Pacific Islands Families Study:
Report on Financial Difficulties Scale

Barry Milne

Eileen Li

Nichola Shackleton

COMPASS
RESEARCH CENTRE

FACULTY OF ARTS
THE UNIVERSITY OF AUCKLAND
Whare Wānanga o Tāmaki Makaurau

June 2020

Introduction

The Pacific Islands Families Study (PIFS) is an ongoing longitudinal birth cohort study started in 2000. 1398 Pacific children born at Middlemore Hospital in South Auckland and their parents were recruited in this study. A wide range of child health outcomes were available at early waves, giving us an opportunity to look into the association between poverty and child health outcomes. In general, poverty can be measured in two ways: income poverty and material difficulty. Income alone may not be sufficient to capture the diversity of household economic circumstances when assessing the poverty-health relationship (Shackleton et al., 2020). Moreover, no household level income was collected in PIFS. However, there were 13 questions on financial difficulties available at wave 1, 2, 4 and 6, each had a binary answer (Yes or No). This allowed us to compose a financial difficulties scale with four levels: 0, 1, 2 or 3+ financial difficulties, by aggregating the binary answers. This report will assess the validity of this scale by a) comparing mother-reported financial problems across waves, b) looking at the correlation between financial problems and other socioeconomic indicators, and c) comparing mother-reported and father-reported financial problems within each wave, and d) explore for possible interviewer effects.

Questions on financial difficulties are listed below:

In the last year, have you done any of the following or have any of the following happened to you as a result of financial problems?
1. *Sold possessions*
2. *Cashed in life insurance*
3. *Postponed major purchases*
4. *Borrowed money from friends or relatives*
5. *Failed or taken bankruptcy*
6. *Fallen behind in paying bills*
7. *Obtained a loan to reduce or pay off debts*
8. *Had a creditor call or come and see you to demand payment*
9. *Had our home, car or other property repossessed*
10. *Moved to a cheaper home*
11. *Moved in with other people*
12. *Had other people move in with you*
13. *Sent one or more of your children to live with someone else*

Financial difficulties scale across waves

Both primary and collateral care givers were interviewed at waves 1, 2 and 6. For the sake of simplicity, primary care givers will be referred as mothers and collateral care givers will be referred as fathers in this report.

The distributions of financial difficulties scale as reported by **mothers** are presented below. There were different response patterns in waves 1 and 6, vs. waves 2 and 4.

Financial problems	Wave1		Wave2		Wave4		Wave6	
	Count	Perc	Count	Perc	Count	Perc	Count	Perc
0	669	54.08	246	21.19	229	21.5	584	57.37
1	216	17.46	251	21.62	198	18.59	150	14.73
2	170	13.74	393	33.85	226	21.22	167	16.4
3+	182	14.71	271	23.34	412	38.69	117	11.49
Total	1,237		1,161		1,065		1,018	

Table 1. Financial difficulties scale across waves, mother-report

In wave 1 and 6, more than 50% mothers reported no financial problems over the last year (54% in wave 1 and 57% in wave 6), whereas about 21% reported no financial problems in wave 2 and 4. To our knowledge, there was no event happened in 2002 and 2004, when waves 2 and 4 were conducted, that could be accounted for the deterioration of family financial situation.

The transition of people moving out of financial difficulties was also assessed (Table 2). 45.9% mothers reported having <u>one or more financial problems at wave 1</u>. Of these mothers, 83.4% reported the same in wave 2, 85.5% in wave 4 and 46.6% in wave 6. This is barely above chance, given 78.8%, 78.5% and 42.6% have one or more financial problems at waves 2, 4, and 6, respectively.

WAVE	1	2	4	6
1	**45.9%**	83.4%	85.5%	46.6%
2		**78.8%**	83.0%	45.2%
4			**78.5%**	49.2%
6				**42.6%**

Table 2. Persistence of 'one or more financial problems', mother report

Similarly, a transition table for people persistently having <u>two or more financial problems</u> is presented in Table 3 below. This table also indicates that the proportion in financial difficulties at later waves is only slightly higher than would be expected by chance.

WAVE	1	2	4	6
1	**28.5%**	67.3%	68.3%	36.1%
2		**57.2%**	68.8%	31.7%
4			**59.9%**	35.0%
6				**27.9%**

Table 3. Persistence of having 'two or more financial problems', mother-report

Overall, these tables suggest that the persistence of financial problems across waves is modest at best. This is confirmed by the modest correlation for the overall scale shown in Table 4.

