

# **The Impact of Immigration on Child Health: Experimental Evidence From a Migration Lottery Program**

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## **Extended Abstract**

Does migration have a positive or negative impact on the health of the children of migrants? Determining the impact of migration on health requires a comparison of the current health of the migrant children to what their health would have been had they stayed in their home country. The latter is unobserved, and is usually proxied by the health of stayers of a similar age and gender to the migrant child. This approach is not very convincing because child health may be an important determinant of whether a family chooses to migrate. For example, families with unhealthy children may choose to move to wealthier countries in order to get better health care. On the other hand, these families may not be able to move away from the social support networks they have in their home country.

Recognizing this difficulty, economists often use statistical corrections for non-random selection when modelling outcomes for migrants (Robinson and Tomes, 1982). These typically rely on exogenous factors that are assumed to affect migration but do not otherwise directly affect the variable of interest (such as migrant health). For example, Woodruff and Zenteno (2001) and McKenzie and Rapoport (2004) use historic migration networks formed during the development of the Mexican railway system as exogenous determinants of current migration, in an instrumental variables framework. But there is some doubt about the assumptions behind these statistical remedies for selectivity in non-experimental data (Deaton, 1997), especially when the odds of migrating are very low (Hartog and Winkelmann, 2003).

The research reported here uses a unique random selection mechanism to overcome the interpretation difficulties posed by the non-random selection of migrants. Existing evidence suggests negative health consequences, such as increased diabetes and obesity, for Pacific Islanders who move to richer countries (Pawson and Janes, 1981; Salmond et al., 1989; Evans et al., 2001). However, other studies find a positive impact of migration on child health (Hildebrandt and McKenzie, 2005). Being able to compare migrants to randomly selected control groups allows us to provide stronger evidence on the short-term effects of migration on child health.

The random selection mechanism we use is based on the Pacific Access Category (PAC) under New Zealand's immigration policy. We argue that this provides valid experimental estimates of the effects of migration. The PAC allows an annual quota of 250 Tongans and 250 Fijians to migrate to New Zealand without going through the usual migration categories used for groups such as skilled migrants and business investors. Specifically, any Tongan or Fijian citizens aged between 18 and 45, who meet certain English, health

and character requirements, can register to migrate to New Zealand.<sup>1</sup> Many more applications are received than the quota allows, so a random ballot is used by Immigration New Zealand to select from amongst the registrations. The probability of success in the ballot is approximately 10 percent. Thus, we have a group of migrants and a comparison group who are similar to the migrants, but remain in Tonga or Fiji only because they were not successful in the lottery. Once their ballot is selected in the lottery, applicants must provide a valid job offer in New Zealand in order to have their application to migrate approved and be allowed to migrate.

The data used in this paper are from the Pacific Island-New Zealand Migration Survey (PINZMS). The survey design and enumeration, which was overseen by the authors in 2005/06, covered random samples of four groups: (i) Tongan and Fijian migrants to New Zealand, who were successful participants in the 2002/03 and 2003/04 lotteries used to determine who could apply to migrate under the Pacific Access Category (PAC), (ii) successful participants from the same lotteries who were still in Tonga or Fiji, either pending approval of their application for New Zealand residence or because their application was declined, (iii) unsuccessful participants from the same lotteries who were still in Tonga or Fiji, and (iv) a group of non-applicants in Tonga and Fiji.

The survey contains standard household survey sections on household demographics, education, labour supply, income, asset ownership and consumption, based where possible on the most widely used surveys in New Zealand and the Pacific Islands to enhance comparability. We have also a very detailed module on health, containing subjective questions on health status and objectively measured height and weight of all household members.

In this paper we examine the impact of migration on the health of children in migrant families as measured by their self-reported health status, weight for height and height for age. A comparison of winners and losers in the PAC ballot is used to obtain an experimental measure of the impact of migration on these health measures. As not all individuals with successful ballots had migrated by the time of our sample (due to the need to find a job offer and have it processed), estimation needs to account for non-compliance to the “treatment” of migration. We therefore consider both the intention-to-treat effect, which is the average impact on health of having a winning ballot in the PAC program, and the average treatment effect on the treated, which is the average impact of migrating for individuals who migrate after success in the ballot.

These health outcomes are examined because child weight for height has been demonstrated to be a good measure for identifying short-run effects on health (Strauss and Thomas, 1998). While it is typically thought that child height-for-age adjusts slowly to changes in environment, given the large change in environment for Tongan and Fijian migrants to New Zealand, there may be an impact on these measures. We also compare

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<sup>1</sup> The person who registers is a Principal Applicant. If they are successful, their immediate family can also apply to migrate as Secondary Applicants. The quota of 250 applies to the total of Primary and Secondary Applicants, and corresponds to about 70 migrant households.

the results for the objective measures to self-reports from migrants on the perceived change in health status of their children since migrating.

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