Cash Transfer Timeliness, Mental Health, and Food Insecurity in Pandemic Times

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Cash Transfers and Mental Health in "Normal" Times

- Cash transfers improve mental health (e.g., Haushofer and Shapiro 2016, others reviewed in McGuire et al 2022)
  - Subjective well-being, depression, anxiety, etc.
  - Both conditional and unconditional transfers
  - Substantial RCT-based evidence

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  - Cash transfers were the most common (87 countries)
  - Majority of programs were new initiatives
  - By Feb 2022: 203 countries with cash transfer policy (Gentilini et al 2022)

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- Little is known about the importance of cash transfer *timing*

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- Factors influencing timeliness of response (Beazley et al 2021)
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  - Availability of existing data
  - Use of electronic payment modalities
  - Availability of mobile phones and internet
  - Poverty negatively correlated with timeliness

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  - Poverty negatively correlated with timeliness
- Difficult question to answer using a cross-country approach

Study Overview

- How does cash transfer timeliness affect mental health?
  - Setting: The Philippines during first year of pandemic
  - Approach: Compare two groups (both received transfers, one group received earlier)
  - Main Result: Depression increased for both groups during pandemic, but increases were smaller for those who received cash transfers earlier

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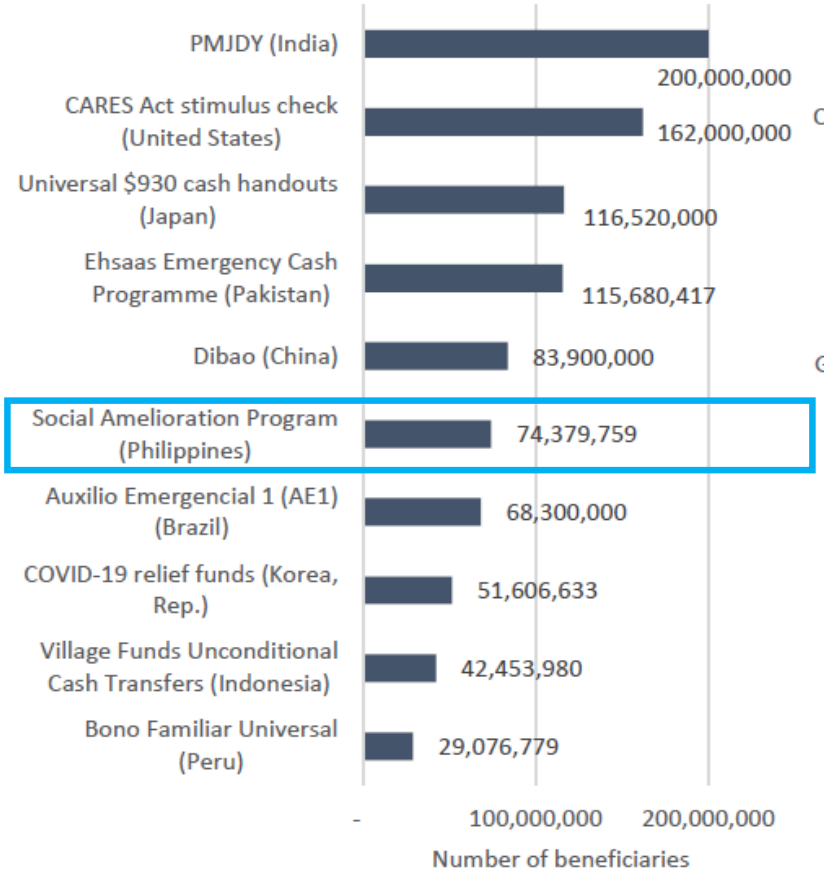
- Social Amelioration Program (SAP)
  - One-time cash transfers to poor and vulnerable households
  - 18 million households, 70% of population
  - Included 4.4 million households already part of government safety net program (Pantawid Pamilyang Pilipino Program – 4Ps)
  - Amounts ranged from PhP 5000 to PhP 8000 (USD 100-160, region-specific), approximately monthly wage of a minimum wage worker

