
|                                     | Number of incarcerations                      | 5        | (1–30)    |
|                                     | Years incarcerated                            | 7        | (0.08–50) |
| Time since release                  | Most recent incarceration 12 months or longer | 36       | 48%       |
|                                     | Currently on probation                        | 30       | 40%       |
|                                     | Less than 4 weeks                             | 15       | 20%       |
|                                     | 1–6 months                                    | 22       | 29%       |
|                                     | 6–12 months                                   | 38       | 51%       |
| SF-20 health score                  | ≤ 55  | 36       | 48%       |
| SF-20 health score                  | > 55  | 39       | 52%       |

different sources of debt. The median amount of debt among people who owed any amount of debt was \$6800 (IQR \$1350–\$21,425). Half of the participants were categorized as receiving social support (money sent in during their most recent incarceration).

The most common form of debt held by study participants was unpaid utility bills, which nearly half of the participants owed, followed by credit card debt and student loan debt (Table 3). Over half of the participants who had at least one child under 18 owed child support debt. The amount of debt owed was highly variable between participants, with child support being the highest amount of debt (median \$13,750) and driving violation tickets being the lowest (median \$300). Of note, 24% of participants said

they had experienced identity theft while incarcerated, resulting almost exclusively from people in participants' social networks charging expenses (mostly utilities) in the participants' names while they were incarcerated.

#### Associations between Financial Stress, Debt, and Health

Having a low income (<\$10,000/year) was not significantly associated with having poor health or high financial stress (chi-squared;  $p=0.596$  and  $p=0.404$ , respectively). Therefore, income was not controlled for in the further analysis. Participants with lower health scores had significantly

**Table 2** Finances and debt of study participants

| Question                    | Response                     | Number | Percent |
|-----------------------------|------------------------------|--------|---------|
| Income                      | < \$10,000/year              | 35     | 47%     |
| Financial difficulty        | Comfortable/alright          | 23     | 31%     |
|                             | Getting by                   | 18     | 24%     |
|                             | Difficult/very difficult     | 24     | 32%     |
| Self-perceived indebtedness | Completely disagree/disagree | 29     | 39%     |
|                             | Neither                      | 8      | 11%     |
|                             | Agree/completely agree       | 38     | 51%     |
| Financial stress            | Low stress (1–4)             | 42     | 56%     |
|                             | High stress (5)              | 33     | 44%     |
| Number of debts             | 0                            | 12     | 16%     |
|                             | 1–3                          | 42     | 56%     |
|                             | ≥ 4                          | 21     | 28%     |
| Amount of debt (\$)         | Unknown                      | 5      | 7%      |
|                             | 0                            | 12     | 16%     |
|                             | 1–999                        | 12     | 16%     |
|                             | 1000–15,000                  | 32     | 43%     |
|                             | > 15,000                     | 18     | 24%     |
| Received social support     |                              | 39     | 52%     |

**Table 3** Prevalence of debts among study participants ( $N=75$ )

|                   | Number | Percent | Amount (\$) Median (Q1–Q3) |
|-------------------|--------|---------|----------------------------|
| Utility bills     | 36     | 48%     | 950 (300–1350)             |
| Credit card       | 20     | 27%     | 1250 (488–10,000)          |
| Student loans     | 17     | 23%     | 7000 (5000–11,000)         |
| Child support     | 16     | 57%*    | 13,750 (5750–29,500)       |
| LFOs              | 16     | 21%     | 580 (275–1345)             |
| Criminal legal    | 15     | 20%     | 1050 (463–5275)            |
| Bank account fees | 11     | 15%     | 560 (250–795)              |
| Driving violation | 10     | 13%     | 300 (128–466)              |
| Social network    | 7      | 9%      | 1000 (475–6250)            |
| Medical bills     | 7      | 9%      | 3000 (838–19,750)          |
| Car loans         | 4      | 5%      | 333 (75–19,088)            |

\*  $n=28$ , number of participants with children under 18

higher levels of financial stress than participants with higher health scores (Table 4;  $p < 0.008$ ). Poor health was not significantly associated with financial difficulty, self-perceived indebtedness, number or amount of debts, or social support. Participants with high levels of financial stress had significantly higher levels of self-perceived financial difficulty ( $p < 0.001$ ) and self-perceived indebtedness ( $p = 0.005$ ); a greater number of debts ( $p < 0.001$ ),

poorer overall health ( $p < 0.001$ ), and mental health sub-scores ( $p = 0.019$ ; Table 4).

