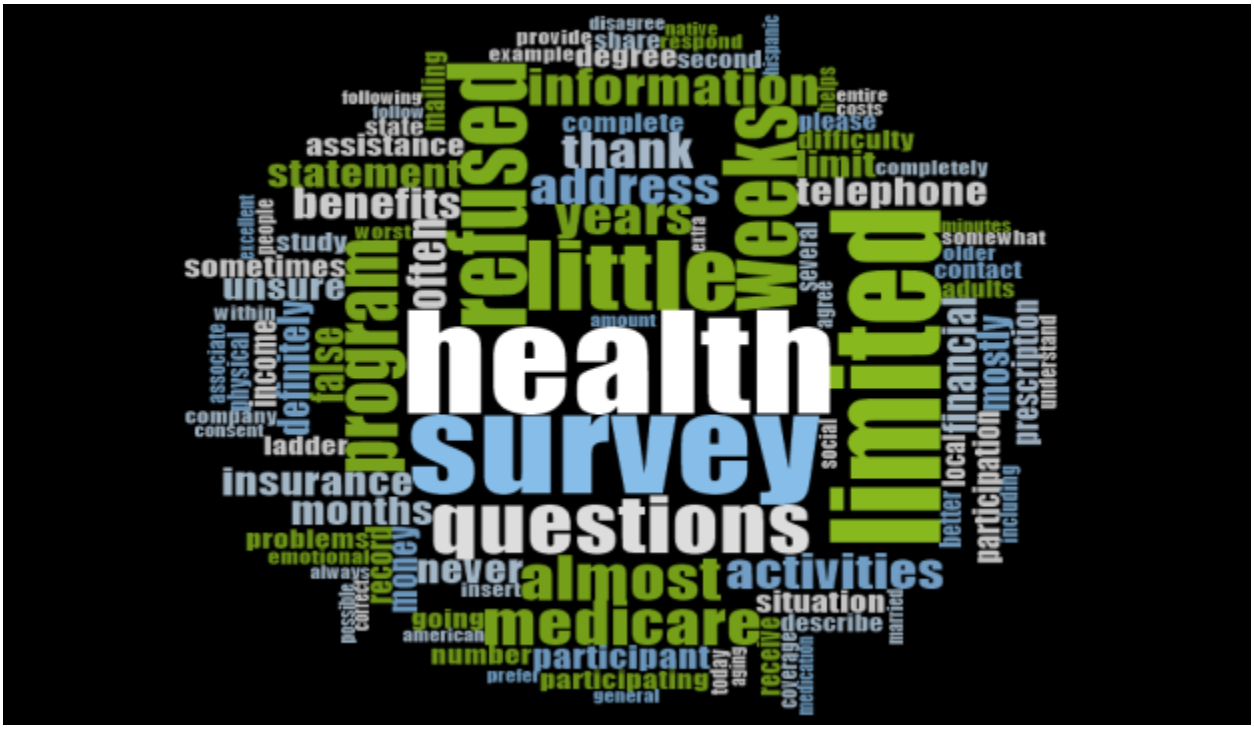
The Effects of Public Benefits Enrollment on Older Adults' Wellbeing



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Introduction[1]

Traditionally, older adults have had lower participation rates in public benefit programs compared to other age groups. Nationally, participation rates have ranged from less than 20 percent for some Medicare Savings Programs to more than 50 percent for Medicaid, with the Supplemental Nutritional Assistance Program (SNAP) somewhere in between (Summer, 2009). Benefits provide resources and supports to older adults in need would therefore be expected to improve the wellbeing and quality of life of older adults.

For this study, wellbeing is defined as quality of life which includes physical, psychological, and social aspects of functioning.

Some advantages of participating in benefit programs are relatively well-known. Evidence exists on how benefit programs such as SNAP reduce food insecurity (Bitler, 2014) and depression (Leung et al., 2015). However, the effect of benefits on other wellbeing outcomes, such as psychological functioning, emotional wellbeing, and levels of financial stress, are relatively understudied. To better understand the effects of participation in benefits programs, the National Council on Aging (NCOA) partnered with Social Policy Research Associates (SPR) to design and conduct a research study aimed at understanding how enrolling in public benefit programs affects older adults' wellbeing.

Because emotional and financial wellbeing are difficult to measure from existing administrative data and surveys, this exploratory study used an ad-hoc survey to measure these outcomes. Baseline and follow-up surveys of older adults who enrolled in one of six benefit programs (SNAP, Medicare, Medicare Savings Programs-MSP, Low Income Subsidy-LIS, Medicaid, and Low Income Home Energy Assistance Program-LIHEAP) sought to capture changes in wellbeing from the moment of applying for one of these benefit programs and about six months later. We utilized quasi-experimental methods that allowed us to estimate the effect of participating in more benefit programs on wellbeing compared to experiencing no changes in the number of benefits received.

We begin with a description of study methodology, followed by sections that provide snapshots of study participant characteristics and program enrollment. After describing the quasi-experimental methodology used to estimate the effects of benefit program enrollment, the report summarizes the main findings, organized in three main categories: food insecurity; financial wellbeing; and social, emotional, and physical wellbeing.

[1] This research was supported in part by grant 90MINC0002-01-01 from the U.S. Administration for Community Living, Department of Health and Human Services. Points of view or opinions do not necessarily represent official ACL policy.

Study Methods

SPR recruited study participants from the clients served by a select number of Benefits Enrollment Centers (BECs), a network of nonprofit and public organizations that NCOA has funded since 2009 through the NCOA's role in administering the National Center for Benefits Outreach and Enrollment. The Center is supported with funding from the Medicare Improvements for Patients and Providers Act (MIPPA) that was awarded to NCOA by the U.S. Department of Health and Human Services' Administration for Community Living (ACL). Selecting participants from clients served by BECs provided the study team access to older adults who were highly motivated to seek assistance from a benefit program and were more likely to qualify for benefit programs, compared to a random sample. Seven BECs, which are listed in Exhibit 1, participated in recruitment. These BECs served diverse populations from the perspective of both race/ethnicity and geographic area. The criteria that were used for inclusion in the study were age (60 and above) and being proficient in English.[2]

Exhibit 1: BEC Recruitment Sites

BEC Organization Name	Location
Adelante	Albuquerque, New Mexico
Live ON-NY	New York, New York
Legal aid of the bluegrass	Covington, Kentucky
Elder Law of Michigan	Lansing, Michigan
Catholic Charities Archdiocese of New Orleans	New Orleans, Louisiana
Feeding the Gulf Coast	Theodore, Alabama
Age Smart IL	O'Fallon, Illinois

We designed a baseline and follow-up survey of older adults who received assistance to enroll in one of the six benefit programs. The aim of the survey instruments was to capture differences in outcomes between the moment of applying for one of these benefit programs and a later point in time that would be similar across study participants. The surveys included basic demographic items, questions about current benefits, and several scales measuring psychological, social, physical, and financial wellbeing based on previously validated measures. Exhibit 2 provides an overview of the indicators included in the survey. Appendix B provides the full survey instrument.

[2] Restricting participation to English speakers was necessary because the measures used for the survey were only available in English.

Exhibit 2: Survey Components

Survey Component	Indicator
Sociodemographic Characteristics	Age, gender, race, ethnicity, education, employment status, relationship status
Public Benefits Receipt and Food Security[3]	Questions about benefit enrollment for the core benefits; food security
Consumer Financial Protections Bureau (CFPB) Financial Well-Being Scale[4]	Financial Wellbeing (the team selected nine of ten items to analyze)
Medical Outcomes Study Questionnaire Short Form 36 Health Survey (SF-36)[5]	Eight subscales, from which the team selected: • Emotional wellbeing • Social functioning • General health

Staff from the participating BECs informed their clients about the research study after they provided benefit application assistance. Clients were given the choice to participate in the research study. BECs then provided the study team with contact information for clients who had consented to participating in the study. Potential survey respondents were asked to complete a survey at two different times—once before they were expected to receive benefits and six months after the completion of the first survey. The baseline data collection took place between September 26, 2019 and February 24, 2020, and follow-up data collection took place between April 2, 2020 and August 26, 2020.