WAVE	1	2	4	6
1		0.172	0.162	0.137
2			0.291	0.134
4				0.209

Table 4. Correlations between financial difficulties scale across waves, mother-report

Changes in the responses to the individual items by year

There are quite different response patterns with many items more likely to be endorsed in waves 2 and 4 than 1 and 6. The last item, "postponed medical care" (or "postponed visits to the doctor to help keep down cost") was not included in our financial difficulties scale as it was not available in wave 6. Numbers in the table relate to the percentage of individuals in each year endorsing an item:

	Wave1	Wave2	Wave4	Wave6
sold possessions	2.18	7.58	9.39	2.16
cashed in life insurance	0.32	0.6	0.94	0.29
postponed major purchases	5.66	14.13	37.18	18.37
borrowed money from friends/family	22.64	54.61	46.01	17.78
filed for bankruptcy	0.24	0.43	0.47	0.1
fallen behind paying bills	35.81	62.07	59.12	29.27
loan to pay off debts	9.38	11.29	23.57	7.37
creditor call and demand payment	2.75	4.57	9.77	3.14
home, car, other property repossessed	1.05	1.64	3.19	1.18
moved to a cheaper home	7.28	6.03	10.23	2.75
moved in with others	5.34	6.89	9.2	2.46
had people move in with you	6.55	7.32	8.92	3.83
sent child(ren) to live elsewhere	1.05	0.95	2.54	1.18
postponed medical care - same scale at w1 & w2 and "Postponed visits to the doctor to help keep down costs. " - a different scale at w4	2.1	5.25	30.92	

Table 5. Responses to the individual items by year, mother-report

The table shows that the elevated reporting in waves 2 and 4 compared to waves 1 and 6 is (mostly) consistent across items. There is no evidence that that a small number of items are driving the differences across waves in the distribution of the overall scale.

Correlation between financial difficulties scale and other socioeconomic indicators

There is no association with other measures of socio-economic stats at wave 1, modest evidence of correlation at waves 2 and 4, and a small correlation with only one of the measures – single parenting – at wave 6 (Table 6).

Correlation between number of financial problems and	Wave1	Wave2	Wave4	Wave6
Mother weekly income	-0.0142	-0.1505	-0.1731	-0.072
Maternal education	-0.0012	-0.1208	-0.0764	0.0397
Single parent	0.0393	0.0817	0.1367	0.0847

Table 6. Correlation with other SES indicators, mother-report

Father-reported financial difficulties scale

Responses from fathers were available at wave 1, 2 and 6. The distributions of father-reported financial difficulties scale are presented below:

	Wave1		Wave2		Wave6	
Financial problems	Count	Perc	Count	Perc	Count	Perc
0	234	28.09	234	30.67	245	40.7
1	163	19.57	113	14.81	139	23.09
2	184	22.09	129	16.91	106	17.61
3+	252	30.25	287	37.61	112	18.6
Total	833		763		602	

Table 7. Financial difficulties scale across waves, father-report

Less than a third reported no financial problems at waves 1 and 2, and this increased to 40.7% in wave 6. However, 54%, 21.2% and 57% mothers reported no financial problems at waves 1, 2 and 6 respectively. Decreasing evidence of financial problems as children age is more in line with expectations (as families with older children tend to have greater financial security), than the inverted U- shaped trends with mother's reporting

Tables 8-10 show the persistence of financial difficulties as reported by the father, and the correlations across wave of the father-reported financial difficulties scale. As with the mothers, persistence was only slightly above chance for father-reported financial difficulties, and correlations were modest. This confirmed the mother findings that the persistence of financial problems across waves is modest at best.

WAVE	1	2	6
1	**71.9%**	77.8%	60.5%
2		**69.3%**	59.7%
6			**59.3%**

Table 8. Persistence of 'one or more financial problems', father report

WAVE	1	2	6
1	**52.3%**	66.1%	41.3%
2		**54.5%**	42.3%
6			**36.2%**

Table 9. Persistence of having 'two or more financial problems', father-report

WAVE	1	2	6
1		0.294	0.088
2			0.178

Table 10. Correlations between financial difficulties scale across waves, father-report

However, the father-reported scale did show stronger associations with father's income across waves, though associations with father's education were weaker (Table 11).

Correlation between number of financial problems and	Wave1	Wave2	Wave4
Father weekly income	-0.3272	-0.4711	-0.2744
Father education	-0.1748	NA	-0.08

Table 11. Correlation with other SES indicators, mother-report

Comparison of mother-reported and father-reported financial difficulties scale

Correlations between the mother and father-reported scales tended to be low, though around 0.22 at wave 2 (table 12)

	Father			
Mother	**Wave1**	**Wave2**	**Wave4**	**Wave6**
Wave 1	**0.112**	0.062	NA	0.030
Wave 2	0.137	**0.216**	NA	0.036
Wave 4	0.098	0.217	NA	0.152
Wave 6	0.008	0.036	NA	**0.067**

Table 12. Correlation with other SES indicators, mother-report

To assess the reliability of these items, we assessed the item-level agreement for mothers and fathers in each wave (1, 2 & 6). Across items and across waves there was very little evidence of any agreement between mother and fathers. While that might be expected for some items that differ between partners, agreement was still low or absent for items 10-13 which are likely to be experienced similarly by mothers and fathers.

