

The Role of Housing Assistance in Promoting Work for Families With Disabilities

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## **Abstract**

Research shows that disabled members of non-elderly families (i.e., all adults younger than age 62) work much less than non-disabled peers despite desiring employment at similar rates. This pattern persists among Social Security Administration program recipients, whose income-based benefits both support disabled households and disincentivize work. Similarly, the U. S. Department of Housing and Urban Development provides income-based rental assistance that improves renters' well-being even as it reduces their likelihood of working. Although both agencies offer employment supports intended to offset their work disincentives, neither achieves its goal in isolation. However, these supports might improve work outcomes for disabled families when combined. Using linked National Health Interview Survey and Housing and Urban Development data, this study tested the combined influence of Social Security Administration and Housing and Urban Development assistance on work activities. It further examined work outcomes among families reporting different disability types and disabled family members with different roles. Finally, this study tested whether Housing and Urban Development assistance moderated the relationships between work outcomes, disability types, and roles of disabled family members.

## **Background**

Although disabled Americans desire and value employment at levels similar to their non-disabled peers, they obtain it at much lower rates (Ali, Schur, & Blanck, 2011; Kraus, Lauer, Coleman, & Houtenville, 2018). Low employment combined with unique medical and service needs produces material hardships like food insecurity and housing instability for families with disabled individuals (Parish, Rose, Grinstein-Weiss, Richman, & Andrews, 2008). Through its Supplemental Security Income and Social Security Disability Insurance programs, the Social Security Administration supports the financial needs of disabled individuals who have work-preventing impairments and the employment goals of those seeking work (SSA, 2017). Supplemental Security Income provides cash assistance and Medicaid to elderly, blind, and disabled people with limited income (SSA, 2017). Social Security Disability Insurance provides benefits including Medicare to disabled or blind individuals who have worked and contributed to the Social Security Trust Fund (SSA, 2017).

### **Social Security Administration Work Disincentives and Attempts to Reduce Them**

The Social Security Administration's disability programs contain at least two potential work disincentives. First, both programs contain maximum income limits and reduce benefits as income increases. Thus the loss of Social Security Administration benefits that accompanies work creates a high marginal tax rate on earned income that recipients reasonably avoid. Second, someone who reaches the maximum income limit of a Social Security Administration program may lose access to affordable healthcare through Medicare or Medicaid. This reality carries particular importance for disabled people, who pay more overall and out of pocket for medical expenses than non-disabled peers (Mitra, Findley, & Sambamoorthi, 2009; SSA, 2017).

Aware that all income-limited programs contain natural work disincentives, the Social Security Administration currently offers several measures meant to reduce these disincentives. Some measures exist across programs. For example, both Supplemental Security Income and Social Security Disability Insurance subtract impairment-related work expenses like specialized equipment from recipients' income when calculating benefit levels and program eligibility. Likewise, both programs reinstate recipients' benefits quickly when a disability prevents a job that ended program eligibility. Some disincentive reduction measures are program-specific. For example, Supplemental Security Income offers Plan to Achieve Self-support, a program that allows recipients to save toward education, job training, or business expenses. When Supplemental Security Income calculates a person's monthly benefit payment, it excludes \$65 of earned income, \$20 of earned or unearned income, and half of all additional earnings. Supplemental Security Income recipients may also retain Medicaid after leaving the program if they remain disabled, need Medicaid to work, and earn less than the combined value of program income, Medicaid, and other supports. For those with persisting disabilities, Social Security Disability Insurance provides a nine-month trial work period during which recipients can earn unlimited income without reducing benefits. After this period, recipients continue to receive Medicare for 93 months. They also receive full benefits in any month in the next three years in which earnings fall below a threshold called Substantial Gainful Activity (SSA, 2017).

### **Housing and Urban Development Work Disincentives and Attempts to Reduce Them**

Despite measures to reduce work disincentives in their programs, work rates remain low among Social Security Administration recipients (Kregel, 2012). This may indicate a need for further employment support from sources outside the agency. The U. S. Department of Housing

and Urban Development offers three main rental assistance programs: Housing Choice Vouchers, Public Housing, and Multifamily Housing. Whereas Housing Choice Vouchers are portable vouchers that low-income tenants use to rent on the private market (HUD, 2017), Public Housing refers to rental units owned and operated by local housing authorities (HUD, 2017). Housing and Urban Development funds several Multifamily Housing programs for particular populations, including Section 811 Supportive Housing for Persons with Disabilities. This program funds rental units with supportive services and offers vouchers to tenants living in those units (HUD, 2017).