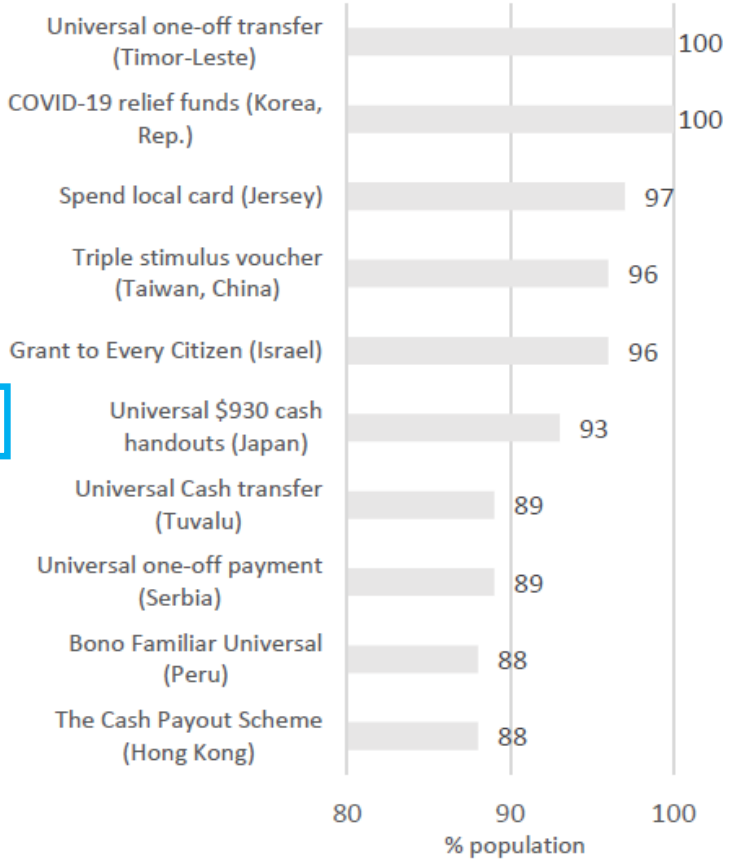
SAP Coverage: Global Comparison

Top 10 Cash Transfer Programs

By number of beneficiaries



By share of population



Source: Gentilini et al (2022)

4Ps program

- National flagship social protection program
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- Family of five that complies with conditions: PhP 1250 per month + PhP 900 (for UCT/rice subsidies)

SAP emergency subsidies

- SAP top-up delivered to 4Ps beneficiaries electronically at the beginning of April 2020
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- Delays in reaching non-4Ps beneficiaries
  - Manual registration via paper application forms
  - Physical delivery of funds (85% at local government unit, 13% Land Bank branch)
  - Median date of delivery (for non-4Ps) in our sample: April 29, 2020
  - Admin records: only 3.6 out of 14 million non-4Ps households received SAP by April 25, 2020