The survey team employed a mixed-mode approach that combined telephone and mailed surveys to increase response rates. The team attempted to contact participants three times over the telephone. If these attempts were unsuccessful, the team mailed a up to two paper surveys with a self-addressed stamped envelope. In addition, reminder letters or postcards were mailed to all non-respondents. During the follow-up period—which occurred in the midst of the COVID-19 pandemic—we also utilized a telephone service to text participants notifying them that the

[3] United States Census Bureau (2018)

[4] Consumer Financial Protection Bureau (2017)

[5] Ware Jr. & Sherbourne (1992)

survey team would be contacting them regarding the survey. Participants received gift cards to thank them for participating in the baseline and follow-up surveys ($15 and $20 respectively).

As shown in Exhibit 3, 70 percent of the individuals from the original sampling frame responded to the baseline survey and 71 percent of baseline respondents responded to the follow-up survey. The response rates represent the number of program participants who completed or partially completed the survey divided by the number of respondents that the study team attempted to contact minus those contacts considered invalid (those who were deceased or those who did not have a valid phone number and no mailing address).[6]

Exhibit 3: Survey Response Rates

	Baseline	Follow-up
Eligible program participants	428	295[7]
Completed surveys	299	209
Response rate	70%	71%

Source: NCOA Wellbeing Survey, 2020

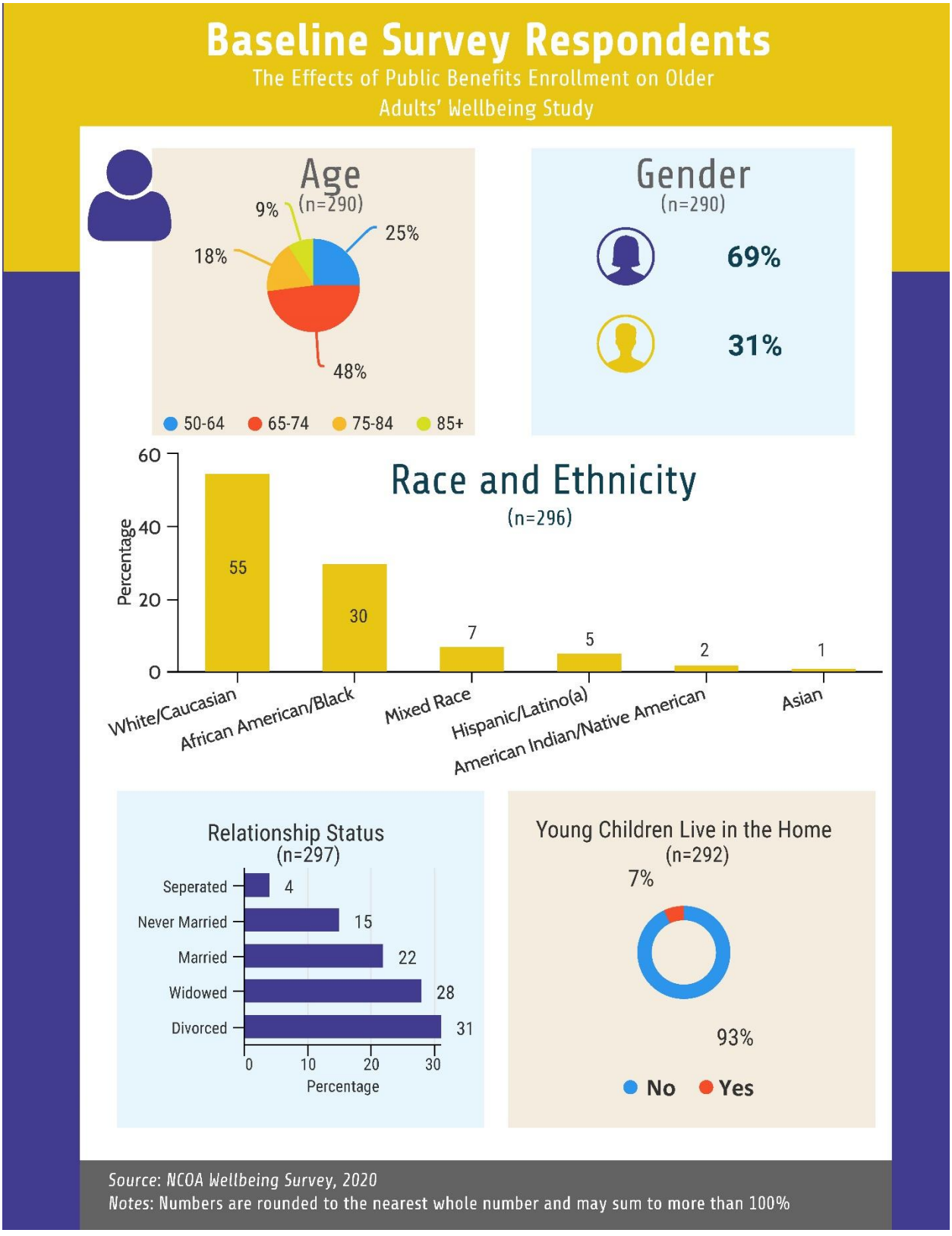
Study Participants

As shown in Exhibit 4, more than two-thirds of the baseline survey participants were women, and almost half of the participants were aged 65 to 74. More than half of the survey respondents identified as being White/Caucasian; about a third identified as Black/African American and seven percent identified as being of mixed race. More than half of the respondents were widowed, divorced, or separated, and almost all said they had children living in their household.

[6] T-tests of equality of means between sociodemographic characteristics of the baseline and follow-up samples were statistically insignificant. This suggested that no weighting was necessary to compensate for survey nonresponse.

[7] The study team excluded four participants from the follow-up sample due to no longer being able to consent either because the participant passed away or was medically unable to consent.

Exhibit 4


Baseline Survey Respondents
The Effects of Public Benefits Enrollment on Older Adults' Wellbeing Study
Age
(n=290)
9%
25%
18%
48%
50-64
65-74
75-84
85+
Gender
(n=290)
69%
31%
Race and Ethnicity
(n=296)
Percentage
60
40
20
0
55
30
7
5
2
1
White/Caucasian
African American/Black
Mixed Race
Hispanic/Latino(a)
American Indian/Native American
Asian
Relationship Status
(n=297)
Seperated
4
Never Married
15
Married
22
Widowed
28
Divorced
31
0
10
20
30
Percentage
Young Children Live in the Home
(n=292)
7%
93%
No
Yes
Source: NCOA Wellbeing Survey, 2020
Notes: Numbers are rounded to the nearest whole number and may sum to more than 100%

Enrollment in Benefit Programs Across the Survey Waves

The baseline and follow-up surveys included questions about the programs in which survey respondents participated at the time of each survey. Because survey respondents received assistance applying for public benefits at the BECs, the survey team expected to see that most follow-up participants would enroll in one benefit program. As shown in Exhibit 5, despite having received benefit enrollment assistance at the BEC, the participation rate in most NCOA core programs did not substantially increase between the two survey waves. This may be partially attributed to the time elapsed between the period when respondents were assisted by BECs and the time when the survey team first contacted the survey respondents. Specifically, while our study team attempted to contact participants soon after they were recruited by the BEC, contact delays could have meant that participants were already enrolled in programs when the baseline survey was conducted, leading to a smaller-than-expected increase in enrollment at the time of follow-up. Another possible explanation is that because of the COVID-19 pandemic (which overlapped with the administration of the follow-up survey), states may have experienced delays in processing program applications

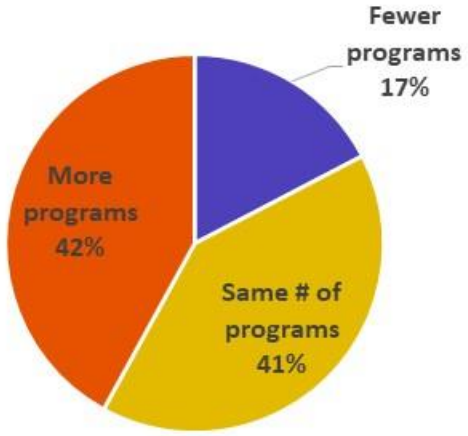
Exhibit 5: Survey Participants' Benefit Enrollment Information

	% Baseline	% Follow-up
Medicare	88	89
Medicare Savings Plan (MSP)	16	28
Medicaid	50	49
LIHEAP	16	18
SNAP	38	62

Source: NCOA Wellbeing Survey, 2020

Another way to analyze the trends in program participation across the two survey waves is to examine the number of programs in which each survey respondent participated at each wave. For each respondent, we calculated the number of core programs in which they participated at baseline and the number of programs in which they were enrolled at the follow-up. Subsequently, we divided the survey sample into three groups: respondents who participated in fewer programs at follow-up compared to baseline; respondents who were enrolled in the same number of programs; and respondents who participated in more programs. Exhibit 6 shows the distribution of respondents from this perspective. Roughly 40 percent of respondents were enrolled in the same number of programs or more programs, respectively, while almost a fifth said they were enrolled in fewer.

