

IPS in Aotearoa New Zealand – estimating the impact of participation based on linked administrative data

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Disclaimer

Access to the data used in this study was provided by Stats NZ under conditions designed to give effect to the security and confidentiality provisions of the Data and Statistics Act 2022. The results presented in this study are the work of the author, not Stats NZ or individual data suppliers.

These results are not official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI) which is carefully managed by Stats NZ. For more information about the IDI please visit <https://www.stats.govt.nz/integrated-data/>.

The results are based in part on tax data supplied by Inland Revenue to Stats NZ under the Tax Administration Act 1994 for statistical purposes. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes, and is not related to the data's ability to support Inland Revenue's core operational requirements.

The opinions, findings, recommendations, and conclusions expressed in this report are those of the authors, not Stats NZ, MSD, or the other agencies involved in this research collaboration.

Outline

- Background and aims
- Methods and limitations
- Results
- Summary and discussion
- Conclusion and next steps

Background and aims

Individual Placement and Support (IPS)

- internationally used, evidence-based approach to employment support
- for people with severe mental health conditions or problematic substance use in contact with mental health and addiction (MH&A) services
- intensive
- voluntary

Individual Placement and Support (IPS)

- available in parts of Aotearoa New Zealand for two decades
- funded by health regions and MSD
- despite recent expansion it does not yet have national coverage
(see coverage [map](#))

Individual Placement and Support (IPS)

- MSD was funded to deliver trials in two new sites in the 2017 Budget
- this study was funded by evaluation funding accompanying the trials
- for results to date see [IPS trials](#)

IPS has 8 practices and principles

- integration of mental health and employment services: employment specialists and clinical teams work together to deliver IPS
- focus is on competitive employment ie. employment in mainstream competitive jobs
- eligibility is based on client choice: ‘zero exclusions’– everyone who is interested in working is eligible regardless of eg. perceived job-readiness, substance use, or legal system involvement
- attention to client preferences: job search is consistent with a participant’s preferences and skills

Practices and principles continued

- rapid job search: people are helped to look for jobs soon after entering
- systematic job development: employment specialists develop relationships with employers and proactively seek work opportunities based on a person's work preferences – they do not just respond to advertised vacancies
- individualised job supports: employment support is time-unlimited and individualised to both the employer and the employee
- work incentives planning: benefits counselling, including advice on how working will affect benefits, supports the person through the transition into work

Existing international evidence

- there is strong evidence from randomised controlled trials that IPS participation has large positive effects on employment outcomes
- across 7 meta-analyses IPS participants had much better employment outcomes compared to usual treatment conditions
- rate ratios range between 1.6 and 2.5 for any competitive employment
- See [2023 review](#)

Existing international evidence

- the evidence base is still developing for other outcomes such as mental health and quality of life
- few studies have looked at flow-on effects on participants' total income, or their health, justice, education and training, welfare benefit and other service use outcomes

Expanding to other groups

- emerging evidence that IPS can be effective for groups other than those with severe mental illness
- modified models are being developed and trialled e.g. for people with PTSD, anxiety and depression, people with a history of involvement with the justice system, and young people facing mental health and other difficulties in the transition to adulthood.

Our 2020 study of 5 case study DHBs

- 1 in 10 MH&A service users accessed IPS
- participation rates for Māori and Pacific MH&A service users were not consistently higher or lower than average across DHBs, and were equivalent overall
- those who received IPS had high levels of labour market disadvantage, showing that IPS reached the people it was intended to support
- employment outcomes varied across ethnic groups in a manner that is consistent with differences in labour market disadvantage and risk of labour market discrimination
- despite this, for all ethnic groups employment rates were in line with or exceeded an (ambitious) international benchmark

The aims of this second study

- estimate the causal effects of IPS participation on employment, income, health, education, and justice outcomes
- examine impacts for Māori and by gender
- improve the evidence base for future policy and funding decisions

Methods and limitations

Our approach

- we use linked administrative data in the IDI
- we find people who participated in IPS in the 3 years to March 2018 in the 5 case study DHBs (Auckland, Counties Manukau, Waikato, Lakes, and Taranaki)
- all these DHBs had established IPS programmes at the time

Our approach

- we focus on people out of work in the month before their IPS participation started to maximise policy relevance for MSD, and align with RCTs
- we use propensity score matching and hard matching on selected characteristics to match with people who used MH&A services in the same group of DHBs and appear similar but did not participate IPS
- we compare the outcomes of the two matched groups over the following 3 years to estimate the impact of IPS participation

More on the matching

- we exact match on:
 - the quarter and year
 - whether the person is in an Auckland DHB
 - Māori or Pacific ethnicity
 - whether the person is on a main benefit and the broad benefit type
- we probabilistically match on a wide range of other characteristics which could influence referral/self-selection into IPS and/or outcomes using estimated 'propensity scores'
- we use matching with replacement, meaning the same person in the matched control group could match to more than one IPS participant