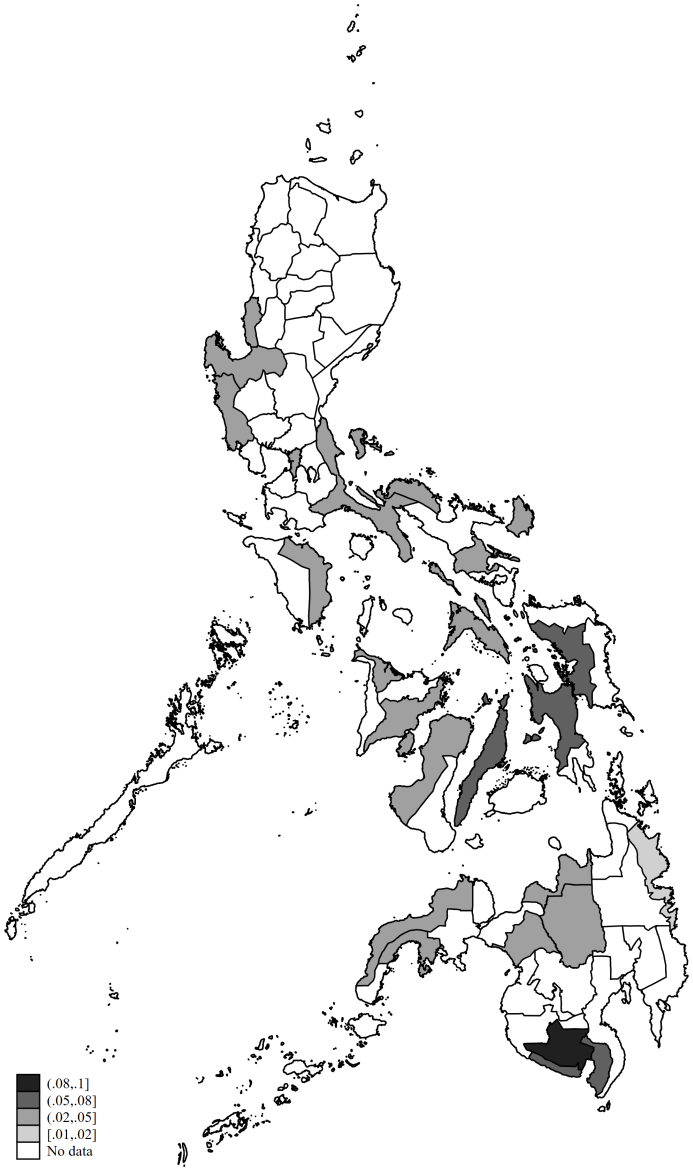
Data Collection

- 4 survey waves: one before and three during pandemic
- Sample of 4Ps and non-4Ps households used for previous impact evaluations of the 4Ps program
  - Poverty scores just below and above the eligibility cutoff
  - Similar characteristics as sample of poor and near-poor households from national survey

Baseline Characteristics by 4Ps status: Demographics

	Non-4Ps	4Ps	Difference
Urban	0.278	0.293	0.015
	(0.449)	(0.456)	(0.043)
Household Size	5.296	5.964	0.668***
	(1.610)	(1.852)	(0.166)
N. Children	2.713	3.099	0.386**
	(1.186)	(1.594)	(0.134)
N. Adults	2.662	2.946	0.284*
	(1.083)	(1.272)	(0.113)
N. Elderly	0.083	0.081	-0.002
	(0.277)	(0.274)	(0.026)
Highest Ed Level: None	0.009	0.009	-0.000
	(0.096)	(0.095)	(0.009)
Highest Ed Level: Primary	0.222	0.243	0.021
	(0.417)	(0.430)	(0.040)
Highest Ed Level: Secondary	0.593	0.586	-0.007
	(0.492)	(0.494)	(0.047)
Highest Ed Level: Tertiary	0.176	0.162	-0.014
	(0.382)	(0.369)	(0.036)
Owns Household Business	0.273	0.311	0.038
	(0.447)	(0.464)	(0.044)
Adult Employment Share	0.581	0.585	0.005
	(0.302)	(0.279)	(0.028)
Weekly Earnings (per capita)	450.477	495.220	44.743
	(404.819)	(490.186)	(42.949)
Owns Farm	0.097	0.072	-0.025
	(0.297)	(0.259)	(0.027)
Access to Farm	0.056	0.140	0.084**
	(0.230)	(0.347)	(0.028)
Number of Mobile Phones (Wave 1)	1.806	1.865	0.059
	(1.239)	(1.315)	(0.122)
Number of Smart Phones (Wave 1)	1.079	1.131	0.052
	(1.169)	(1.239)	(0.115)
PhilHealth Insurance (Wave 1)	0.688	0.829	0.140***
	(0.464)	(0.378)	(0.041)
Has Bank Account (Wave 1)	0.204	0.829	0.625***
	(0.404)	(0.378)	(0.037)
Observations	216	222	438

Geographic Distribution of Sample



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end of Oct. 2020	**Wave 4 (phone).**

Variables

Variable Type	Wave Collected 0	1	2	3	4
Household Demographics	✓				
Mental Health	PHQ-9 All adults			MHI-5 1 resp. only	
Income & Employment	✓	✓	✓	✓	✓
Food Insecurity		Basic	Detailed	Detailed	Detailed
Coping Strategies			✓	✓	✓
SAP Receipt			✓	✓	

PHQ-9 MHI-5 Food Insecurity

Baseline Characteristics by 4Ps status: Depression

	Full Sample			Panel Respondents		
	(1)	(2)	(3)	(4)	(5)	(6)
	Non-4Ps	4Ps	Difference	Non-4Ps	4Ps	Difference
Severe Depression	0.012	0.016	0.004	0.014	0.018	0.004
	(0.110)	(0.125)	(0.005)	(0.119)	(0.135)	(0.012)
Moderate or Severe Dep.	0.156	0.156	-0.001	0.175	0.147	-0.029
	(0.363)	(0.363)	(0.015)	(0.381)	(0.355)	(0.036)
Any Depression	0.497	0.489	-0.007	0.507	0.486	-0.021
	(0.500)	(0.500)	(0.020)	(0.501)	(0.501)	(0.048)
Observations	1144	1324	2468	211	218	429