Exhibit 6: Change in Number of Programs in Which Enrolled Between Baseline and Follow-Up



Source: NCOA Wellbeing Survey, 2020

Of the respondents who participated in more programs at the time of the follow-up survey, almost half were new to SNAP, a quarter were new to an MSP, and 15 percent or fewer were new to other benefit programs (Exhibit 7). The large proportion of new SNAP entrants among those who were enrolled in more programs at follow-up is not surprising given that overall, it was the only program whose enrollment grew significantly between the two waves (see Exhibit 3). However, it appears that other programs (particularly MSPs) contributed significantly to this growth as well. Exhibit 7 therefore suggests that apart from SNAP, there was significant movement both in and out of programs between the two survey waves—some respondents lost their enrollment in some programs but gained enrollment in others, with the overall proportion of enrollment for each program remaining essentially constant. While recall error could be a potential reason behind this pattern, it could also reflect the burden on program participants that arises from the need to remember complex participation rules and multiple recertification deadlines.

Exhibit 7: Survey Respondents who Were Enrolled in More Programs at follow-up (n=92)

New to SNAP	48%
New to MSP	25%
New to LIS	14%
New to Medicaid	13%
New to LIHEAP	11%
New to Medicare	8%

Source: NCOA Wellbeing Survey, 2020

Analytical Strategy

We used a quasi-experimental approach to estimate the effects of participating in benefit programs (additional details are offered in Appendix A). Quasi-experimental approaches feature a "treatment" group (the group that receives the intervention whose impact is being measured) and a comparison group of individuals who do not receive the intervention. The study participants who participated in more benefit programs at the follow-up survey constitute a *de facto* treatment group, given that this is the situation whose effect we aimed to estimate in the first place. The rest of participants—those who participated in the same number of programs at follow-up, or fewer—can be considered a comparison group and serve as an alternative scenario to estimate what could have happened if some participants did not enroll in more programs.

However, direct comparisons between these two groups are very likely biased measures of impact because there can be differences between the two groups that can distort the comparison. For example, those who are enrolled in more programs might have had different levels of wellbeing at baseline or could have been more likely to have a supportive network to help them with applications (a phenomenon that is often referred to as selection bias). Techniques based on matching were used in this analysis to create a comparison group that was as similar as possible to the treatment group based on observable characteristics (see Appendix A for more details). These techniques ensure that the treatment and comparison groups are comparable at baseline so that the observed differences in wellbeing between these groups are more likely to be due to the "treatment" (i.e., being enrolled in more programs) rather than to differences in the sociodemographic makeup of each group or the baseline level of wellbeing.

Matching-based methods are effective when they can obtain a good level of matching quality (the degree to which the treatment and comparison group resemble one another). In our case, whereas whole-sample estimates based on matching techniques achieved a very good level of matching, subgroup-level estimates did not. To address this issue, we employed difference-in-differences (DiD) methods—a different class of quasi-experimental techniques—to calculate changes in wellbeing. DiD approaches are fundamentally different from matching approaches in that they do not require the two groups to be similar. Rather, DiD compares the pre-post trends in each group. If the rates of change within each group are similar, the evidence to support a causal claim is weak; if, however, the rates are different, this suggests that the "treatment" may have had an impact. Appendix A features additional details about the DiD methodology.

Food Insecurity

While food insecurity is not typically considered a measure of wellbeing, diet insufficiency has been connected to poorer mental and physical health outcomes in the elderly as well as increased strain on caregivers (Fuller-Thompson & Redmond, 2008; Gundersen & Ziliak, 2015). With fewer resources to purchase food, low-income elders without SNAP benefits may forgo medicine for food (Sattler & Lee, 2013) or leave themselves unable to pay utility bills or to secure

safe, stable housing (O'Brien, Wu, & Baer, 2010), which should be expected to influence wellbeing.

We adapted two indicators from the Survey of Income and Program Participation (United States Census Bureau, 2018), which are shown in Exhibit 8. We used the first question as an indicator of food insecurity, and the second as an indicator of very low food security.

Exhibit 8: Food Security Survey Questions

1	In the last 30 days, did you ever cut the size of your meals or skip meals because there wasn't enough money for food?
2	In the last 30 days, did you ever not eat for a whole day because there wasn't enough money for food?

In the baseline survey, more than a third of our respondents were food insecure and about one in ten was very food insecure. These rates of food insecurity were comparable to national estimates of food insecurity for older adults with incomes below the poverty level (see Exhibit 9).

Exhibit 9: Food Insecurity Estimates

Food Security	Baseline Sample	National Estimates-Older Adults in Poverty
Food insecure	36.1%	29.5%
Very low food secure	11.0%	14.2%

Sources: NCOA Wellbeing Survey, 2020; Ziliak & Gundersen (2020)

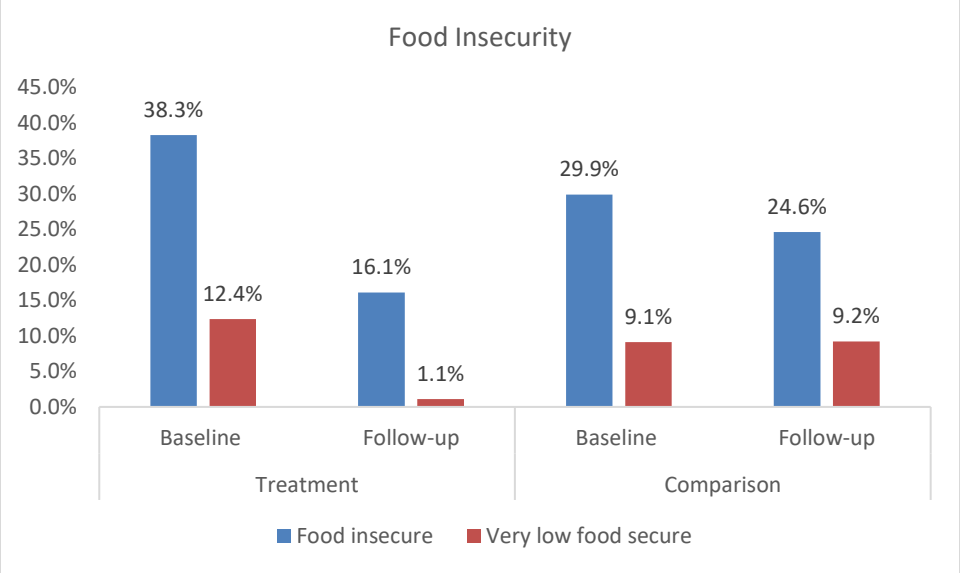
There is already a sizable literature on the effect of SNAP on food insecurity. Calculating reliable estimates is often difficult because much of the research employs simple comparisons between SNAP participants and nonparticipants without controlling for selection bias and because surveys typically underestimate participation in SNAP (Bitler, 2014; Meyer et al., 2018). However, when selection bias is controlled for, research typically finds that SNAP participation has a lowering effect on food insecurity (Ratcliffe et al, 2011; Mabli & Ohls, 2015). By examining the effect of enrollment in multiple programs (not just SNAP) on food insecurity, our study takes a step forward and follows a more recent trend established in the literature (Schmidt et al., 2016).

As described in the Analytical Strategy section above, we used two methods to determine the overall effect of being enrolled in more public assistance programs (compared to same or fewer) on food security. Exhibit 10 describes the impacts calculated using both methods for the overall sample, which are presented graphically for DiD estimates and in a table for all estimates. Estimates are shown both in the natural units of measurement (percentage point reduction) and as percentage change.[8] ***Both estimation methods found statistically significant evidence that receiving more public assistance benefits led to an increase in food security for both indicators***, and the estimates are very similar regardless of the method used. Since, as seen in Exhibit 7, new

[8] For example, a decrease from 30% to 15% can be expressed both as a 15-percentage point reduction and a 50 percent reduction.

enrollment in SNAP accounted for almost half of the increase in benefit program enrollment between the two survey waves, it is likely that new participation in SNAP was the main driver behind these decreases in food insecurity. Indeed, the reductions in food insecurity estimated in this study (14.8 and 16.9 percentage points, respectively) are close to the estimate calculated by Ratcliffe et al (2011), which was 16.2 percentage points but was based on only on SNAP participation. However, because our estimates of impact on very low food security are higher than both Ratcliffe et al (2011) and Mabli & Ohls (2015), it is also likely that individuals who received support (monetary or non-monetary) in addition to SNAP benefits (for example, for prescription medications or energy bills), had more disposable income that could then be used to purchase food. Schmidt et al. (2016) similarly find that enrollment in several safety net programs may help families better cope with occasional shocks that would otherwise lead to more food insecurity.