Variables in the propensity score estimation

Whether located in Auckland	Mental health diagnoses
Highest qualification	Past mental health pharmaceutical use
Sex	Co-occurring health conditions
Ethnic group	Past ED visits (in past 3 years – excl last 6 months)
Age group	Past hospitalisations – mental health, non-mental health, and self-harm
Rural/urban address	Past contact with mental health and addiction services
NZDep 2018	Benefit type and benefit history
Driver's licenses held	Percentage of life in NZ
Number of children and age of youngest child	History of corrections sentences
Labour market income in past year	Education and training history
Employment history	

Assessing statistical significance

- because we examine multiple outcomes across multiple populations, some estimated effects could be statistically significant by chance
- we account for this by assessing statistical significance using false discovery rate adjusted q-values

Limitations

- we can check that the two groups compare well on characteristics that can be observed in IDI data
- but we can't be sure that the groups don't differ in unobserved ways that influence their likelihood of selecting into IPS and are important to their outcomes
- we apply a sensitivity test to try to assess how much this might be driving the results

Limitations continued

- matched controls are not able to be found for all participants
- not all of the outcomes sought by IPS are able to be measured using administrative data
- mental health and quality of life cannot be directly measured
- measures of wellbeing from a Māori world view are absent
- small numbers make detecting statistically significant effects for sub-groups challenging
- numbers do not yet support sub-group analysis for Pacific or other groups

Results

The matched samples

- total IPS participants = 1,839
- matched IPS participants = 1,659
- matched controls = 1,503

Matched participants and controls compare well on observed characteristics

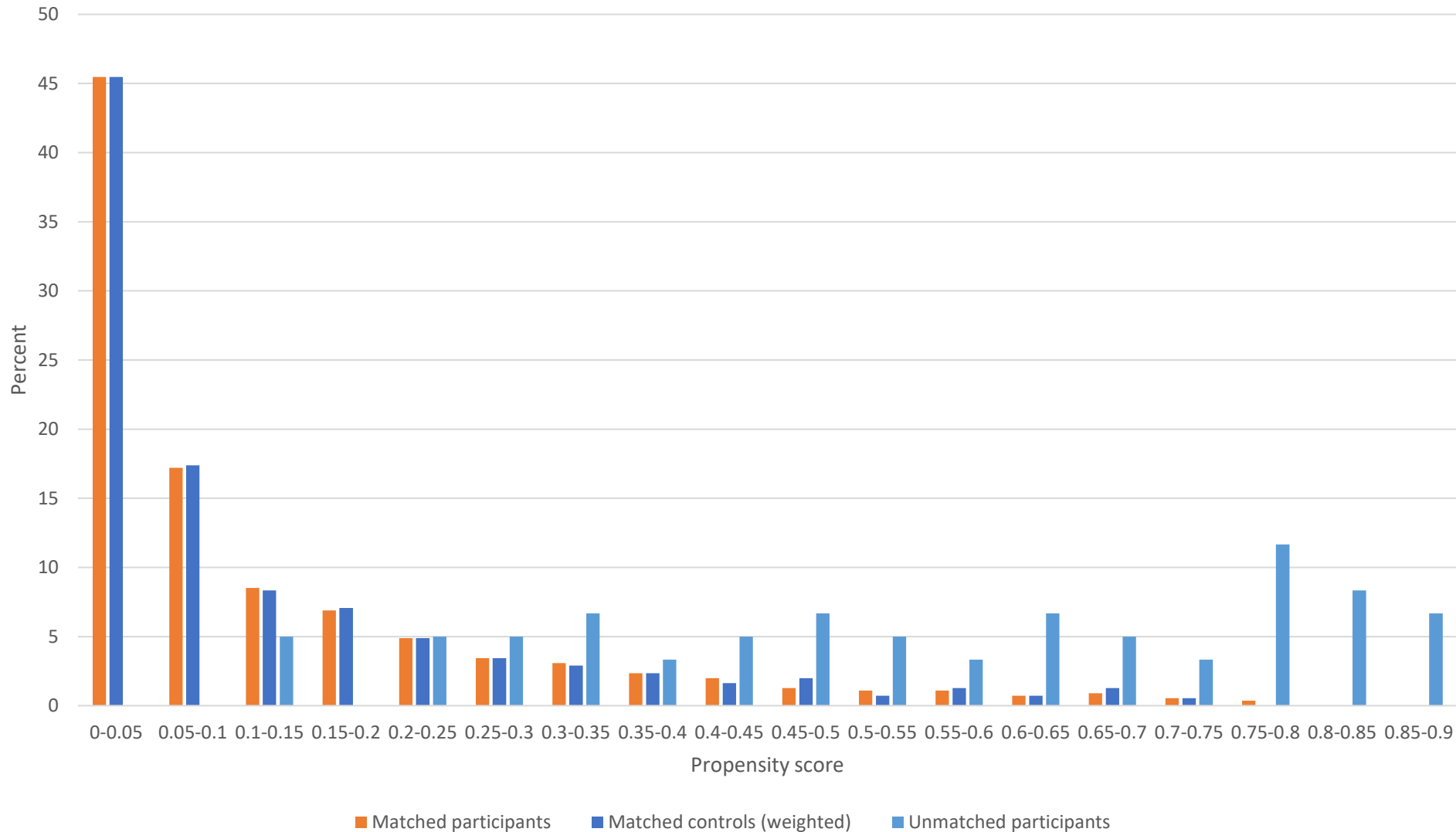
Characteristic	Matched participants (%)	Matched controls (weighted %)
Female	44.4	43.5
Age at participation		
18-24 years old	24.6	24.3
25-34 years old	24.3	23.9
35-44 years old	23.6	24.8
45-54 years old	19.9	20.3
55-62 years old	8.0	7.1
1 or more children	25.0	27.4
Living in Auckland	38.2	38.2
New Zealand deprivation index (NZDep)		
Deciles 1-2 (least deprived)	6.5	7.1
Deciles 3-4	10.5	11.2
Deciles 5-6	15.6	14.3
Deciles 7-8	25.9	26.1
Deciles 9-10 (most deprived)	39.1	38.2
Māori ethnicity	31.0	31.0
Pacific ethnicity	8.0	8.0
European ethnicity	73.7	74.6
Asian ethnicity	8.5	8.9
MELAA ethnicity	2.9	2.9