Women were more likely than men to have high financial stress (62% vs. 37%;  $p = 0.046$ ). There was no statistical significance between the likelihood of women and men having poor health (chi-squared with Fisher's exact test; 62% vs. 43%;  $p = 0.106$ ). The likelihood of having high financial stress or poor health between Black vs. non-Black participants was not statistically significant (chi-squared with Fisher's exact test; 47% vs. 41%,  $p = 0.400$ ; 56% vs. 42%,  $p = 0.156$ , respectively).

Participants who had debt from utility bills or debt owed to social networks were likelier to have poor health ( $p = 0.025$ ;  $p = 0.042$ , respectively, Table 5). Owing utility bill debt, criminal legal system-associated debt, bank account fees, and medical bills were all associated with a higher likelihood of having high financial stress (Table 5). Participants who owed child support were more likely to have better health than participants without child support debt ( $p = 0.035$ ). This was not due to the effect of age, as participants with and without child support debt were similar in terms of median age (medians = 43 and 45, respectively; Mann–Whitney U test;  $p = 0.317$ ). No other forms of debt were associated with the likelihood of having poor health or high financial stress.

**Table 4** Associations between financial measures and health

|  | Health              |                      |                | Financial stress   |                      |                |
|--|---------------------|----------------------|----------------|--------------------|----------------------|----------------|
|  | Poor                | Good                 | <i>P</i> value | Low                | High                 | <i>P</i> value |
| Income < \$10,000/year <sup>1</sup>      | 67%                 | 67%                  | 0.575          | 64%                | 70%                  | 0.348          |
| Financial difficulty <sup>2</sup>        | 4 (2–5)             | 3 (2–4)              | 0.095          | 3 (2–4)            | 4 (3–5)              | <0.001 ***     |
| Self-perceived indebtedness <sup>2</sup> | 4 (2–5)             | 3 (2–4.5)            | 0.772          | 3 (2–4)            | 4 (2–5)              | 0.005 **       |
| Financial stress <sup>2</sup>            | 5 (3–5)             | 4 (2–5)              | 0.008 **       | -                  | -                    | -              |
| Number of debts                          | 2 (1–4)             | 2 (1–3)              | 0.529          | 1.5 (0.25–3)       | 3 (2–5)              | <0.001 ***     |
| Amount of debt (\$)                      | 2335<br>(58–12,750) | 4000<br>(146–11,249) | 0.819          | 1750<br>(0–10,393) | 4265<br>(400–24,100) | 0.096          |
| Health                                   | -                   | -                    | -              | 61 (52–70)         | 49 (41–59)           | 0.001 **       |
| Mental health                            | -                   | -                    | -              | 20 (18–24)         | 16 (12–20)           | 0.019 *        |
| Received social support <sup>1</sup>     | 47%                 | 56%                  | 0.286          | 57%                | 45%                  | 0.220          |

Median (Q1–Q3). Mann–Whitney U test performed. Low health score  $n=36$ , high health score  $n=39$ ; low financial stress  $n=42$ , high financial stress  $n=33$

<sup>1</sup>Chi-squared analysis performed

<sup>2</sup>Score from 1–5, 5 being the highest

**Table 5** Associations between debt source, health, and financial stress

| Source of debt    | <i>N</i> | Poor health | <i>P</i> value | High financial stress | <i>P</i> value |
|-------------------|----------|-------------|----------------|-----------------------|----------------|
| Utility bills     | 36       | 61%         | 0.025 *        | 64%                   | <0.001 ***     |
| Credit card       | 20       | 60%         | 0.160          | 60%                   | 0.076          |
| Identity theft    | 18       | 61%         | 0.157          | 50%                   | 0.374          |
| Student loans     | 17       | 39%         | 0.269          | 61%                   | 0.080          |
| Child support     | 16       | 25%         | 0.035 *        | 44%                   | 0.605          |
| LFOs              | 16       | 31%         | 0.109          | 44%                   | 0.605          |
| Criminal justice  | 15       | 53%         | 0.431          | 67%                   | 0.046 *        |
| Bank account fees | 11       | 73%         | 0.073          | 73%                   | 0.040 *        |
| Driving violation | 10       | 40%         | 0.421          | 50%                   | 0.469          |
| Social network    | 7        | 86%         | 0.042 *        | 71%                   | 0.129          |
| Medical bills     | 7        | 71%         | 0.183          | 86%                   | 0.026 *        |
| Car loans         | 4        | 75%         | 0.278          | 75%                   | 0.222          |

Percentage of debt holders who have poor health and percent who have high financial stress per debt source. Chi-squared analysis was performed using Fischer's exact test

## Discussion

In this study of financial debt and health among people with a history of incarceration in a small city, we found a high prevalence of debt and related stress. High levels of financial stress were associated with worse self-reported health, increased financial difficulty, higher levels of self-perceived indebtedness, and a higher number of different debts owed, but was not associated with the amount of debt owed. Several

forms of debt were associated with having poor health or high financial stress; utility debt, which nearly half of the participants owed, was associated with both poor health and financial stress. Owing child support was associated with better self-reported health.