Specification

For individual i living in household j in wave t:

$$\text{Depression}_{i(j)t} = \beta_1 4\text{P}_j + \beta_2 \text{Wave3}_t + \beta_3 4P_j \times \text{Wave3}_t + \gamma X_{i(j)t} + \epsilon_{i(j)t}$$

- $X_{i(j)t}$ represents some combination of: controls for gender and age, household fixed effects, and individual fixed effects
- Individual fixed effects specification drops those who responded in wave 0 but not wave 3
- Standard errors clustered at province level

Severe Depression

	(1) Severe Depression	(2) Severe Depression	(3) Severe Depression	(4) Severe Depression
4Ps	0.00362			
	(0.0103)			
Wave=3	0.335***	0.333***	0.333***	0.332***
	(0.0393)	(0.0393)	(0.0404)	(0.0395)
Wave=3 x 4Ps	-0.0986**	-0.0982**	-0.0943**	-0.0932**
	(0.0394)	(0.0397)	(0.0404)	(0.0392)
Observations	2906	2906	2906	858
Baseline Mean Outcome	0.0142	0.0142	0.0142	0.0163
Fixed Effects	None	Household	Household	Individual
Controls	None	None	Age/Gender	N/A
Sample	All	All	All	Panel indiv.

Other Cutoffs

Explanations

- Non-4P households experienced larger increase in depression, perhaps because of delayed cash transfers

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- Non-4P households experienced larger increase in depression, perhaps because of delayed cash transfers
- Other explanations we rule out:
  - Differential effects due to actual transfer receipt: Results are similar when we restrict to non-4Ps who have reported receiving the SAP payment Restrict
  - Differential trends due to unbalanced characteristics: Results are similar when we control for time trends interacted with unbalanced baseline characteristics Robustness
  - Differential effects due to COVID-19 burden: COVID-19 symptom prevalence similar in the two groups (14% among 4Ps vs 18%)

Mechanisms

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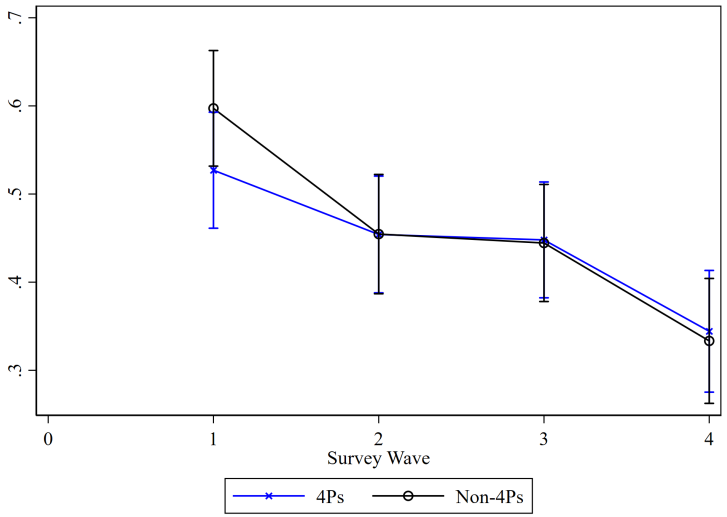
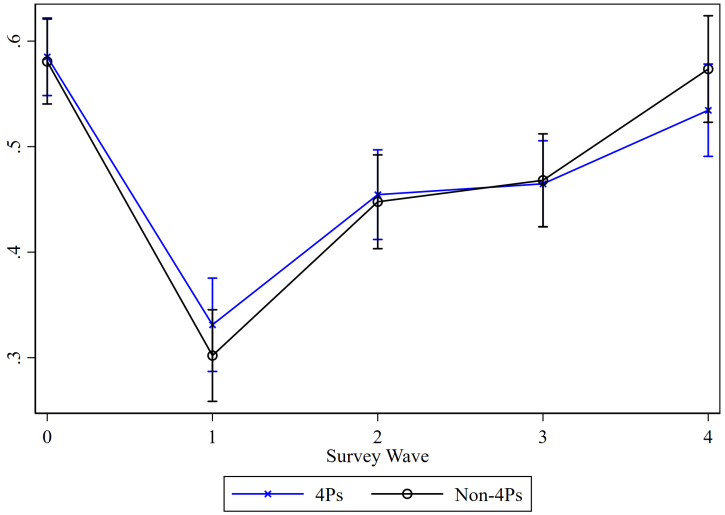
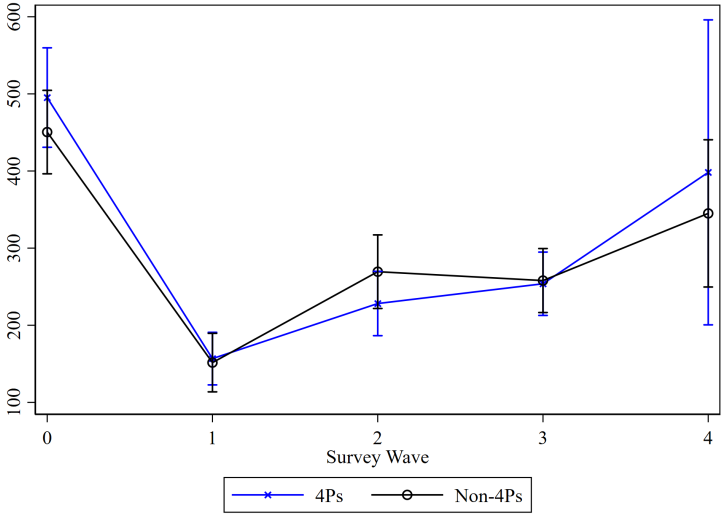
Food Insecure