... continued

Characteristic	Matched participants (%)	Matched control (weighted %)
Received a main benefit in past month	80.3	80.6
Received Supported Living Payment	27.0	26.8
Received Jobseeker Support - Health and Disability	38.9	38.4
In education or training in month before participation	7.4	7.8
Served a community sentence in past 3 years	28.8	29.2
Served a prison sentence in past 3 years	13.0	14.7
One or more offences committed in past 3 years	41.5	41.7
<i>Health services in past 3 years:</i>		
Prescribed anti-depressant medication	56.7	58.0
Prescribed anti-psychotic medication	54.9	55.1
Schizophrenia diagnosis in PRIMHD	16.1	15.2
Bipolar disorder diagnosis in PRIMHD	17.2	16.7
Substance use disorder diagnosis in PRIMHD	7.2	7.1
Four or more crisis contacts with mental health service	66.7	65.2
Any mental health diagnosis in PRIMHD	58.0	55.3
One or more mental health related hospitalisations	33.2	31.7
One or more non-mental health related hospitalisations	33.3	34.2
One or more self-harm related hospitalisations	8.3	7.6
One or more emergency department visits	58.9	60.3

And have similar propensity score distributions

Distribution of propensity scores



Participants who could not be matched faced more employment challenges on average

- we were unable to find a match for 10 percent of participants
- they were more likely to:
 - be male
 - live in Auckland
 - be Māori, Pacific, or Asian
 - be receiving Job Seeker - Health Condition or Disability benefit
- they were much more likely to:
 - have been prescribed anti-psychotic or anti-depressant medication
 - have a schizophrenia, bipolar disorder, or substance use diagnosis recorded
 - have had crisis contacts with MH&A services
 - have had MH&A hospitalisations

Estimated impacts on employment and benefit receipt

Outcome	Total
months employed	up**
months employed while on a main benefit	up**
months employed while not on a main benefit	up**
months on benefit	up

Significance based on false discovery rate adjusted q-values:

* statistically significant at the 5% level

** statistically significant at the 1% level

Estimated impacts on employment and benefit receipt

Outcome	Total	Māori
months employed	up**	up*
months employed while on a main benefit	up**	up*
months employed while not on a main benefit	up**	up
months on benefit	up	up

Significance based on false discovery rate adjusted q-values:

* statistically significant at the 5% level

** statistically significant at the 1% level

Estimated impacts on employment and benefit receipt

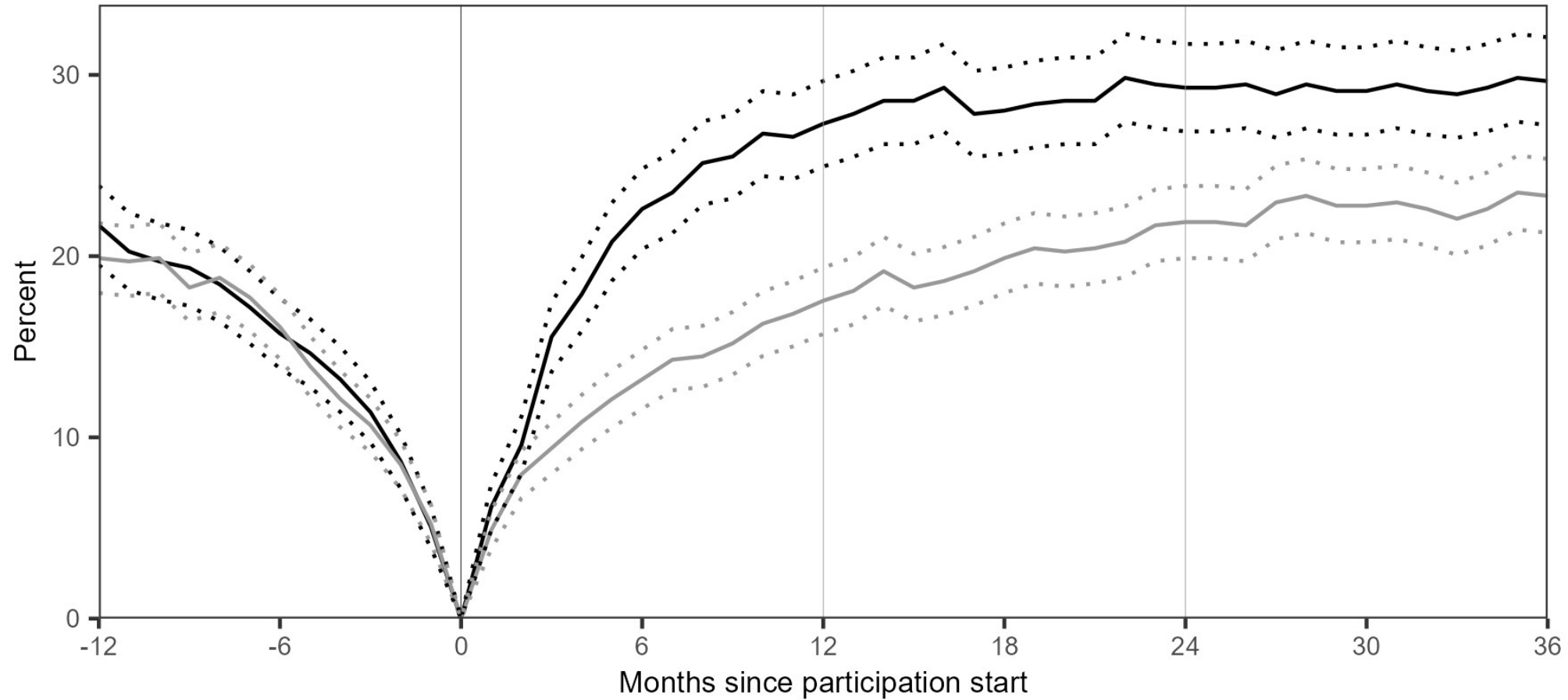
Outcome	Total	Māori	Males	Females
months employed	up**	up*	up**	up**
months employed while on a main benefit	up**	up*	up**	up**
months employed while not on a main benefit	up**	up	up	up**
months on benefit	up	up	up	down

Significance based on false discovery rate adjusted q-values:

* statistically significant at the 5% level

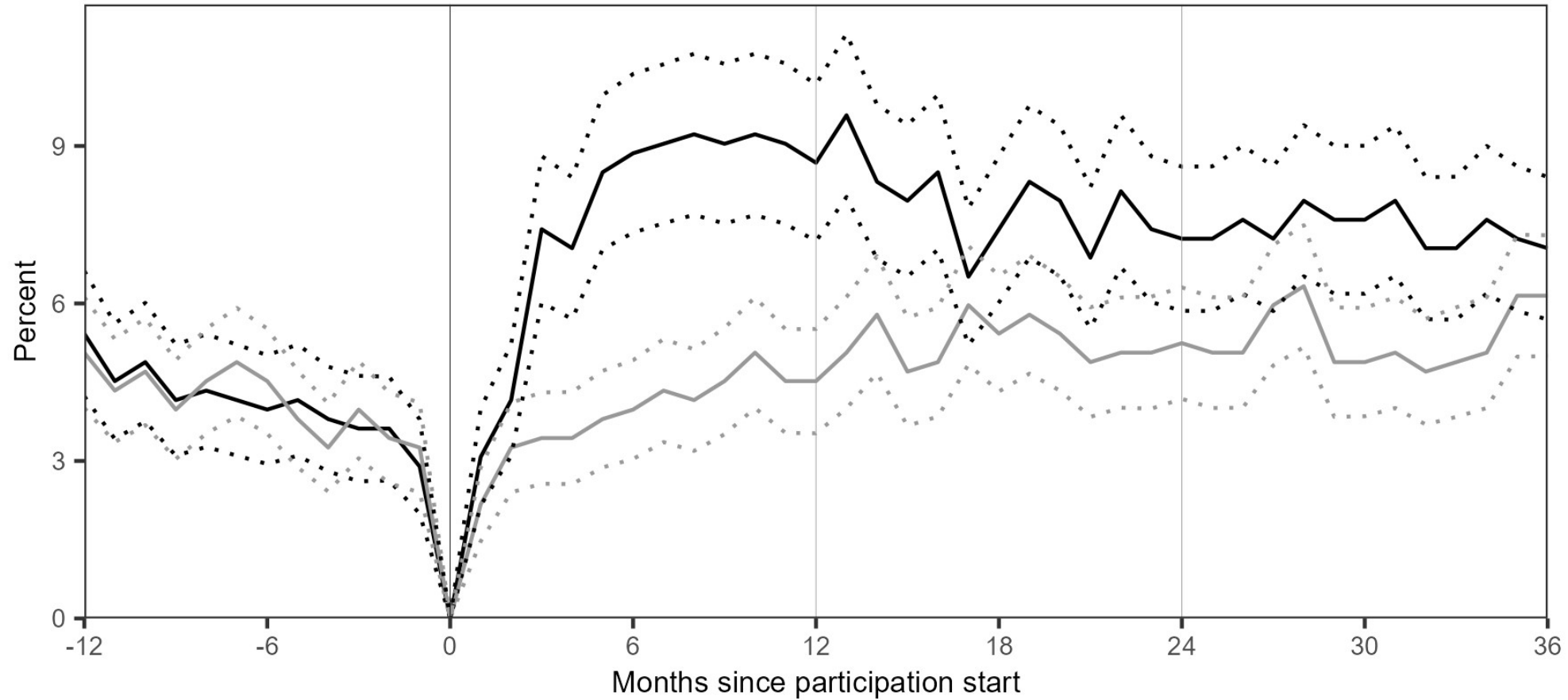
** statistically significant at the 1% level