Exhibit 10: Impact of Program Participation on Food Security, Whole Sample Estimates



	Matching		DiD	
	Impact	**Impact %**	**Impact**	**Impact %**
Food insecurity	-14.8%***	-50.5***	-16.9%**	-44.1**
Very low food security	-11.9%***	-100.0***	-11.3%*	-91.7*

Source: NCOA Wellbeing Survey, 2020
Notes: the numbers in the graph represent predicted probabilities from pooled cross-sectional random effects models that were used to calculate difference-in differences estimates.
* Statistically significant at 90% confidence level; ** Statistically significant at 95% confidence level; *** Statistically significant at 99% confidence level.

Exhibit 11 shows baseline and follow-up estimates of food insecurity by subgroup. Those who participated in more programs at follow-up generally had a higher level of food insecurity at baseline than the comparison group, especially for men, "younger" old (under 65 years), and Black/African American respondents. This suggests a large level of selection bias for these groups

and justifies using quasi-experimental methods to control selection bias. Subgroup-level impacts on food insecurity, also shown in Exhibit 11, suggest that ***although participating in more benefit programs was associated with reductions in food insecurity across the board, men and "older" old (75+) experienced the greatest reductions in food insecurity***.

Exhibit 11: Subgroup-Level Impacts – Food Insecurity

Cut size of meals or skipped meals	Treatment		Comparison		DiD	Impact %
	Baseline	Follow-up	Baseline	Follow-up		
Gender						
Men	37.0%	17.0%	22.9%	26.9%	-24.0%*	-64.8*
Women	38.7%	15.5%	32.8%	24.0%	-14.5%*	-37.5*
Age						
Up to 65 years old	49.3%	24.8%	35.7%	29.0%	-17.8%	-36.0
65-74 years old	38.6%	19.2%	31.9%	27.1%	-14.5%	-37.7
75 years or older	25.0%	0.0%	18.9%	14.0%	-20.1%	-80.2
Race						
White	32.9%	14.7%	31.5%	25.3%	-12.0%	-36.5
Black/African American	56.4%	25.5%	31.3%	16.6%	-16.2%	-28.8

Source: NCOA Wellbeing Survey, 2020
Notes: * Statistically significant at 90% confidence level; ** Statistically significant at 95% confidence level; *** Statistically significant at 99% confidence level

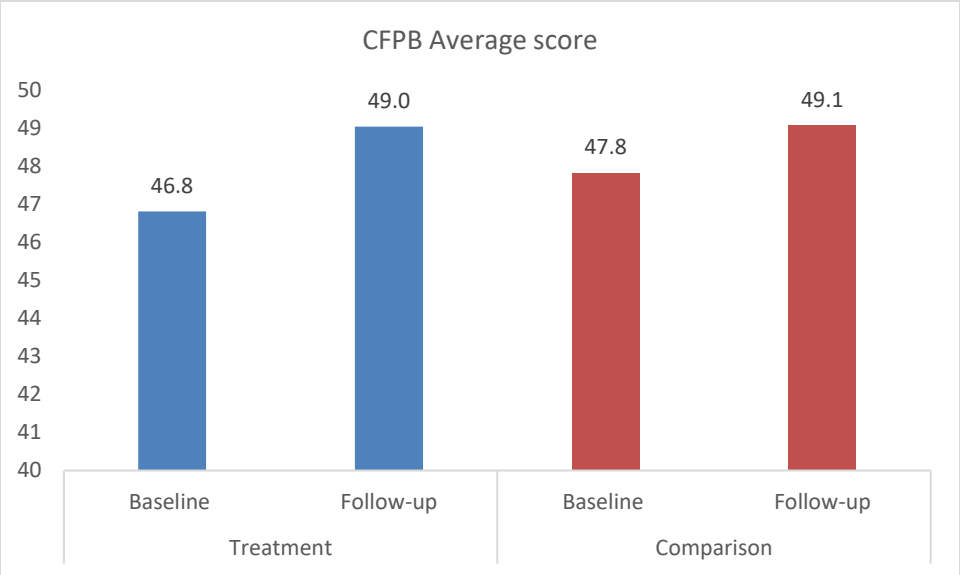
Due to small sample sizes, it was not feasible to estimate any subgroup impacts for very low food security.

Financial Wellbeing

Much of the existing research on the effects of public benefit programs on financial wellbeing comes from the study of Medicaid expansions. Baicker & Finkelstein (2011) used a random-assignment experimental approach in connection to a Medicaid expansion in Oregon and found that Medicaid reduced the likelihood that study participants reported having to borrow money or skip payment on other bills because of medical expenses. The national-level Medicaid expansion brought on by the enactment of the Affordable Care Act generated a series of papers on this topic, most of which utilized a quasi-experimental framework. Kino et al. (2018) found that enrolling in Medicaid reduced the probability of being worried and stressed related to paying the rent or mortgage among people living below 138 percent of the federal poverty level (FPL). Gallagher et al. (2019) find that Medicaid expansion was associated with increased household savings. And Hu et al. (2018) find that Medicaid expansions significantly reduced the number of unpaid bills and the amount of debt sent to third-party collection agencies among those residing in zip codes with the highest share of low-income, uninsured individuals. As in the case of food insecurity, however, past research seldom analyzed the effects of participating in multiple public benefit programs on financial wellbeing. Our study represents a step forward in this regard.

The survey included 9 questions from the Consumer Financial Protection Bureau (CFPB) Financial Well-Being Scale (Consumer Financial Protection Bureau, 2017). Exhibit 12 describes the impacts of participating in more benefit programs on financial wellbeing. Propensity Score Matching (PSM) estimates of impact are close to zero, while DiD estimates are positive but small and not statistically significant. Therefore, ***the evidence that receiving more public assistance benefits led to an increase in financial wellbeing is unconvincing overall***.

Exhibit 12: Impact of Program Participation on Financial Wellbeing, Whole Sample Estimates



	Matching		DiD	
	Impact	**Impact %**	**Impact**	**Impact %**
CFPB Average Score	0.1	0.1	1.0	2.1

Source: NCOA Wellbeing Survey, 2020

Notes: the numbers in the graph represent predicted probabilities from pooled cross-sectional random effects models that were used to calculate difference-in differences estimates.

* Statistically significant at 90% confidence level; ** Statistically significant at 95% confidence level; *** Statistically significant at 99% confidence level.

While we found no statistically significant evidence that participating in more public assistance benefits led to an increase in financial wellbeing in the overall sample, ***we did find evidence that respondents 75 years or older and Black/African American respondents who accessed more benefits increased their financial wellbeing between baseline and follow-up*** (Exhibit 13). Past research has documented differences in access to financial support by race. In a recent study, 71 percent of the white households surveyed reported being able to get $3,000 from family or friends in an emergency, compared to only 43 percent of Black/African American families (Dettling et al., 2017). This difference in access to financial support by race could have been a key factor behind our findings. With less support available from their networks, Black/African American respondents would be more impacted by participation in public benefit programs,

which may have led to a greater sense of financial wellbeing as a result of receiving public benefits.

Past research has shown that older age groups tend to report higher levels of financial wellbeing compared to other age groups (Plagnol, 2011). Our survey findings appear to replicate these findings, with baseline financial wellbeing scores in both groups being much higher for those in the 75 and older group compared to those 65 years of age and below. However, research has also shown that the larger financial satisfaction in older age can be partly explained by decreases in liabilities and increases in financial assets (Plagnol, 2011). Yet, older people with low income have very little accumulated wealth (Hansen et al., 2008). Because most of our respondents were low-income, it was much less likely for them to be able to rely on financial assets. Therefore, it is conceivable that older respondents might have benefitted to a greater extent from participating in more public benefit programs.