Adult Employment Share

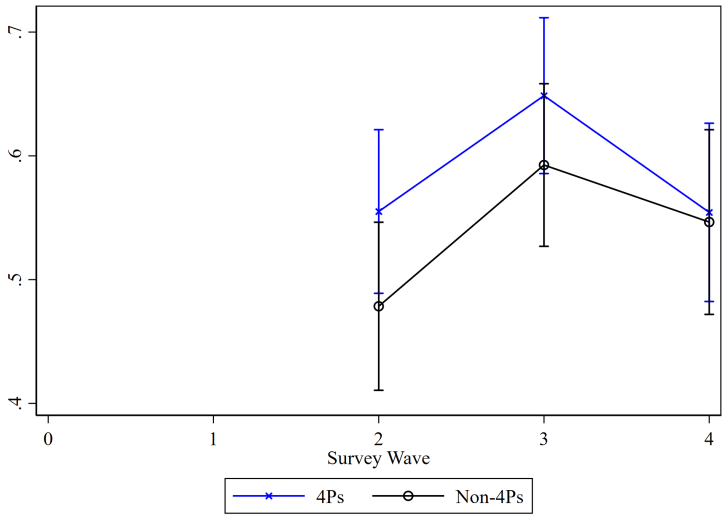


Weekly Earnings (per capita)