Like Social Security Administration programs, those operated by Housing and Urban Development offer income-limited support to their users. Up to the federally determined fair market rent, these programs hold a tenant's portion of rent and utilities to 30% of adjusted income and pay the remainder through local housing authorities (HUD, 2017). This process suppresses work by placing a 30% marginal tax rate on each dollar an assisted renter earns. Also like the Social Security Administration, Housing and Urban Development offers measures meant to reduce its work disincentives. Although not always aimed at disabled individuals and their families, these measures make employment more attractive to them in theory.

For example, when any Public Housing tenant or any disabled tenant using a Housing Choice Voucher or Multifamily Housing begins work after 12 months of unemployment, the Earned Income Disallowance instructs housing authorities to ignore new income in rent calculations for 12 months and half of new income for another 12 months ("Self-sufficiency Incentives," 2017). Because many Social Security Administration recipients meet the Earned Income Disallowance's unemployment definition, this policy allows them to offset some employment-triggered disability benefit losses with rental savings. Disabled families assisted by Housing and Urban Development programs may also deduct certain expenses from the income used to calculate their rent if such expenses help a family member work. Some resemble impairment-related work expenses offered by the Social Security Administration, meaning recipients of both disability and rental assistance benefit twice from work. For example, disabled families may deduct unreimbursed medical expenses, attendant care, and supportive equipment exceeding 3% of their income. This matters to families who fear losing Medicaid if an individual receiving Supplemental Security Income begins working. Despite Housing and Urban Development's work support measures, its programs have been connected to reduced work activity (Gubits et al., 2015; Gubits et al., 2018).

## **Problem Statement**

Taken alone, neither the work supports offered by the Social Security Administration nor those offered by Housing and Urban Development offset the work disincentives in their services. However, existing research does not examine whether they offset these disincentives in combination. Current research also does not compare Housing and Urban Development programs' support for work in families with different kinds of disabilities or disabled members with different roles (e.g., adult or child). However, studies indicate that different types of disabilities may be related to different work outcomes. For example, 18 to 64-year old D/deaf<sup>1</sup> and vision-impaired people in the United States have higher employment rates than people with

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<sup>1</sup> The term deaf with a lower case d indicates the medical condition of hearing loss without referencing claims to a larger community. Individuals who identify actively with the cultural and linguistic community of hearing-impaired individuals claim the term Deaf with a capital D.

cognitive, ambulatory, self-care, and independent living disabilities (Kraus et al., 2018). Raising a disabled child may also lead an adult to have different work experiences than having a personal disability (Huang et al., 2010; Sonik, Parish, Ghosh, & Igdalsky, 2016).

### **Research Questions**

The current study poses three research questions:

1. How do work outcomes among adults in families receiving Social Security Administration benefits differ based on:
  - a. Types of disability in the family;
  - b. roles of disabled family members (adult or child), and;
  - c. Housing and Urban Development rental assistance?
2. Do the relationships in Research Question 1 remain when controlling for demographic variables?
3. How do Housing and Urban Development's rental assistance programs interact with different disability types and roles of disabled family members to influence work outcomes?

### **Hypotheses**

This study offers the following hypotheses in response to its research questions:

1. Respondents reporting one of six disabling activity limitations on a national health survey will be less likely to work and will work fewer hours than counterparts not reporting those particular limitations. Based on previous research, descriptive and inferential statistics will indicate a pattern of better work outcomes for people with sensory disabilities and worse outcomes for those with cognitive, ambulatory, self-care, or independent living disabilities (Kraus et al., 2018).
2. Respondents with disabled children will report better work outcomes than respondents with personal disabilities. This is because adults seeking work with disabilities carry them into workplaces that may not accommodate them. This is not true for non-disabled adults who find caretakers for disabled children.
3. Because of Housing and Urban Development's work incentives, respondents receiving rental assistance at the time in which they report family disability and work information will report better work outcomes than comparison respondents who will receive assistance in the next two years.
4. The influence of Housing and Urban Development assistance on work outcomes will vary across disability types and roles of disabled family members.