Exhibit 13: Subgroup-Level Impacts – Financial Wellbeing

	Treatment		Comparison		DiD	Impact %
CFPB Average Score	**Pre**	**Post**	**Pre**	**Post**		
Gender						
Men	47.4	48.0	47.9	49.1	-0.5	-1.0
Women	46.5	49.5	47.8	49.1	1.7	3.7
Age						
Up to 65 years old	41.8	45.2	43.7	47.3	-0.2	-0.6
65-74 years old	48.5	49.3	48.2	49.3	-0.4	-0.8
75 years or older	49.1	53.5	51.7	50.5	5.6*	11.4*
Race						
White	46.5	48.2	46.9	49.7	-1.2	-2.6
Black/African American	45.1	51.3	50.5	48.8	7.9**	17.5**

Source: NCOA Wellbeing Survey, 2020

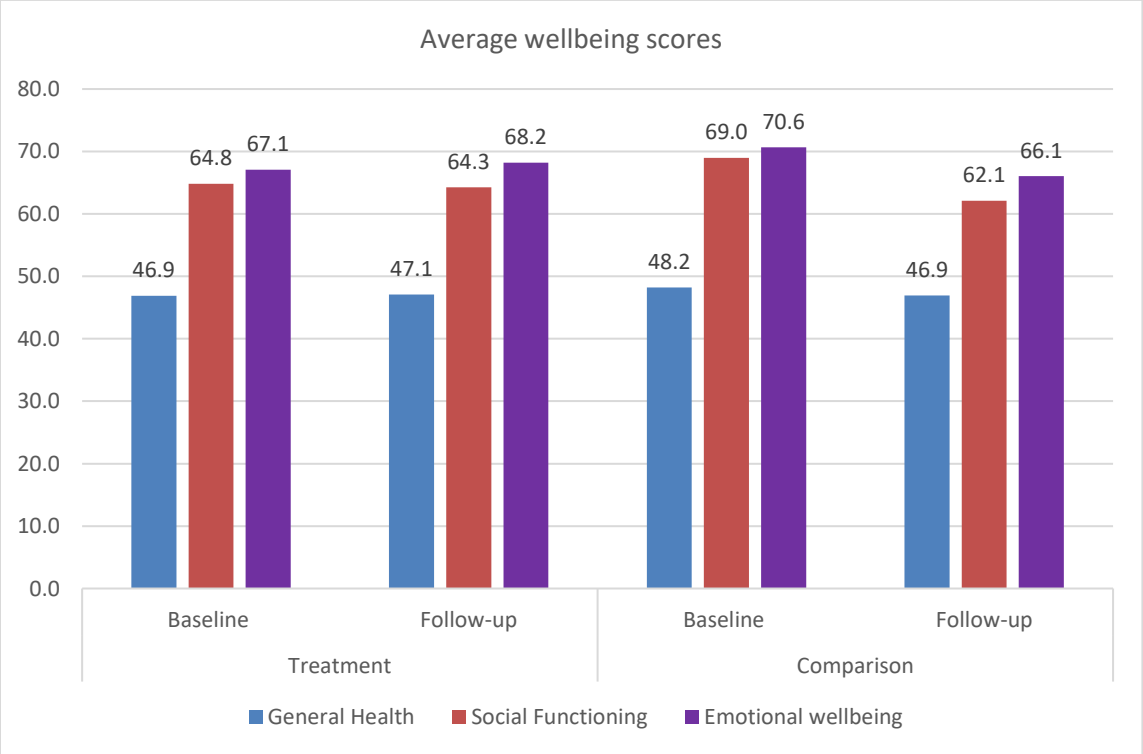
Notes: * Statistically significant at 90% confidence level; ** Statistically significant at 95% confidence level; *** Statistically significant at 99% confidence level.

Social, Emotional, and Physical Wellbeing

Several studies have sought to understand the health effects associated with participating in benefit programs. One study concluded that SNAP participation may have prevented poor physical health resulting from very low food security in a sample of older program participants (Pak & Kim, 2020). Experimental evidence from an expansion of Medicaid in Oregon suggests that being covered by Medicaid improved self-reported health (Baicker & Finkelstein, 2011). Similarly, there are few published research studies about the connection between participating in benefit programs and social and emotional wellbeing. One study found that heads of households participating in SNAP for six months had lower levels of psychological distress than households that had just entered the program (Oddo & Mabli, 2015). Findings from the Oregon experiment cited above suggested that Medicaid enrollees were 30 percent more likely than the uninsured to report that they were “pretty happy” or “very happy”.

For the current study, we utilized the Medical Outcomes Study Questionnaire Short Form 36 (SF-36) Health Survey, a well-known tool that has been shown to achieve adequate reliability and validity in the measurement of several dimensions of wellbeing (Lyons et al., 1994). Among the eight dimensions of wellbeing measured by this tool, we focused on three that we believed would be more closely associated with participating benefit programs: general health, emotional wellbeing, and social functioning. The whole-sample estimates for the effect of being enrolled in more programs are shown In Exhibit 14. Being enrolled in more benefit programs was associated with a small, but statistically insignificant increase in the general health measure. Both the PSM and DiD estimates of impact on emotional wellbeing were positive and statistically significant. In the case of social functioning, both sets of estimates were positive and similar in size, but only the DiD estimate was significant. Overall, the evidence suggests that ***being enrolled in more benefit programs was associated with increases in social and emotional wellbeing, although the increases were smaller in size compared to the increases in food security***.

Exhibit 14: Impact of Program Participation on Physical, Social, and Emotional Wellbeing, Whole Sample Estimates



	Matching		DiD	
	Impact	**Impact %**	**Impact**	**Impact %**
General health	1.7	3.8	1.5	3.1
Social functioning	5.1	8.4	6.3*	9.7*
Emotional wellbeing	4.8*	7.5*	5.7**	8.5**

Source: NCOA Wellbeing Survey, 2020

Notes: the numbers in the graph represent predicted probabilities from pooled cross-sectional random effects models that were used to calculate difference-in differences estimates
* Statistically significant at 90% confidence level; ** Statistically significant at 95% confidence level; *** Statistically significant at 99% confidence level.

Impact estimates by subgroup (Exhibit 15) suggest that ***women, participants aged 65 and over, and Black/African American respondents registered the largest gains in wellbeing associated with being enrolled in more benefit programs***.

Exhibit 15: Subgroup-Level Impacts – Physical, Social, and Emotional Wellbeing

	General Health		Social Functioning		Emotional wellbeing	
	Impact	**Impact %**	**Impact**	**Impact %**	**Impact**	**Impact %**
Gender						
Men	-6.2	-12.6	1.6	2.1	5.0	6.9
Women	4.8*	10.3*	8.3*	13.6*	6.3**	9.7**
Age						
Up to 65 years old	-4.1	-9.9	-7.7	-13.0	-0.8	-1.3
65-74 years old	3.2	6.4	11.9**	17.6**	5.8	8.9
75 years or older	4.3	8.8	10.9	16.3	12.9***	17.2***
Race						
White	-0.4	-0.7	2.3	3.3	0.8	1.2
Black/African American	7.3*	16.1*	12.9*	23.7*	14.0***	21.9***

Source: NCOA Wellbeing Survey, 2020
Notes: * Statistically significant at 90% confidence level; ** Statistically significant at 95% confidence level; *** Statistically significant at 99% confidence level.

Conclusion

This study found promising evidence that participating in a larger number of public benefit programs was associated with large reductions in food insecurity and modest to moderate increases in financial, social-emotional, and physical wellbeing for older participants. More vulnerable groups, such as women, those 75 aged years and older, and Black/African American, appeared to benefit more than other groups. Unlike most studies that focus on the effect of participating in one program at a time, our study examined participation across six benefit programs, allowing us to study the effect of several different programs on wellbeing. In addition, our study used a quasi-experimental approach that controlled for possible selection bias associated with initial wellbeing scores and sociodemographic characteristics, which is expected to result in improved measurement of the effect of program participation on wellbeing.

The study has several limitations, however. Given the nature of sample selection (essentially, a convenience sample drawn from BEC clients), the findings are not readily generalizable nationwide. Although comparisons with national-level data (for example, from the perspective of food insecurity) suggest that our sample was broadly similar to low-income older adults

nationally, the study's findings remain exploratory. Future studies that employ probability sampling could provide more generalizable findings. In addition, the relatively small size of our sample means that the effects of benefit program participation may not have been estimated very precisely. Future studies that feature larger samples would be able to improve the precision of estimates. Further, surveys typically underestimate participation in public benefit programs. To estimate benefit enrollment information more accurately in the future, we recommend using public administrative data in conjunction with survey data.