% in employment before and after referral



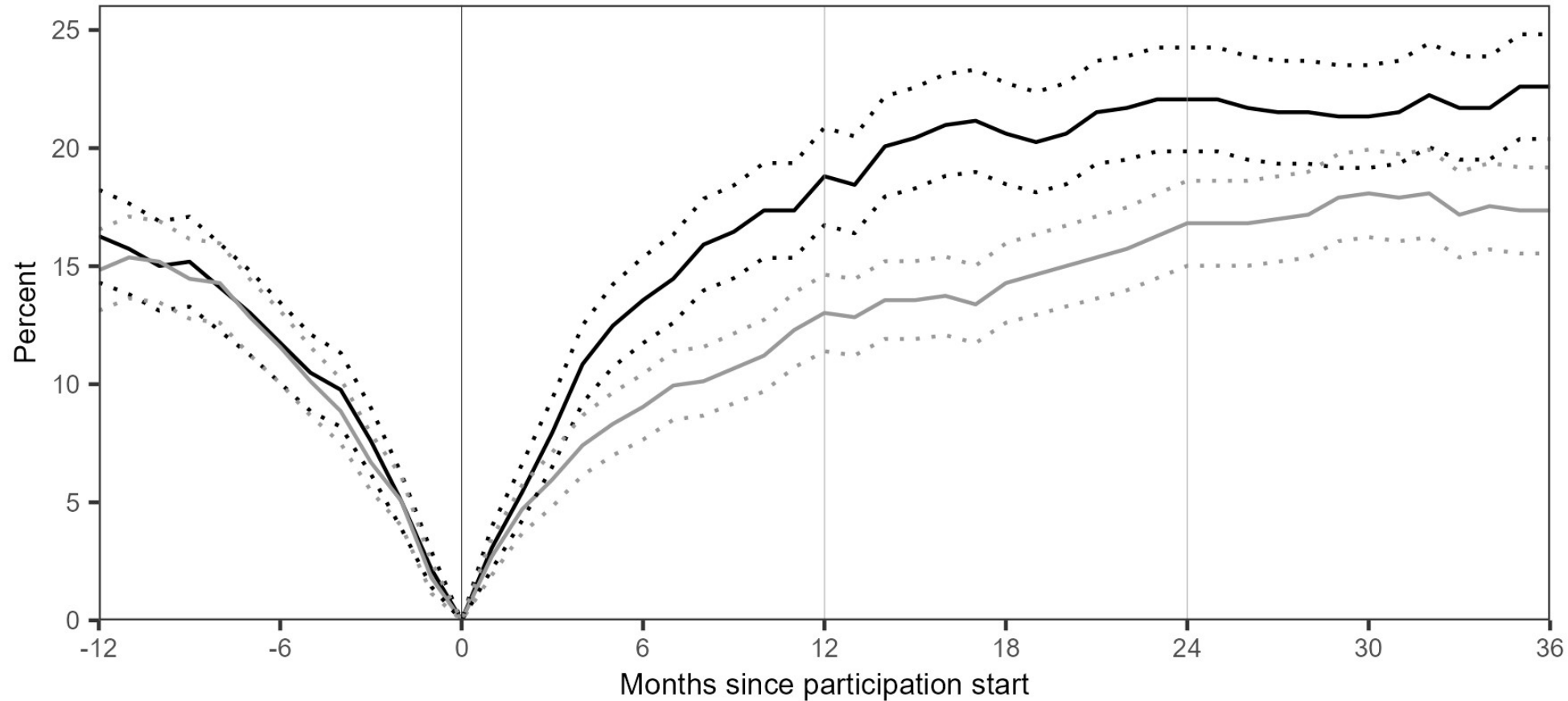
— Participant ···· Participant (lower CL) ···· Participant (upper CL)
— Matched comparison ···· Matched comparison (lower CL) ···· Matched comparison (upper CL)

% in employment while on a main benefit



— Participant Participant (lower CL) Participant (upper CL)
— Matched comparison Matched comparison (lower CL) Matched comparison (upper CL)

% in employment while not on a main benefit



— Participant ···· Participant (lower CL) ···· Participant (upper CL)
— Matched comparison ···· Matched comparison (lower CL) ···· Matched comparison (upper CL)

Estimated impacts on income

Outcome	Total
net income from all sources	up*
net income from employment	up**
net income from MSD benefits	up
net income from other transfers	down
tax paid	up
net government transfers (benefits and transfers less tax paid)	down