### **Methods**

#### **Data**

This study involved secondary analysis of a data set linking National Health Interview Survey data to Housing and Urban Development administrative records. (Lloyd & Helms, 2016). The National Center for Health Statistics created the data set and now maintains it in several Research Data Centers in the eastern United States. The National Health Interview Survey is an annual, nationally representative survey of American health (Lloyd & Helms, 2016). It employs

a stratified, multistage sampling design and collects cross-sectional data at the household, family, sample adult, and sample child level. Approximately 35,000 households and 90,000 individuals participate in this survey each year. Housing and Urban Development data derive from the Public and Indian Housing Information Center and the Tenant Rental Assistance Certification System databases. These systems store program usage information for families receiving Housing Choice Vouchers, Public Housing, and Multifamily Housing (Lloyd & Helms, 2016).

Although the National Health Interview Survey collects cross-sectional data, Housing and Urban Development data contain longitudinal elements. Specifically, the latter records the number of days between a respondent's National Health Interview Survey and that respondent's next receipt of rental assistance. The current study took advantage of these data to compare families receiving rental assistance at the time of their National Health Interview Survey with those receiving assistance in the two years following the survey. This choice assumes that disabled families who will receive rental assistance in the near future have similar characteristics and motivations as disabled families who already receive assistance at the time of their interviews. Therefore comparisons between these groups effectively isolate the impact of Housing and Urban Development assistance.

### **Participants**

This study chose adult respondents to the National Health Interview Survey through a systematic inclusion and exclusion process. Although the current data set includes data from 1999-2012, not all years include the disability type variables needed for the current analyses. For this reason, all respondent records prior to 2008 were excluded. Next, all National Health Interview Survey respondents who could not be linked to Housing and Urban Development records because they did not meet linkage eligibility criteria or never received rental assistance were removed. Following this, respondents who did not receive Housing and Urban Development assistance either at the time of their National Health Interview Survey or in the two years following their survey were excluded from analysis. Finally, respondents whose families included an adult older than age 61 or who did not receive Social Security Administration benefits were removed. A total of 4,169 respondents remained at the end of this process.

### **Measures**

**Dependent variables.** The current study included two dependent variables, each derived from the National Health Interview Survey. The first was a binary variable retrieved from the survey's person-level files and reporting whether sample adult respondents worked or sought work in the week before their survey. The second was a continuous variable retrieved from person-level files and reporting the number of hours worked by employed sample adults in that same week.

**Independent variables.** This study included four binary disability type categories derived from the National Health Interview Survey disability screener and corresponding to items from other national surveys (Brucker & Helms, 2017). The first category included families reporting ambulatory (serious difficulty walking or climbing stairs), independent living (difficulty running errands alone), and self-care (difficulty dressing or bathing) disabilities. Both independent living and self-care disabilities are called *activities of daily living* (ADL) disabilities throughout this report. The second category included families reporting cognitive disabilities

(serious difficulty concentrating, remembering, or making decisions). The third category included families reporting hearing (person is D/deaf or has serious difficulty hearing) or visual (person is blind or has serious difficulty seeing even with glasses) disabilities. Both hearing and visual disabilities are called *sensory* disabilities throughout this report. Finally, the reference disability type included families not reporting one of the six National Health Interview Survey disabilities. Importantly, these families likely had disabilities not captured by the survey. Because Social Security Administration programs report a fraud rate of less than one percent, the fact that all families in this study received Social Security Administration benefits indicates that they all had disabilities recognized by the federal government (SSA, 2019c). Variables indicating roles of disabled family members derived from Housing and Urban Development administrative data and included disabled adult respondents (older than age 18) and disabled children (younger than age 18). The rental assistance variable also derived from these data. It indicated whether a sample adult's family received rental assistance at the time of their National Health Interview Survey or within the two-year period following that survey. All participants received rental assistance at one or the other of these time points.

**Covariates.** Sample adult covariates included binary sex and race variables in which men served as the reference group for women and those identifying as racial minorities (Black, Hispanic, Asian, and Other) served as the reference group for those identifying as White. Analyses also controlled for a continuous measure of each sample adult's age in years and two variables that adjusted variances for National Health Interview Survey sampling procedures.