This study also suggests additional avenues for further research. Although our study was able to detect changes in wellbeing, the exact mechanisms that led to higher levels of wellbeing were not always clear. Qualitative approaches such as in-depth interviews and focus groups, conducted along with surveys, may enrich our knowledge about how participating in benefit program leads to increases in wellbeing. Furthermore, in our study, participants experienced considerable program churn between the baseline and follow-up surveys, with many gaining participation in some programs but losing it in others. Additional survey and qualitative research might help illuminate the reasons behind these fluctuations.

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Appendix A: Analytical Strategy

We employed two quasi-experimental designs (QED) to compare outcomes for study participants who participated in more benefit programs in the follow-up survey compared to the baseline survey to outcomes of a comparison group of similar study participants who did not participate in more programs.

Propensity Score Matching (PSM)

The first step for this design was to estimate a logistic regression (Equation (1)) that estimated the probability of being enrolled in more benefit programs in the follow-up survey:

$$logit(T_i) = \beta_0 + \beta_1 X_i + \mu_i \quad (1)$$

where T_i represents the treatment assignment for person *i* and is equal to 1 if the survey respondent was enrolled in more benefit programs at the follow-up survey; X_i is a vector of individual characteristics, which include sociodemographic characteristics (age, gender, race/ethnicity, highest level of education, and relationship status) and the baseline wellbeing score (specific for each outcome estimated); and μ_i is an individual-level error term that captures unobserved variation across individuals. The predicted values from this model for each study participant are known as treatment probabilities (i.e., propensities) and they can vary between 0 and 1.

We used `teffects ipw`, a Stata 16 procedure that estimates treatment effects from observational data using inverse propensity-score weighting (IPW). This procedure creates inverse-probability weights—which are the inverse of propensities calculated as shown in the preceding paragraph—and applies these weights to compute weighted averages of each outcome (i.e., wellbeing scores at the follow-up survey) separately for the treatment and the comparison groups. The difference between these weighted averages represents the average treatment effect (ATE), or the impact.

Difference in differences (DiD)

The DiD design assumes that for survey respondents who were enrolled in more programs at the follow-up survey, wellbeing outcomes would be the same as at baseline. An ascending or descending trend suggests that participating in more programs may have had an effect on wellbeing. This estimate may be biased, however, if other factors that also influence wellbeing (such as the COVID-19 pandemic) changed between the two survey waves. To help ensure that the estimated effect reflects the impact of being on more programs, and is not biased by any confounding event, DiD models add a comparison group (in our case, survey respondents who did not enroll in more programs at the follow-up survey) to control for such potentially confounding events. The model still calculates how the follow-up outcome deviates from the baseline outcome, but it does this separately for the group wo participated in ore programs (the

treatment group) and for the group who did not (the comparison group). The model calculates the estimated intervention effect by subtracting the comparison group pre-post difference from the treatment group pre-post difference (hence, the term "difference in differences"). The underlying assumption of a DiD model is that any confounding event (such as the onslaught of the COVID pandemic) would affect the treatment and comparison groups similarly. Under that assumption, subtracting the comparison group deviation from the treatment group deviation removes the effect of the confounding event.

To conduct the DiD analysis, we employed multivariate regression models that estimate wellbeing outcomes, which are modeled as a function of accessing more benefit programs controlling for individual sociodemographic characteristics.

Variants of the following model were estimated:

$$Y=\beta_0 + \beta_1 POST + \beta_2 \mathrm{T} + \beta_3 \mathrm{T}*POST + \beta_4 X + e \qquad (2)$$

where "Y" represents outcomes of interest; "T" is the treatment assignment and is equal to 1 if the survey respondent was enrolled in more benefit programs at the follow-up survey; "POST" is a dummy variable which is 0 if the observation comes from the baseline survey and 1 if it comes from the follow-up survey; "X" represents individual-level covariates (age, gender, race/ethnicity); and "e" is an error term. The coefficient of interest is "β_3," which represents the interaction term between the treatment dummy and the time dummy and is mathematically equivalent to the DiD estimator.

Appendix B: Survey Instrument

Demographic items

Let's begin by talking a little bit about you.

[NOTE FOR THE FOLLOW UP INTERVIEW ONLY QUESTIONS 7, 8, AND 9 OF THIS SECTION WILL BE USED]

1. What is your age in years?
2. What is your sex? ***[SKIP QUESTIONS 1 THROUGH 9 DURING FOLLOW-UP SURVEY]***

   ○ Male

   ○ Female

   ○ DON'T KNOW

   ○ REFUSED

3. Are you Hispanic or Latino?

   ○ YES, Hispanic or Latino

   ○ NO, Not Hispanic or Latino

   ○ DON'T KNOW

   ○ REFUSED

4. What is your race? You may choose one or more races. For this survey, Hispanic origin is not a race. Are you American Indian or Alaska Native; Asian; Black or African American; Native Hawaiian or Other Pacific Islander; or White?

	YES	NO	DON'T KNOW	REFUSED
AMERICAN INDIAN OR ALASKA NATIVE	○	○	○	○
ASIAN	○	○	○	○
BLACK OR AFRICAN AMERICAN	○	○	○	○
NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER	○	○	○	○
WHITE	○	○	○	○

5. Are you married, widowed, divorced, separated or never married?
    - ○ MARRIED
    - ○ WIDOWED
    - ○ DIVORCED
    - ○ SEPARATED
    - ○ NEVER MARRIED
    - ○ DON'T KNOW
    - ○ REFUSED
6. What is the highest level of school you have completed or the highest degree you have received?
    - ○ 12TH GRADE OR LESS – NO DIPLOMA
    - ○ HIGH SCHOOL EQUIVALENT SUCH AS GED
    - ○ HIGH SCHOOL DIPLOMA
    - ○ SOME COLLEGE BUT NO DEGREE
    - ○ ASSOCIATE DEGREE IN COLLEGE - OCCUPATIONAL/VOCATIONAL PROGRAM (FOR EXAMPLE, AN ASSOCIATE OF APPLIED SCIENCE, SUCH AS ACCOUNTING, BUSINESS ADMINISTRATION, NURSING, WEB DESIGN, OR PARALEGAL STUDIES)
    - ○ ASSOCIATE DEGREE IN COLLEGE - ACADEMIC PROGRAM (SUCH AS ASSOCIATE OF ARTS OR ASSOCIATE OF SCIENCE)
    - ○ BACHELOR'S DEGREE (E.G., BA, AB, BS)
    - ○ MASTER'S DEGREE (E.G., MA, MS, MBA); PROFESSIONAL SCHOOL DEGREE (E.G., MD, DDS, JD); OR DOCTORATE DEGREE (E.G., PHD, EDD)
    - ○ DON'T KNOW
    - ○ REFUSED
7. Do you have any children under the age of 18 living in your home with you?
    - ○ Yes
    - ○ No
    - ○ DON'T KNOW
    - ○ REFUSED

    ➔ Skip to q9 if No, DK, Refused

8. Are you currently responsible for most of the basic needs of the children living in your home?
    - ○ Yes
    - ○ No
    - ○ DON'T KNOW
9. Last week, did you do any work for pay, even if only for 1 hour?
    - ○ Yes
    - ○ No
    - ○ DON'T KNOW
    - ○ REFUSED

Benefits

The next set of questions ask about public benefits you may have received in the past or are currently receiving. As well as the experiences of your household.

Health Insurance and Prescription Medication[9]

1. Are you covered by any kind of health insurance or some other kind of health care plan?
    - ○ Yes
    - ○ No
    - ○ DON'T KNOW
    - ○ REFUSED

    ➔ *Skip to q3 in this section if no, DK, or refused*

2. Do you have health insurance or health care coverage, yes or no, or are you unsure? I will describe several different health insurance programs and you can tell if whether you have one.
    - ○ a. Private health insurance, which includes coverage not offered by the state or federal government, often offered through an employer or insurance company. Do you have private health insurance, yes or no, or are you unsure?