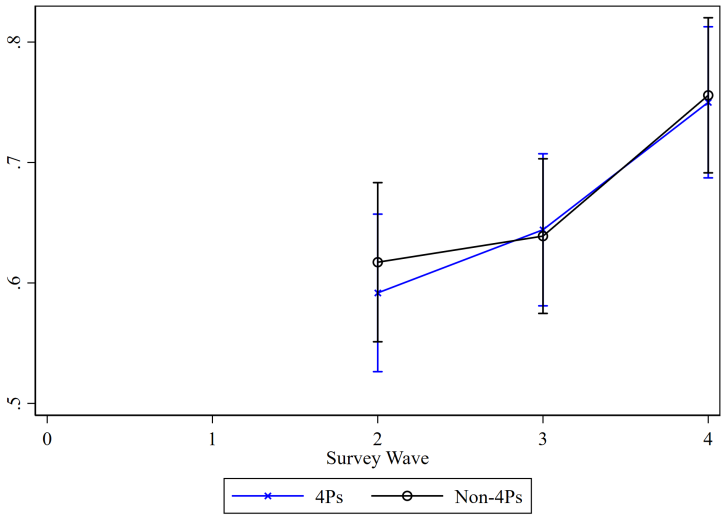


Mechanisms

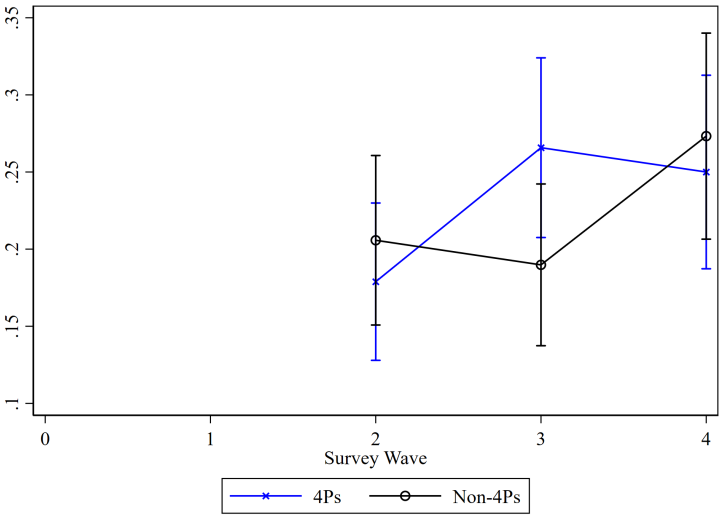
Reduced Savings



Took Out Loan



Reduced Business Investment



Mechanisms

	(1) Food Insecure	(2) Adult Employment Share	(3) Weekly Earnings (per capita)	(4) Reduced Savings	(5) Took Out Loan	(6) Reduced Business Investment
Wave=0 x 4Ps		0.0457	-13.04			
		(0.0536)	(106.1)			
Wave=1 x 4Ps	-0.0946*	0.0704	-56.27			
	(0.0529)	(0.0425)	(104.3)			
Wave=2 x 4Ps	-0.0325	0.0527	-88.75	0.0621	-0.0250	0.00278
	(0.0566)	(0.0366)	(104.2)	(0.0729)	(0.0608)	(0.0495)
Wave=3 x 4Ps	-0.0229	0.0378	-51.07	0.0436	0.0110	0.0966*
	(0.0454)	(0.0385)	(103.3)	(0.0655)	(0.0671)	(0.0493)
Observations	1656	2091	2078	1216	1216	1216
Outcome Mean	0.456	0.471	298.8	0.563	0.660	0.226
Fixed Effects	Household	Household	Household	Household	Household	Household

Discussion

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  - Substantial evidence for positive correlation between food insecurity and mental health problems (Cole and Tembo 2011, Pourmotabbed et al 2020, Jones 2017), including during the COVID-19 pandemic (Fang et al 2021, Rahman et al 2021)

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- Suggests food insecurity a potential driver of depression effects
  - Substantial evidence for positive correlation between food insecurity and mental health problems (Cole and Tembo 2011, Pourmotabbed et al 2020, Jones 2017), including during the COVID-19 pandemic (Fang et al 2021, Rahman et al 2021)
- Seemingly persistent effects: despite easing of food insecurity, non-4Ps had higher depression in wave 3

Summary

- We find mental health worsened during the first few months of the pandemic (like many other papers)
- Cash transfer timeliness matters
- 4Ps beneficiaries who received the transfers earlier experienced smaller increases in depression
- Food insecurity seems to be an important factor

PHQ-9

Back

We would like to know how you have been feeling over the last 2 weeks. Over the last 2 weeks, how often have you been bothered by any of the problems?

- Little interest or pleasure in doing things
- Feeling down, depressed or hopeless
- Trouble falling or staying asleep or sleeping too much
- Feeling tired or having little energy
- Poor appetite or overeating
- Feeling bad about yourself – or that you are a failure or have let yourself or family down
- Trouble concentrating on things, such as reading the newspaper or watching television
- Moving or speaking so slowly that other people could have noticed, or so fidgety or restless that you have been moving a lot more than usual
- Thoughts that you would be better off dead, or thoughts of hurting yourself in some way
- Not at all (0); Several days (1); More than half the days (2); Nearly every day (3)

PHQ-9

Back

- Depression score: sum of responses (higher numbers: more severe depression)
- Severe depressive symptoms (20-27)
- Moderately severe depressive symptoms (15-19)
- Moderate depressive symptoms (10-14)
- Mild depressive symptoms (5-9)
- Minimal depressive symptoms (0-4)

MHI-5

Back

Questions:

1. During the past month, how much of the time were you a happy person?
2. How much of the time, during the past month, have you felt calm and peaceful?
3. How much of the time, during the past month, have you been a very nervous person?
4. How much of the time, during the past month, have you felt downhearted and blue?
5. How much of the time, during the past month, did you feel so down in the dumps that nothing could cheer you up?