Debt has previously been shown to be associated with financial stress among people with histories of incarceration [32–34]. The finding that the number of debts—as opposed to the amount of debt—was associated with financial stress is consistent with previous

work showing that when controlling for the amount of debt, a decrease in the number of different debts is associated with decreased anxiety [35]. The high prevalence of utility debt and its reported association with identity theft by participants' social networks is comparable with findings from a qualitative study set in the same city interviewing people with mental illnesses and histories of incarceration [36].

Only 21% of participants reported owing LFOs, which is lower than the 50–90% of people leaving incarcerating owing debt largely in the form of LFOs that was found in a recent review [17]. This is likely in part because Connecticut waives LFOs for people who receive public assistance or have an income less than 125% of the federal poverty level [37]. Waiving of LFOs for participants of low socioeconomic status may contribute to LFOs not being associated with poor health or financial stress in this study. Of note, criminal legal system-associated debt (money owed to lawyers, for bail, or to social networks for costs during incarceration) which is far less studied than LFOs was associated with higher financial stress.

Owing child support has consistently been shown to be associated with poor physical and mental health among people with histories of incarceration [25, 26, 38], and it is unclear why the opposite effect was observed here. It is possible our results are reflective of an unmeasured confounding variable. For example, perhaps those who owe child support are more likely to be in contact with their children, and contact with children is protective for parental health [39].

Our study had several limitations. The sample was not random; rather, it was convenience sampling mostly of people already connected to community resources. This study excluded non-English speaking participants and does not represent the scope of debt and associations with health held by non-English speaking communities such as different sources of debt held by immigrants. This study was not longitudinal and was rather a snapshot of the debts people had at the time of the study. It was not reflective of debts that had previously been paid off and possible associations those debts may have had on health. As the sample size was relatively small, there may have been differences in health and financial stress based on demographics that this study was under powered to detect. The results of this study were observational, and therefore, associations found are not necessarily causal.

This small exploratory study leaves much room for future research. As debt is a local phenomenon, more studies are needed in different geographical areas to understand the debt burden more fully in this population. Future studies may seek to identify protective factors that prevent debt from impacting health. Because the debt has previously been associated with social network strain in this population, future studies could investigate how such strain influences health. Further research is needed to investigate the specific health outcomes that are associated with debt in this population. Based on this study's findings, it is important to include debt as a variable when studying post-incarceration health generally. As noted in this study, it is the number of debts as opposed to the amount of debt that is associated with increased financial stress.

There are many potential policy initiatives that could reduce the impact of debt on health in the post-release population. Debt should be seen as an intervenable opportunity to improve health. Health care providers who care for patients with histories of incarceration could incorporate screening for debt to promote better health outcomes. We believe policy measures to prevent debt accumulation are preferred to measures that assist with managing the debt after it has accumulated. When possible, these measures should be systems level so the burden does not fall on the individual being incarcerated. For example, policy measures could be put in place to automatically freeze child support obligations while a person is incarcerated. For forms of debt that cannot be automatically suspended, building in access to financial guidance just before a person enters prison, or soon after they enter, could help people take steps to lessen their future debts, such as freezing their credit to reduce the likelihood of identity theft, freezing student loans, canceling utility, phone, and other accounts, changing to a non-over drafting bank account, and negotiating with creditors. During incarceration, having access to free healthcare and basic necessities would prevent people from having to borrow money to afford to live. Even further upstream, economic and political reforms such as raising the minimum wage and ensuring that people have access to affordable housing and healthcare would further reduce the likelihood of post-release debt. For instances where the debt has already accumulated, providing financial guidance after, or as part of planning for release, may increase people's ability to manage their financial problems



[40, 41]. Linking people with community advocacy organizations and financial advisors, as well as appropriate legal support through healthcare providers with medical-legal partnerships to assist patients in navigating their debt, especially with regard to identity theft, may also be helpful.

## Conclusions

This is the first study to our knowledge that assesses the full scope of debt held by people leaving incarceration with a chronic health condition, including but not limited to legal debt, and has drawn associations between specific forms of debt and financial stress and poor health. Researchers and healthcare providers should treat debt as an intervenable point to improve health in the population of people returning to the community after incarceration.

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**Data Availability** The datasets generated during and analysed during the current study are available from the corresponding author on reasonable request.

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