## Results

This study's analysis occurred in three steps corresponding to the research questions provided above. Per National Health Interview Survey guidelines, analyses were weighted at the sample adult level to adjust for oversampling, survey nonresponse, and the use of multiple years of cross-sectional data.

### Research Question 1

This study first used descriptive statistics to determine relationships between respondent work outcomes and all levels of each independent variable. Table 1 shows the results of these analyses. Regarding disability type, percentages of adults working or seeking work in the week before their National Health Interview Survey ranged from 57% among those reporting cognitive disabilities to 60% among those reporting sensory disabilities. Whereas 48% of respondents reporting children with disabilities worked or sought work in the week before their surveys, 61% of those reporting personal disabilities did so. Regarding Housing and Urban Development rental assistance timing, 61% of respondents receiving assistance at the time of their surveys worked or sought work whereas 66% of those receiving it in the next two years did so.

Number of hours worked among employed respondents varied little across levels of independent variables. Most employed participants worked approximately 40 hours per week. Regarding disability type, hours worked per week ranged from 41 among employed respondents reporting cognitive disabilities to 43 among those reporting sensory disabilities. Whereas employed respondents reporting disabled children worked 45 hours per week, those reporting personal disabilities worked 42 hours per week. Employed respondents receiving rental assistance at the time of their survey worked 41 hours per week. Those receiving assistance in the next two years worked 40 hours per week.

## Research Question 2

Next, the extent to which the relationships from Research Question 1 remained after controlling for demographic variables was tested using logistic and ordinary least squares regression. Table 2 presents the results of these analyses. Due to small sample sizes, analyses relating work to disability types, roles of disabled family members, and rental assistance timing produced extreme parameter estimates that should not be interpreted. Although these analyses converged as expected, estimates and confidence intervals were too large to represent the national population accurately. This indicates either extremely small numbers of participants in a level of one or more independent variables samples or multicollinearity between independent variables<sup>2</sup>. Among employed recipients of Social Security Administration programs, results suggest that respondents reporting a family sensory disability worked more than those not reporting any disabilities from the National Health Interview Survey screener. No other independent variables influenced work hours significantly.

## Research Question 3

Finally, the extent to which Housing and Urban Development assistance interacted with disability types and roles of disabled family members to predict work outcomes was examined using logistic and ordinary least squares regression. Because using the same rental assistance variable in each interaction creates multicollinearity, interactions for each disability type were examined separately. Interaction terms and their constituent main effects were also mean-centered to avoid multicollinearity created by the former constituting a linear combination of the latter. (Cronbach, 1987)

Analyses for Research Question 3 yielded two significant interactions at face value. Respondents reporting ambulatory, ADL, or cognitive disabilities had lower odds of working or seeking work when receiving rental assistance during their National Health Interview Survey compared to those receiving assistance in the two years after their survey, *OR* > 999.99, 95% CI [ $> 999.99, > 999.99$ ],  $p < .05$ . However extreme parameter estimates again render these associations untrustworthy. For this reason the interactions were not graphed as planned. Regarding number of hours worked per week, no interaction effects were found between either disability type or the roles of disabled family members and rental assistance.

## Discussion

In general, findings did not support this study's hypotheses. Descriptive statistics indicated that respondents reporting one of six disabilities on the National Health Interview Survey screener experienced about the same work outcomes as respondents not reporting any of those six disabilities. Pairing this result with the finding that many Social Security Administration recipients did not report disabilities on the screener reveals an important detail about disability definitions in this study. The National Health Interview Survey identifies six broad categories describing an individual's ability to perform certain tasks (e.g., walking or climbing stairs). Respondents self-rate the difficulty they experience performing each task and may reject the disabled label even if they have an impairing condition (Brucker & Helms, 2017).

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<sup>2</sup> I was unable to determine the exact cause of Table 2's extreme parameter estimates due to data access constraints.

In contrast, the Social Security Administration recognizes 14 specific disabling conditions for adults and 15 for children (SSA, 2019a; SSA, 2019b). It also requires medical evidence supporting the disability claims of individuals applying for assistance. Because the current study defined its disability reference category as the absence of National Health Interview Survey impairments, this category certainly included many respondents with Social Security Administration disabilities. This likely resulted in suppressed work outcomes in the reference category and improved outcomes for households with National Health Interview Survey disabilities relative to peers with other disabilities (Burkhauser, Houtenville, & Tennant, 2014).