Significance based on false discovery rate adjusted q-values:

* statistically significant at the 5% level

** statistically significant at the 1% level

Estimated impacts on income

Outcome	Total	Māori
net income from all sources	up*	up
net income from employment	up**	up
net income from MSD benefits	up	up
net income from other transfers	down	down
tax paid	up	up
net government transfers (benefits and transfers less tax paid)	down	down

Significance based on false discovery rate adjusted q-values:

* statistically significant at the 5% level

** statistically significant at the 1% level

Estimated impacts on income

Outcome	Total	Māori	Males	Females
net income from all sources	up*	up	up*	down
net income from employment	up**	up	up	up**
net income from MSD benefits	up	up	up	down
net income from other transfers	down	down	down	down
tax paid	up	up	up	up
net government transfers (benefits and transfers less tax paid)	down	down	up	down*

Significance based on false discovery rate adjusted q-values:

* statistically significant at the 5% level

** statistically significant at the 1% level

Estimated impacts on corrections sentences

Outcome	Total
months serving any corrections sentence	down
months serving any custodial sentence	down

Significance based on false discovery rate adjusted q-values:

* statistically significant at the 5% level

** statistically significant at the 1% level

Estimated impacts on corrections sentences

Outcome	Total	Māori
months serving any corrections sentence	down	down
months serving any custodial sentence	down	down

Significance based on false discovery rate adjusted q-values:

* statistically significant at the 5% level

** statistically significant at the 1% level

Estimated impacts on corrections sentences

Outcome	Total	Māori	Males	Females
months serving any corrections sentence	down	down	down	down
months serving any custodial sentence	down	down	down	down

Significance based on false discovery rate adjusted q-values:

* statistically significant at the 5% level

** statistically significant at the 1% level

Estimated impacts on study and qualifications

Outcome	Total
months enrolled	up
gained a qualification	up
gained at least a level 2 qualification	up**

Significance based on false discovery rate adjusted q-values:

* statistically significant at the 5% level

** statistically significant at the 1% level

Estimated impacts on study and qualifications

Outcome	Total	Māori
months enrolled	up	up
gained a qualification	up	up
gained at least a level 2 qualification	up**	up

Significance based on false discovery rate adjusted q-values:

* statistically significant at the 5% level

** statistically significant at the 1% level

Estimated impacts on study and qualifications

Outcome	Total	Māori	Males	Females
months enrolled	up	up	down	up
gained a qualification	up	up	up	up
gained at least a level 2 qualification	up**	up	up	up

Significance based on false discovery rate adjusted q-values:

* statistically significant at the 5% level

** statistically significant at the 1% level

Estimated impacts on health service use

Outcome	Total
months with IPS team face-to-face contacts	up**
months with MH&A face-to-face contacts	up**
% with MH&A inpatient stay	up**
% with MH&A crisis contact	up**
% with hospital admission for self-harm	up
% with non-MH&A inpatient stay	down
% with emergency department visit	up

Significance based on false discovery rate adjusted q-values:

* statistically significant at the 5% level

** statistically significant at the 1% level

Estimated impacts on health service use

Outcome	Total	Māori
months with IPS team face-to-face contacts	up**	up**
months with MH&A face-to-face contacts	up**	up**
% with MH&A inpatient stay	up**	up
% with MH&A crisis contact	up**	up*
% with hospital admission for self-harm	up	up
% with non-MH&A inpatient stay	down	down
% with emergency department visit	up	up

Significance based on false discovery rate adjusted q-values:

* statistically significant at the 5% level

** statistically significant at the 1% level

Estimated impacts on health service use

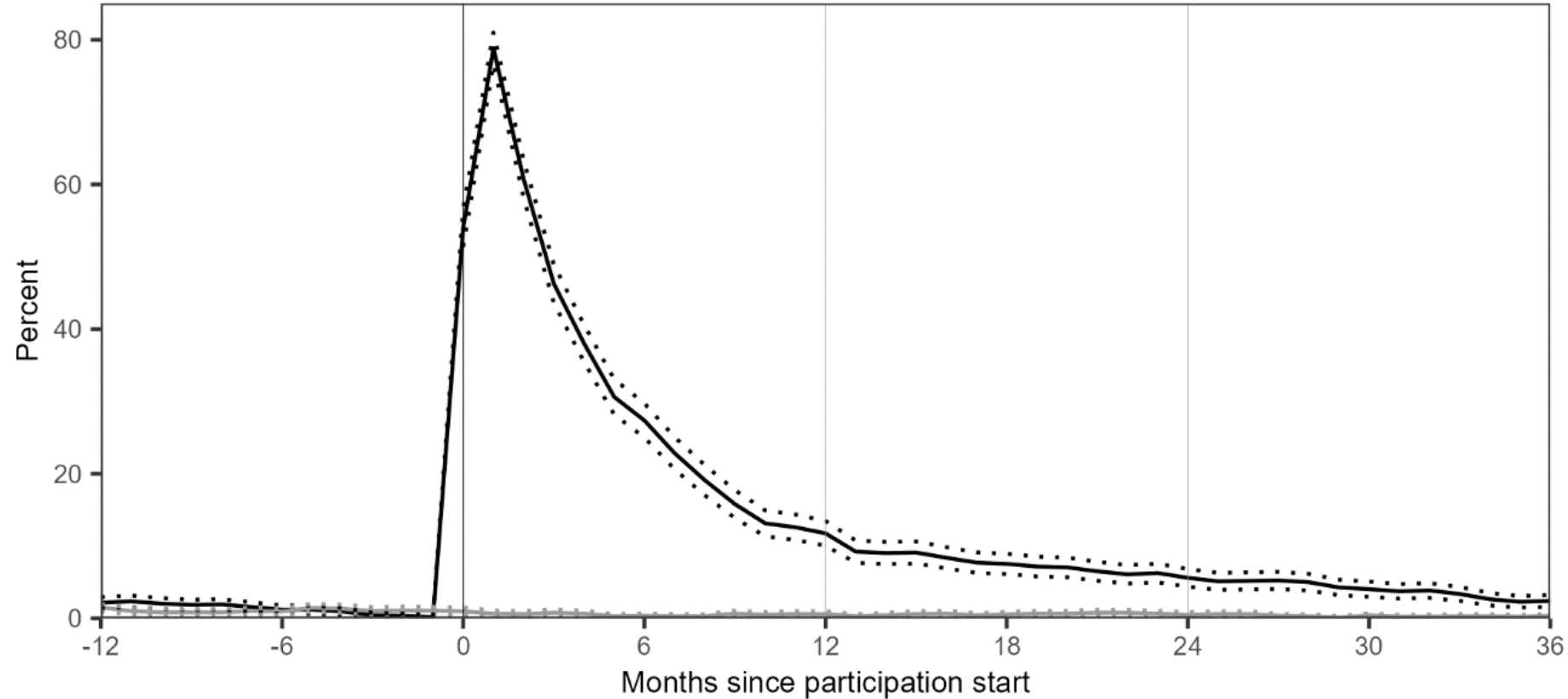
Outcome	Total	Māori	Males	Females
months with IPS team face-to-face contacts	up**	up**	up**	up**
months with MH&A face-to-face contacts	up**	up**	up**	up**
% with MH&A inpatient stay	up**	up	up	up*
% with MH&A crisis contact	up**	up*	up	up
% with hospital admission for self-harm	up	up	up	up
% with non-MH&A inpatient stay	down	down	down	down*
% with emergency department visit	up	up	up	down

Significance based on false discovery rate adjusted q-values:

* statistically significant at the 5% level

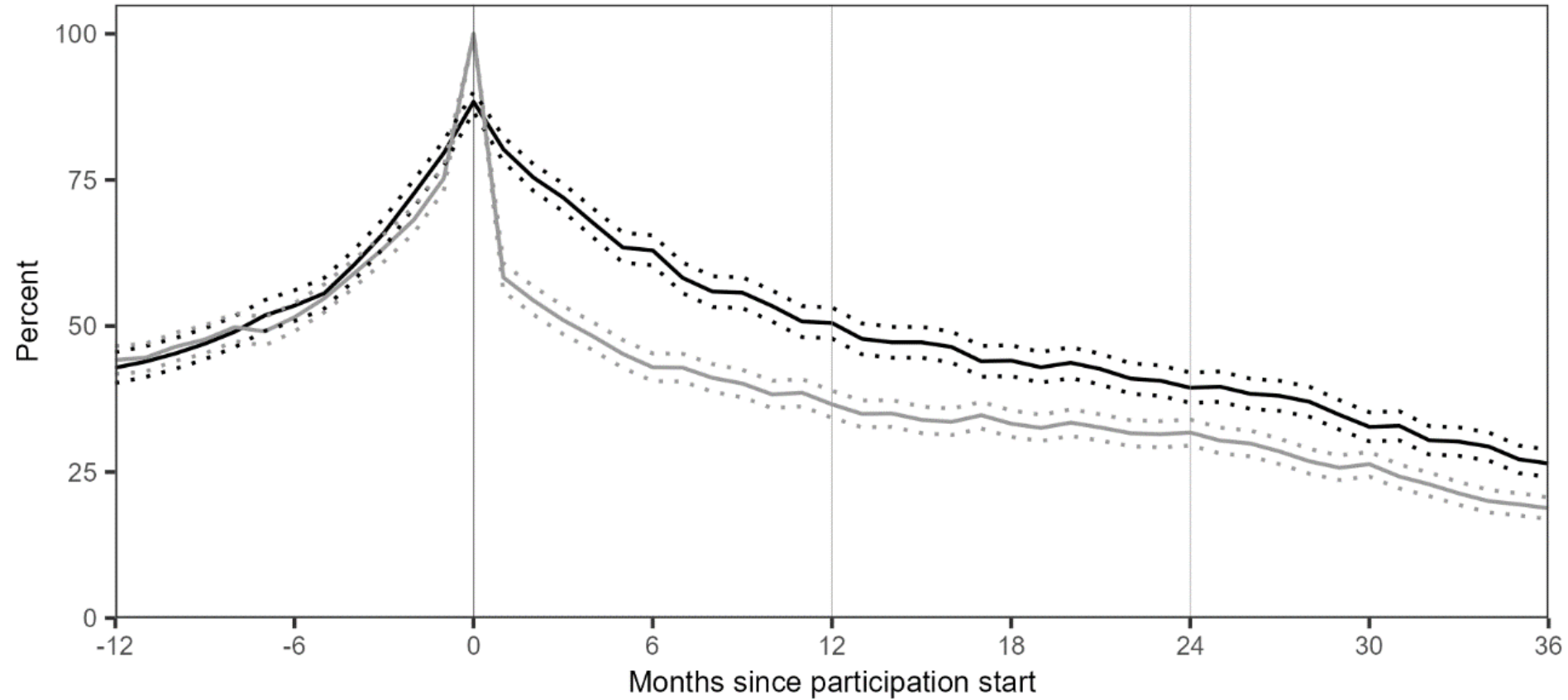
** statistically significant at the 1% level