[9] Questions with an asterisk were taken from the National Health Interview Survey (NHIS)

- ○ b. Medicare, or **[insert state name for Medicare]**is a federal health insurance program for people who are 65 years or older and people with disabilities. Do you have Medicare, yes or no, or are you unsure?
- ○ c. Medicare Savings Plan is a program that pays for your Medicare Part B premium. In some cases, this program will also help you pay for some of your other Medicare costs. You can take part in this program if you are enrolled in or meet the program requirements for Medicare and have limited income. For example, Medicare Savings Programs includes, Qualified Medicare Beneficiary (QMB) and Specified Low-Income Medicare Beneficiary (SLMB). Do you have a Medicare Savings Plan, yes or no, or are you unsure?
- ○ d. Medigap is extra insurance you purchase to help cover the costs of insurance that Medicare might not pay. Do you have Medigap, yes or no, or are you unsure?
- ○ e. Medicaid, **[insert state name for Medicaid]** is a state and federal health insurance program for people who are low-income. Do you have Medicaid, yes or no, or are you unsure?
- ○ f. Do you have military related health care, such as TRICARE (CHAMPUS) / VA health care or CHAMPVA , yes or no, or are you unsure?
- ○ g. Do you have Indian Health Service care, yes or now, or are you unsure?
- ○ h. Do you have health care coverage of any type that I didn't already describe? Yes or no, or are you unsure?

  [IF YES], What is the name of the other health care coverage?

  _____

3. Are you enrolled in a Medicare Savings Program?
   - ○ Yes
   - ○ No
   - ○ DON'T KNOW
   - ○ REFUSED

4. Do you receive support to help pay for prescription drugs, such as, Extra Help, or Low Income Subsidy (LIS) Part D assistance? *This program can provide help with the cost of prescription medicines if you qualify for Medicare Part D and have limited income and resources. Medicare Part D or Medicare Prescription Drug Coverage is a program that pays for some, but not all, of your prescription drug costs. If you have or can enroll in Medicare Part D and have limited income and resources, you may be able to get "Extra Help" from this program.*
   - ○ Yes

- ○ No
- ○ DON'T KNOW
- ○ REFUSED

5. About how long has it been since you last saw a doctor or other health professional for a wellness visit, physical, or general purpose check-up?* Do not include dental care.

   * Read if necessary: This kind of visit typically includes: blood pressure, cholesterol, and blood sugar checks, height and weight measurements, and vaccinations. The doctor or other health professional may also discuss topics related to your health such as smoking, alcohol use, diet and exercise. These visits are usually scheduled in advance and occur when you are not sick or injured.

   * Read if necessary: If a wellness exam was combined with a sick care visit, include this visit.

   - ○ NEVER
   - ○ WITHIN THE PAST YEAR (ANYTIME LESS THAN 12 MONTHS AGO)
   - ○ WITHIN THE LAST 2 YEARS (1 YEAR BUT LESS THAN 2 YEARS AGO)
   - ○ WITHIN THE LAST 3 YEARS (2 YEARS BUT LESS THAN 3 YEARS AGO)
   - ○ WITHIN THE LAST 5 YEARS (3 YEARS BUT LESS THAN 5 YEARS AGO)
   - ○ WITHIN THE LAST 10 YEARS (5 YEARS BUT LESS THAN 10 YEARS AGO)
   - ○ 10 YEARS AGO OR MORE
   - ○ DON'T KNOW
   - ○ REFUSED

6. During the past 12 months, was there any time when you needed medical care, but DID NOT GET IT because of the cost?*
   - ○ Yes
   - ○ No
   - ○ DON'T KNOW
   - ○ REFUSED

7. At any time in the PAST 12 MONTHS, did you take prescription medication?
   - ○ Yes
   - ○ No
   - ○ DON'T KNOW
   - ○ REFUSED

8. During the past 12 months, were any of the following true for you?*

	Yes	No	Don't Know	Refused
You took less medication to save money.				
You DELAYED filling a prescription to save money				
you needed prescription medication, but DID NOT GET IT because of the cost?				

LIHEAP

9. Do you receive assistance paying your utilities, such as your electric, gas, or water bill, yes or no, or are you unsure? Assistance can be from government programs such as Low Income Home Energy Assistance Program, which is an annual grant used to help met your heating and cooling costs or through local agencies, such as Salvation Army or through your local church.
   - ○ Yes
   - ○ No
   - ○ DON'T KNOW
   - ○ REFUSED

10. Have you ever received energy assistance in the past?
    - ○ Yes
    - ○ No
    - ○ DON'T KNOW
    - ○ REFUSED

SNAP

11. Are you currently receiving any **[insert name of local SNAP program]** or food stamps benefits? *This program helps you and your family buy food needed for good health. If you meet the program guidelines, including limited income and resources, you will get a special debit card (called an EBT Card). This debit card comes with a certain amount of money already on it to pay for food.*
    - ○ Yes
    - ○ No
    - ○ DON'T KNOW
    - ○ REFUSED

12. Have you ever received [**insert name of local SNAP program**] or food stamps in the past?
    - ○ Yes
    - ○ No
    - ○ DON'T KNOW
    - ○ REFUSED

13. In the last 30 days, did you ever cut the size of your meals or skip meals because there wasn't enough money for food?*
    - ○ Yes
    - ○ No
    - ○ DON'T KNOW
    - ○ REFUSED

    ➔ If no, DK, or refused skip to q15

14. In the last 30 days, how many days did this happen?*

15. In the last 30 days, were you ever hungry but didn't eat because there wasn't enough money for food?*
    - ○ Yes
    - ○ No
    - ○ DON'T KNOW
    - ○ REFUSED

16. In the last 30 days, did you ever not eat for a whole day because there wasn't enough money for food?*
    - ○ Yes
    - ○ No
    - ○ DON'T KNOW
    - ○ REFUSED

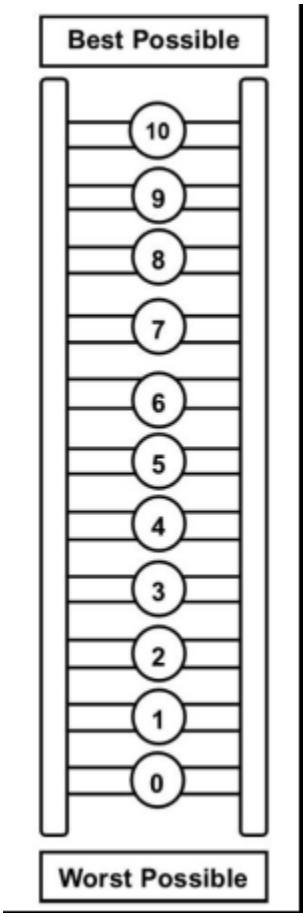
    ➔ If no, DK, or refused go to next section

17. In the last 30 days, how many days did this happen?*
    a. In the last 30 days, how many days did this happen?*

Adult Well-Being Assessment

Thank you for that information. It's very helpful in understanding the experiences of older adults. Now I will ask you questions about your well-being generally.

*For the next four questions please imagine a ladder with steps numbered from zero at the bottom to ten at the top. The top of the ladder represents the **best possible life for you** and the bottom of the ladder represents the **worst possible life for you.***



1. Indicate where on the ladder you feel you personally stand right now with 0 being the worst and 10 being the best.
2. On which step do you think you will stand about TWO years from now, with 0 being the worst and 10 being the best.
3. Now imagine the top of the ladder represents the best possible *financial situation* for you, and the bottom of the ladder represents the worst possible *financial situation* for you. Please indicate where on the ladder you stand right now, with 0 being the worst and 10 being the best.
4. In general, how would you rate your physical health, would you say, poor, fair, good, very good, or excellent?

5. In general, how would you rate your mental health, including your mood and your ability to think, would you say poor, fair, good, very good, or excellent?

6. How often do you get the social and emotional support you need, would you say never, rarely, sometimes, usually, or always?

7. How strongly do you agree with this statement? “I lead a purposeful and meaningful life.” Would you say that you strongly disagree, disagree, slightly disagree, neither agree nor disagree, slightly agree, agree, or strongly agree?

8. How often do you feel lonely or isolated from those around you? Would you say always, often, sometimes, rarely, or never?

Depression

8-item version of the Center of Epidemiological Studies-Depression Scale

Now I am going to ask you questions about how you sometimes feel. I am going to read a statement and you will respond with how often the statement occurred in the past week. You can say it happened none or almost none of the time, some of the time, or all or almost all of the time. Does that make sense?

1. How much of the time during the past week did you feel depressed, would you say none or almost none of the time, some of the time, or almost all of the time?

2. How much of the time during the past week did you feel everything you did was an effort, would you say none or almost none of the time, some of the time, or all or almost all of the time?

3. How much of the time during the past week was your sleep restless, would you say none or almost none of the time, some of the time, or almost all of the time?

4. How much of the time during the past week were you happy, would you say none or almost none of the time, some of the time, or almost all of the time?

5. How much of the time during the past week did you feel lonely, would you say none or almost none of the time, some of the time, or almost all of the time?