Contrary to expectations, respondents reporting disabled children were by far the least likely to be working or seeking work at the time of their survey. Because nearly all respondents reported a personal disability, this may reflect particular employment challenges faced by parents of disabled children. For example, this finding may reflect the fact that time required to care for a disabled child competes directly with time required to maintain employment. This may be particularly true for low-income parents who experience difficulty finding affordable childcare. Because this study only allowed participants who qualified for Housing and Urban Development assistance at one time or another, such parents were likely overrepresented in its sample.

Although all logistic regression models converged, small samples in analyses of work likelihood led to main effects for disability types and roles of disabled family members that were unrealistically extreme after controlling for covariates. These parameters should not be interpreted at face value or generalized to the wider U. S. population. At best they indicate general positive or negative relationships between likelihood of work and independent variables in this sample alone. Importantly, this study's findings cannot conclude that disability types or roles of disabled family members have no influence on work outcomes. These relationships (or lack thereof) remain to be determined.

Because main effect models for work hours used ordinary least squares rather than logistic regression, sample size did not influence these models as severely as those reporting work likelihood. Findings indicated a positive relationship between family sensory disabilities and work hours among employed respondents. This resembles Table 1's pattern in which respondents reporting sensory disabilities experienced slightly (but non-significantly) better work outcomes than those not reporting disabilities from the National Health Interview Survey. Importantly, comparing work hours among people with sensory disabilities to a group partly composed of other disabled people would favor the former. This is because past research indicates that people with sensory disabilities, a group composed mostly of D/deaf individuals, work more than those with other disabilities (Kraus et al., 2018). Study limits described below, make it inappropriate to conclude from current results alone that workers with sensory disabilities fare better than other low-income individuals with disabilities. However other researchers have reported similar findings in the U. S. and other industrialized nations (Boman, Kjellberg, Danermark, & Boman, 2015; Kraus et al., 2018). This collective pattern merits further investigation and could imply several explanations. For example, employers of low-income individuals may accommodate sensory disabilities more easily than other disability types. Alternatively, people with sensory disabilities may face less hiring discrimination than other disabled peers.

Neither descriptive nor inferential analyses indicated that Housing and Urban Development assistance improved work outcomes for respondents receiving Social Security Administration benefits. Neither did these analyses indicate that rental assistance reduced work

in this population. There are at least two possible explanations for these results. First, rental assistance may in fact have no significant net association on work among adults receiving Social Security Administration benefits. Second, an association may exist but be undetectable with this study's sample size. The association between rental assistance and respondent work hours was positive (but non-significant) in this analysis, although its standard error implies the possibility that rental assistance is associated negatively with work outside the present sample. Still, the absence of a clear negative relationship between Housing and Urban Development assistance and work hours in this study offers promise given previous findings that such assistance reduces employment likelihood among low-income renters (Gubits et al., 2015; Gubits et al., 2018).

Findings from logistic interaction analyses suffer from the same sample size problem as logistic main effect analyses but to a greater degree. This is because detecting interactions already requires more statistical power than detecting main effects. Therefore significant interactions from Research Question 3's analyses require the same severe caution as their counterparts in analysis Step 2. On their face the interactions seem to suggest that rental assistance is associated with reduced work among cognitive, ambulatory, and ADL disabilities. However, it remains unclear whether these associations would survive a more robust sample or what their size would be if they did. Findings from ordinary least squares interaction analyses provide more trustworthy parameter estimates. However the estimates themselves offer little to interpret, as no interactions reached significance.

### **Limitations**

The current project included several limitations beyond the noted difference in Social Security Administration and National Health Interview Survey disability definitions. Most notably, small sample sizes for individual analyses resulted in untrustworthy logistic regression parameters, preventing meaningful interpretations of significant main and interactions effects. Small sample sizes also reduced the number of possible covariates in each analysis to the three demographic variables used. Given more statistical power, analyses would have controlled for variables such as respondents' regions, education levels, and veteran statuses. Their inclusion in future studies of this type may lead to different results than those obtained here.