Item	Wave1				Wave2				Wave6		
	Mother endorse (%)	Father endorse (%)	Kappa		Mother endorse (%)	Father endorse (%)	Kappa		Mother endorse (%)	Father endorse (%)	Kappa
1. Sold possessions											
	2.18	1.32	0.1548		7.58	7.21	0.0376		2.16	7.31	0.0448
2. Cashed in life insurance											
	0.32	0.72	-0.0049		0.6	0.79	-0.005		0.29	0.33	-0.004
3. Postponed major purchases											
	5.66	42.86	0.0202		14.13	52.82	-0.003		18.37	17.94	-0.1053
4. Borrowed money from friends or relatives											
	22.64	31.57	0.0451		54.61	38.58	0.2181		17.78	20.03	0.1365
5. Failed or taken bankruptcy											
	0.24	0.6	-0.002		0.43	0.39	-0.004		0.1	0.17	0
6. Fallen behind in paying bills											
	35.81	55.58	0.0927		62.07	54.07	0.2275		29.27	44.85	0.0436
7. Obtained a loan to reduce or pay off debts											
	9.38	7.2	0.0059		11.29	5.51	0.0648		7.37	15.86	0.014
8. Had a creditor call or come and see you to demand payment											
	2.75	1.32	0.1054		4.57	13.78	-0.024		3.14	10.33	0.0361
9. Had our home, car or other property repossessed											
	1.05	0.12	-0.0022		1.64	0.92	0.101		1.18	2.5	0.0886
10. Moved to a cheaper home											
	7.28	14.65	0.0814		6.03	4.46	0.1546		2.75	2.66	0.0291
11. Moved in with other people											
	5.34	6.84	0.1283		6.89	3.94	0.2475		2.46	1.66	-0.0209
12. Had other people move in with you											
	6.55	6	0.0341		7.32	4.07	0.1102		3.83	4.32	0.1573
13. Sent one or more of your children to live with someone else											
	1.05	0.12	-0.0022		0.95	0.52	0.1608		1.18	0.33	0.1957

Table 13. Agreement (kappa statistic) between mother- and father-reported financial problems

Interviewer effect on financial difficulties scale

One possible explanation of the inconsistency observed across waves was interviewer effect. PIF has employed its own interviewers on a casual or fixed-term basis for the duration of data collection. There were 10 interviewers in wave 1, 7 in wave 2, 17 in wave 4 and 18 in wave 6. The interviewing team at wave 2 was largely different from the team at wave 1, and the team at wave 4 largely different to wave 2. Wave 6 has a bit more overlap with wave 4.

We looked at the percentage of endorsing an item by interviewer. Interviewer #11 stood out as higher percentages were observed frequently over 13 items. Similar for interviewer #24 in wave 2 and #34 & #35 in wave 4. No interviewer was apparently different from the others in wave 6. It is worth noting that, in practice, interviews conducted by the same interviewer are likely to be clustered in the same area. Therefore it is plausible that one particular interviewer was associated with higher percentage of endorsing an item, if the area was more deprived.

However, no deprivation information related to location was available for PIFS at these early waves.

For abovementioned interviewers, we looked at the correlation between number of financial problems and other socioeconomic indicators, for those who were interviewed by them, compared to those who were not.

Correlation between number of financial problems and	Wave1		Wave2		Wave4	
Interviewer	**#11**	**rest**	**#24**	**rest**	**#34 & #35**	**rest**
	n = 138		n = 261		n = 176	
Mother weekly income	-0.0308	-0.0103	-0.1613	-0.1491	-0.3677	-0.1308
Maternal education	-0.0496	-0.0183	-0.1369	-0.1477	-0.1951	-0.0515
Single parent	0.205	0.0139	0.0504	0.0567	0.062	0.1384

Table 14. Interviewer effects

We were not convinced that there was a significant interviewer effect given the similar correlations between the outlier interviewer and all other interviewers for each wave presented in Table 14 above.

Conclusion

The financial problems scale in PIFS shows inconsistency across waves, and little evidence of agreement across partners and similarity of overall scores across partners. For the mother-reported scale there were low or absent associations with other socio-economic indications, while for the father-reported scale there were moderate associations between the scale and the father's income. There is no suggestion that specific interviewers were responsible for the poor performance of the scale. Overall, there is little evidence to suggest it can be used to accurately describe the material deprivation experienced by the PIFS cohort. While the father's scale showed some criterion validity, there was still low persistence across waves. Further, the father's scale is not useable for the full sample because it is available for slightly more than half the sample only, and this sample is necessarily biased as it contains few single-parent families.

A check of whether data entry errors are responsible for the poor performance of the scale (e.g., if it is possible to compare the recorded data against a small sample of booklets) might be worthwhile, in that it would identify whether data re-entry may improve the quality of the electronic data.