Response options:

- All of the time (Score of 1 for Q1-2, 6 for Q3-5)
- Most of the time (Score of 2 for Q1-2, 5 for Q3-5)
- Some of the time (Score of 4 for Q1-2, 4 for Q3-5)
- A little of the time (Score of 5 for Q1-2, 2 for Q3-5)
- None of the time (Score of 6 for Q1-2, 1 for Q3-5)

MHI-5

- Depression score: 100*(Sum - 5)/25
- Low numbers: more severe depression
- Severe (0-52)
- Moderate (53-60)
- Mild (61-68)
- No depression (69-100)

Back

Food Insecurity Question (Wave 1)

Back

- In the past 7 days, did you or any other family member eat fewer meals in a day because of lack of food?
- Yes/No

Food Insecurity Questions (Waves 2-4)

Back

In the last four weeks...

- how often were you worried that your family might not have enough to eat?
- how often were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?
- how often did you or any household member have to eat a limited variety of foods due to a lack of resources?
- how often did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?
- how often did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?
- how often did you or any other household member have to eat fewer meals in a day because there was not enough food?
- how often was there no food to eat of any kind in your household because of lack of resources to get food?
- how often did you or any household member go to sleep at night hungry because there was not enough food?
- how often did you or any household member go a whole day and night without eating anything because there was not enough food?
- 1.Never 2. Rarely (once or twice in the month) 3. Sometimes (three to ten times in the month) 4. Often (more than ten times in the month)

Food Insecurity Variable

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- Wave 1: Dummy = 1 for "Yes" response
- Waves 2-4: Dummy = 1 for "Sometimes" or "Often"

Other Depression Cutoffs

	(1) Moderate or Severe Dep.	(2) Moderate or Severe Dep.	(3) Moderate or Severe Dep.	(4) Moderate or Severe Dep.	(5) Any Depression	(6) Any Depression	(7) Any Depression	(8) Any Depression
4Ps	-0.000879				-0.00708			
	(0.0364)				(0.0401)			
Wave=3	0.371***	0.358***	0.352***	0.351***	0.179***	0.167***	0.170***	0.166***
	(0.0338)	(0.0339)	(0.0321)	(0.0324)	(0.0430)	(0.0431)	(0.0431)	(0.0430)
Wave=3 x 4Ps	-0.0764	-0.0562	-0.0519	-0.0434	-0.0202	-0.00684	-0.00256	0.00385
	(0.0538)	(0.0521)	(0.0523)	(0.0534)	(0.0635)	(0.0630)	(0.0627)	(0.0639)
Observations	2906	2906	2906	858	2906	2906	2906	858
Baseline Mean Outcome	0.156	0.156	0.156	0.161	0.493	0.493	0.493	0.497
Fixed Effects	None	Household	Household	Individual	None	Household	Household	Individual
Controls	None	None	Age/Gender	N/A	None	None	Age/Gender	N/A
Sample	All	All	All	Panel indiv.	All	All	All	Panel indiv.

Back to Severe

Robustness: Unbalanced Baseline Characteristics

	(1) Severe Depression	(2) Severe Depression	(3) Severe Depression	(4) Severe Depression
4Ps	0.000341			
	(0.00881)			
Wave=3	0.372***	0.369***	0.371***	0.358***
	(0.0633)	(0.0629)	(0.0639)	(0.0697)
Wave=3 x 4Ps	-0.139***	-0.135***	-0.132***	-0.135**
	(0.0444)	(0.0460)	(0.0467)	(0.0487)
Observations	2906	2906	2906	858
Baseline Mean Outcome	0.0142	0.0142	0.0142	0.0163
Fixed Effects	None	Household	Household	Individual
Controls	None	None	Age/Gender	N/A
Sample	All	All	All	Panel indiv.

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Robustness: SAP Recipients

	(1) Severe Depression	(2) Severe Depression	(3) Severe Depression	(4) Severe Depression
4Ps	0.00242			
	(0.0122)			
Wave=3	0.343***	0.344***	0.345***	0.349***
	(0.0440)	(0.0433)	(0.0451)	(0.0434)
Wave=3 x 4Ps	-0.103**	-0.104**	-0.104**	-0.110**
	(0.0414)	(0.0408)	(0.0420)	(0.0406)
Observations	2478	2478	2478	740
Baseline Mean Outcome	0.0152	0.0152	0.0152	0.0162
Fixed Effects	None	Household	Household	Individual
Controls	None	None	Age/Gender	N/A
Sample	All	All	All	Panel indiv.

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