Time to establish a New Zealand/Aotearoa Twin Registry?

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New Zealand is often described as ‘punching above its weight’ in international health. There are many reasons for this success, including the Government's approach to tobacco control and the impact of the Dunedin Multidisciplinary Health & Development Study. In order to continue maximising this potential, New Zealand should consider initiating the establishment of a national longitudinal geocoded National Twin Registry. This should involve a study of development, health, wellbeing and illness, as well as a focus on individual, familial, social, and environmental factors, backed up by biological samples.

The Twin Method, which dates back to the work of Galton over one hundred years ago, formerly compares the similarity of identical (monozygotic, (MZ)) twins with fraternal (dizygotic, (DZ)) twins. Twin studies therefore represent an incredible and unique resource through which to examine the impact of genetics, as well as shared and unshared environments. Although historically focusing more on genetics, contemporary research using twin studies has started to investigate epigenetic factors, as well as explorations of wider environmental factors such as socio-economic deprivation, social capital, walkability and green space.

New Zealand has developed a particular expertise that is critical to the success of a venture such as the establishment of a Twin Registry. Evidence of this can be seen in the Dunedin Study, which is recognised as one of the most successful and highly cited longitudinal studies in the world. Some indication of the significant contribution made to contemporary understandings of health and disease resulting from this longitudinal study can be seen in the substantial volume of publications that have resulted from it (at least 776 published refereed journal articles, as well as almost 500 other publications).

Part of its success rests on the remarkable ongoing participation rate, which remains in excess of 90%. Poulton et al have recently outlined the factors behind this impressive rate, which includes good systems, good recruitment staff, removing barriers to participation, engaging assessments, noticeable research outputs, and appropriate resources. However, the authors state that although these factors are necessary, they are not sufficient to ensure such a high response rate. They suggest that their guiding philosophy of treating people as you would like to be treated yourself, combined with ‘professionalism, courtesy and persistence’ and a sustained focus on the researcher-participant relationship to build participant loyalty are the essential factors.

Although the Twin method is not without its critics, and has both a controversial and tainted history, it still offers an unparalleled opportunity to gain insight into the effects of gene-environment interactions on health, well-being and disease. Twin registries now exist in more than 20 different countries, with some countries hosting a number of such registries (for example there are 9 in the US). Neighbouring Australia established their Australian Twin Registry (ATR) in 1981. Hur & Craig also noted in 2013 that “during the past 10 years, the number of twin registries has increased rapidly across the globe”. The International Network of Twin Registries (INTR) has also been established in recent years to help foster international cooperation between registries.
The timing is opportune for New Zealand to establish such a registry. Rising rates of fertility treatment in New Zealand have resulted in increased twinning rates. In 2015, 1,620 twins were born out of a total of 61,038 births (up from 1,136 out of 56,639 births 40 years earlier). Establishing a Twin Registry is undoubtedly expensive and will require considerable planning and preparation. Some of these operational costs may be offset by access fees for investigators.

While results from twin studies elsewhere can be applied here, there are features unique to the New Zealand population which would enhance the value of a locally-based twin registry. The year 2020 is fast approaching. Given popular understanding of the term ‘20-20’ to indicate clear vision, aiming for this as the launch date, and incorporating this term in the title of such a registry might fortuitously offer an opportunity to generate popular widespread understanding of and support for the aims of the project.


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