% with face-to-face contact with an IPS team in month



— Participant ···· Participant (lower CL) ···· Participant (upper CL)
— Matched comparison ···· Matched comparison (lower CL) ···· Matched comparison (upper CL)

% with face-to-face contact with MH&A team in month



— Participant ···· Participant (lower CL) ···· Participant (upper CL)
— Matched comparison ···· Matched comparison (lower CL) ···· Matched comparison (upper CL)

Scale of the statistically significant impacts, total matched sample

- 1.6 times more likely to be in employment at 12 months
- 1.3 times more likely to be employed at 24 and 36 months
- almost three more months employed in total
- \$4,221 higher income from all sources (\$ 2018)
- \$5,056 more employment income (\$ 2018)
- twice as likely to gain a qualification at NQF level 2 or above
- four more months with MH&A face-to-face contacts
- 1.3 times more likely to have a MH&A inpatient stay
- 1.3 times more likely to have a MH&A service crisis contact

Sensitivity testing

- we matched with people in contact with MH&A services in other DHBs that did not offer IPS during the study period
- this reduced potential for selection bias, as we know matched controls were not offered the programme
- but matched controls would have experienced different labour market conditions and MH&A and other health service provision
- results were similar

Summary and discussion

Positive effects on employment

- IPS participation had positive effects on employment income, employment duration, and the rate of employment (which reduced over time as employment in the control cohort increased)
- this is consistent with international evidence from randomised controlled trials

Positive effects on income and qualifications

- matched participants also had higher total income after accounting for losses of benefits and other transfer and taxes paid, and gained more qualifications
- few previous studies have examined effects on these outcomes

There was no increase in total income for females however

- their increased employment income was offset by decreased benefit and other transfer income
- this suggests a need to strengthen benefits counselling, improve design and delivery of income support through Work and Income, and/or strengthen connections with Inland Revenue

Interpreting increased mental health service usage is difficult

- beneficial effects?

IPS may increase engagement with MH&A treatment and care in the transition to employment, resulting in people being more readily able to access needed services, and/or clinicians engaging more proactively with IPS participants

- negative effects?

although employment can have a positive effect on recovery from mental health conditions, being unemployed and actively seeking work and some working conditions can have negative effects on mental health

International evidence on effects on mental health and wellbeing is limited

- [meta-analysis](#) of the few studies with results for quality of life, global functioning, and mental health suggests positive effects, but with confidence intervals that include the null, and heterogeneity between studies
- [one RCT](#) reported no substantive effects on psychiatric symptoms or self-reported quality of life despite IPS participants having more contacts with mental health services and more use of emergency care and psychiatric evaluation than the control group

No previous studies have examined efficacy or effectiveness for Indigenous peoples

- while our results suggest that IPS provides effective employment support for Māori, further research is needed to identify, and support strengthening of, the cultural principles underpinning implementation for Māori
- it is not possible to compare with programmes for which impact evaluation evidence is sparse, including a range of Kaupapa Māori employment initiatives – these need research and evaluation resources to develop and build their evidence base

It is not clear whether results for matched groups over- or under-state effects across all participants

- [meta-analysis of results for different sub-groups](#) from RCTs does not give any guidance on whether effects would be larger or smaller in size for the 10 percent of IPS participants for whom a match could not be found:
 - IPS is effective in increasing employment irrespective of diagnostic, clinical, functional, and personal characteristics
 - it is more effective for populations with serious mental illness than for those with common mental health disorders
 - but it is also more effective for those with low symptom severity at baseline than for those with high symptom severity, independent of diagnosis

Conclusions and next steps

Conclusions

- our study demonstrates benefits of IPS in supporting employment and improving income and qualifications for people in contact with Aotearoa NZ MH&A services
- combined with international evidence this suggests that expanded IPS availability would be beneficial
- more research is needed to:
 - understand the effects of IPS on mental health symptoms and broader wellbeing
 - support cultural responsiveness for Māori
 - repeat this impact evaluation with a larger sample in coming years