The current study also relied on cross-sectional National Health Interview Survey data rather than longitudinal data. This presented a challenge to understanding the direction between most of the study's independent and dependent variables. Future studies of this type could improve upon it by accessing longitudinal disability and work data. They might also increase their comparison group's sample size by including respondents who received rental assistance more than two years after their National Health Interview Survey. At the time of this project, two years was the maximum available comparison period.

### **Conclusion**

Nearly 30 years ago, George H. W. Bush signed the Americans with Disabilities Act. Despite the Act's Title I protections against disability-based workplace discrimination, disabled Americans continue to work less than they wish. This holds true even for those receiving Social Security Administration employment supports. The current study explored differences in work activities among Social Security Administration recipients with different disability types and disabled members with different roles. It further examined how Social Security Administration employment supports mix with those provided by the Department of Housing and Urban Development's rental assistance programs. Finally, it investigated whether rental assistance

programs moderated the associations between work activities, disability types and roles of disabled family members.

Although this study's findings do not provide conclusive answers to its research questions, they offer interesting questions for future research. Why might individuals with sensory disabilities experience better work outcomes than those with other disability types? What explains reduced work activities among parents of disabled children? Finally, what results might a study of this type produce with a larger sample and more theoretically-driven covariates? Researchers are encouraged to pursue these questions and any others that support employment for the many disabled people who seek it.

**Table 1.** *Weighted percent of adult respondents working and number of hours worked by employed respondents in National Health Interview Survey, 2008-2012 (N=4,169)*

Predictor	Respondent working or seeking work %	Number of hours worked by employed respondents <i>M</i>
<b>Disability type</b>		
Non-NHIS disability ( <i>n</i> = 814)	59.69	42.17
Ambulatory/ADL disability ( <i>n</i> = 2,100)	57.76	41.93
Cognitive disability ( <i>n</i> = 1,641)	57.13	41.25
Sensory disability ( <i>n</i> = 711)	60.01	42.87
<b>Disabled family member</b>		
Child disability ( <i>n</i> = 260)	47.64	44.80
Respondent disability ( <i>n</i> = 3,851)	60.79	41.87
<b>HUD assistance timing</b>		
HUD assistance at time of NHIS ( <i>n</i> = 3,868)	61.30	41.15
HUD assistance after NHIS ( <i>n</i> = 301)	65.73	39.76

*Notes.* NHIS refers to National Health Interview Survey. HUD refers to Housing and Urban Development. Data derived from matched 2008-2012 National Health Interview data and 2008-2014 Housing and Urban Development administrative data. Analyses controlled for respondent age, race, and sex and weighted for oversampling, survey nonresponse, and the use of multiple years of cross-sectional data.

**Table 2.** Weighted likelihood of adult respondents working and number of hours worked by employed respondents by disability type, disabled family member, and HUD assistance timing, 2008-2012 (N=4,169)

Predictor	Respondent working or seeking work <i>OR [CI]</i>	Number of hours worked by employed respondents <i>B (SE)</i>
<b>Disability type</b>		
Ambulatory/ADL disability ( <i>n</i> = 2,100)	>999.99 [>999.99, >999.99]	0.72 (0.75)
Cognitive disability ( <i>n</i> = 1641)	<.001 [<.001, <.001]	-0.20 (0.73)
Sensory disability ( <i>n</i> = 711)	<.001 [<.001, <.001]	2.26 (0.94)**
<b>Disabled family member</b>		
Child disability ( <i>n</i> = 260)	>999.99 [641.41, >999.99]	2.68 (5.41)
Respondent disability ( <i>n</i> = 3,851)	—	—
<b>HUD assistance timing</b>		
HUD assistance at time of NHIS ( <i>n</i> = 3,868)	<.001 [<.001, <.001]	0.56 (1.23)

*Notes.* \*\* indicates significance at  $p < .01$ . NHIS refers to National Health Interview Survey. HUD refers to Housing and Urban Development. Data derived from matched 2008-2012 National Health Interview data and 2008-2014 Housing and Urban Development administrative data. Analyses controlled for respondent age, race, and sex and weighted for oversampling, survey nonresponse, and the use of multiple years of cross-sectional data. Estimates for respondent disability unavailable due to linear relationship with regression intercepts.

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