6. How much of the time during the past week did you enjoy life, would you say none or almost none of the time, some of the time, or almost all of the time?

7. How much of the time during the past week did you feel sad, would you say none or almost none of the time, some of the time, or almost all of the time?

8. How much of the time during the past week were you unable to get going, would you say none or almost none of the time, some of the time, or almost all of the time?

Financial Well-being

Consumer Financial Protections Bureau (CFPB) Financial well-being scale

You are doing great; we are about halfway through the survey. Next, I am going to ask several questions about your financial situation. For these questions I am going to read a statement and ask you to describe how much the statement describes you or your situation.

1. Because of my money situation, I feel like I will never have the things I want in life. How well does this statement describe you or your situation, would you say not at all, very little, somewhat, very well, or completely

2. I am just getting by financially. How well does this statement describe you or your situation, would you say not at all, very little, somewhat, very well, or completely?

3. I am concerned that the money I have or will save won't last. How well does this statement describe you or your situation, would you say not at all, very little, somewhat, very well, or completely?

For the next two questions, I am going to read a statement and ask how often it applies to you or your household.

4. I have money left over at the end of the month. How often does this statement apply to you, would you say never, rarely, sometimes, often, or always?

5. My finances control my life. How often does this statement apply to you, would you say never, rarely, sometimes, often, or always?

Financial Measures by R. Tucker-Seeley

Material hardship

6. During the past 12 months, how much difficulty have you had paying your bills, would you say you had no difficulty at all, a little difficulty, some difficulty, quite a bit of difficulty, or a great deal of difficulty?

Financial worry

7. Thinking back over the past 30 days, how often have you had financial problems interfere with your work or your daily routine? Would you say never, hardly ever, sometimes, nearly all the time, or all the time?

8. Thinking back over the past 30 days, how often have you worried about financial matters? Would you say never, hardly ever, sometimes, nearly all the time, or all the time?

9. Thinking back over the past 30 days, how often have you had financial problems interfere with your relationships with other people? Would you say never, hardly ever, sometimes, nearly all the time, or all the time?

Questions about utilities

13. In the last 12 months, did your household not pay the full amount of the gas, oil, or electricity bills? Yes, no, don't know, refused[10]
14. In the last 12 months, did the gas or electric company turn off service, or the oil company did not deliver oil? Yes, no, don't know, refused

Medical Outcomes Study Questionnaire Short Form 36 Health Survey (SF-36)

We only have one more section.

The next questions ask for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities.

1. In general, would you say your health is poor, fair, good, very good, or excellent?
2. Compared to one year ago, would you say that your health is much worse now than one year ago, somewhat worse now than one year ago, about the same, somewhat better now than one year ago, or much better now than one year ago?

The following items are about activities you might do during a typical day. I will provide a list of activities and you will respond with yes—it is limited a lot, yes—it is limited a little, or no—it is not limited at all.

3. Does your health now limit you in **vigorous activities**, such as running, lifting heavy objects, participating in strenuous sports? Would you say yes—it is limited a lot, yes—it is limited a little, or no—it is not limited at all.
4. Does your health now limit you in **moderate activities**, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf? Would you say yes—it is limited a lot, yes—it is limited a little, or no—it is not limited at all.
5. Does your health now limit you in lifting or carrying groceries? Would you say yes—it is limited a lot, yes—it is limited a little, or no—it is not limited at all.
6. Does your health now limit you in Climbing **several** flights of stairs? Would you say yes—it is limited a lot, yes—it is limited a little, or no—it is not limited at all.
7. Does your health now limit you in Climbing **one** flight of stairs? Would you say yes—it is limited a lot, yes—it is limited a little, or no—it is not limited at all.

[10] These last 2 questions are to capture information on utilities and have been added to this section

8. Does your health now limit you in Bending, kneeling, or stooping? Would you say yes—it is limited a lot, yes—it is limited a little, or no—it is not limited at all.
9. Does your health now limit you in Walking more than a mile? Would you say yes—it is limited a lot, yes—it is limited a little, or no—it is not limited at all.
10. Does your health now limit you in Walking several blocks? Would you say yes—it is limited a lot, yes—it is limited a little, or no—it is not limited at all.
11. Does your health now limit you in Walking one block? Would you say yes—it is limited a lot, yes—it is limited a little, or no—it is not limited at all.
12. Does your health now limit you in Bathing or dressing yourself? Would you say yes—it is limited a lot, yes—it is limited a little, or no—it is not limited at all.

Next I would like to know whether during the **past 4 weeks**, have you had any of the following problems with your work or other regular daily activities **as a result of your physical health.** *I'll ask several questions about your physical health in the last four weeks and you can respond with yes or no.*

13. During the **past 4 weeks**, have you cut down the amount of time you spent on work or other activities, yes or no?
14. During the **past 4 weeks**, have you **accomplished less** than you would like, yes or no?
15. During the **past 4 weeks**, Were you limited in the **kind** of work or other activities, yes or no?
16. During the **past 4 weeks**, have you had **difficulty** performing the work or other activities (for example, it took extra effort), yes or no?

Now I would like to know whether during the **past 4 weeks,** have you had any of the following problems with your work or other regular daily activities **as a result of any emotional problems** (such as feeling depressed or anxious). I'll ask three questions about your emotional health in the last four weeks and you can respond with yes or no.

17. During the **past 4 weeks,** have you cut down the amount of time you spent on work or other activities, yes or no?
18. During the **past 4 weeks,** have you **accomplished less** than you would like, yes or no?
19. During the **past 4 weeks,** did you not do work or other activities as **carefully** as usual yes or no?
20. During the **past 4 weeks**, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups, would you say not at all, slightly, moderately, quite a bit, or extremely?
21. How much bodily pain have you had during the **past 4 weeks**, would you say you've had none, very mild, mild, moderate, severe, or very severe pain?
22. During the **past 4 weeks**, how much did pain interfere with your normal work (including both work outside the home and housework), would you say not at all, a little bit, moderately, quite a bit, or extremely?

The next questions are about how you feel and how things have been with you **during the past 4 weeks**. For each question, please give the one answer that comes closest to the way you have been feeling. You can say none of the time, a little of the time, some of the time, a good bit of the time, most of the time, or all of the time.

23. How much of the time during the **past 4 weeks,** did you feel full of pep? Would you say none of the time, a little of the time, some of the time, a good bit of the time, most of the time, or all of the time?

24. How much of the time during the **past 4 weeks,** have you been a very nervous person? Would you say none of the time, a little of the time, some of the time, a good bit of the time, most of the time, or all of the time?

25. How much of the time during the **past 4 weeks,** have you felt so down in the dumps that nothing could cheer you up? Would you say none of the time, a little of the time, some of the time, a good bit of the time, most of the time, or all of the time?

26. How much of the time during the **past 4 weeks,** have you felt calm and peaceful? Would you say none of the time, a little of the time, some of the time, a good bit of the time, most of the time, or all of the time?

27. How much of the time during the **past 4 weeks,** did you have a lot of energy? Would you say none of the time, a little of the time, some of the time, a good bit of the time, most of the time, or all of the time?

28. How much of the time during the **past 4 weeks,** have you felt downhearted and blue? Would you say none of the time, a little of the time, some of the time, a good bit of the time, most of the time, or all of the time?
    How much of the time during the **past 4 weeks,** did you feel worn out? Would you say none of the time, a little of the time, some of the time, a good bit of the time, most of the time, or all of the time?

29. How much of the time during the **past 4 weeks,** have you been a happy person? Would you say none of the time, a little of the time, some of the time, a good bit of the time, most of the time, or all of the time?
    How much of the time during the **past 4 weeks,** did you feel tired? Would you say none of the time, a little of the time, some of the time, a good bit of the time, most of the time, or all of the time?

30. During the **past 4 weeks**, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)? Would you say none of the time, a little of the time, some of the time, most of the time, or all of the time?

Finally, I am going to read some statements. You will tell me how true or false they are of yourself. You can respond with definitely false, mostly false, don't know, mostly true, or definitely true.

31. I seem to get sick a little easier than other people. Would you say that is definitely false, mostly false, don't know, mostly true, or definitely true of yourself?
32. I am as healthy as anybody I know. Would you say that is definitely false, mostly false, don't know, mostly true, or definitely true of yourself?
33. I expect my health to get worse. Would you say that is definitely false, mostly false, don't know, mostly true, or definitely true of yourself?
34. My health is excellent. Would you say that is definitely false, mostly false, don't know, mostly true, or definitely true of yourself?

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