

DUNEDIN STUDY CONCEPT PAPER

Provisional Paper Title: Pathways from social isolation to social cohesion: Protective factors that buffer the association between lifelong social isolation and trust.

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Objective of the study:

Social cohesion is critical to the resilience and prosperity of society (OECD, 2011; Spoonley et al., 2020). Social cohesion is a multidimensional concept that has been variously defined; however, definitions tend to emphasise connection, equality, and trust among individuals, communities, and within wider society (Eaqub & Collins, 2025; OECD, 2011; Spoonley et al., 2020). Social trust can be conceptually divided into two components depending on the trust target: interpersonal trust describes feelings of trust in other people, while institutional trust is defined as trust in institutions, such as political entities (Moxley et al., 2026; PytlikZillig & Kimbrough, 2016). Interpersonal and institutional trust have a bidirectional relationship, indicating that both are important for social cohesion (Abdelzadeh & Lundberg, 2025).

Social isolation is an objective indicator of low social connectedness, having few social contacts, and little involvement with other people (Holt-Lunstad & Steptoe, 2022). This contrasts with loneliness, which is the subjective emotion of distress as a result of being isolated, or the discrepancy between desired and actual level of social connection (Holt-Lunstad & Steptoe, 2022). Social isolation is a risk factor for poorer mental and physical health and a predictor of mortality and morbidity (Holt-Lunstad, 2024; Naito et al., 2021). Persistent, lifelong experiences of social isolation appear to have a more damaging effect than temporary or situational disconnection (Lay-Yee et al., 2021). Prior Dunedin Study analyses have shown that social isolation patterns across the lifecourse predict later health and mental health (Barrett-Young et al., 2023; Caspi et al., 2006; Lay-Yee, Hariri, et al., 2023; Lay-Yee, Matthews, et al., 2023), but researchers have not yet examined trust as an outcome of social isolation, nor the protective role of strengths that enable individuals to maintain or rebuild trust despite isolation.

In our examination of the effects of social isolation across the lifecourse on institutional and interpersonal trust, we are particularly interested in identifying protective facts that may buffer the effects of social isolation on trust that have the potential to inform policy and interventions. We identified potential protective factors through a review of the literature and grouped them conceptually into individual, relational, and contextual factors, informed by relational developmental systems theory (Lerner, 2018). In choosing protective factors for analysis, we prioritised those that are pliable and/or potentially modifiable through intervention. Protective factors are grouped by conceptual clusters:

- **Individual:** self-control (child), self-esteem (adolescence), optimism (adult), loneliness (adult), perceived stress (adult).
- **Relational:** family relationships (child), parental connection (adolescence & adult), quality

of intimate partnership (adult).

- **Contextual:** belonging, perceived community safety, social/civic participation, discrimination, perceived equity (adult).

Research question: How do protective factors buffer the effects of social isolation across the lifecourse on later trust in other people and in institutions?

Objective: To identify patterns of social connection and isolation across the lifecourse and investigate how these patterns relate to midlife trust in other people and institutions. We will focus particularly on individual, relational, and contextual strengths that help some individuals sustain or rebuild trust in the face of earlier social isolation.

Aim 1: To understand how social isolation across the lifecourse relates to interpersonal and institutional trust at age 52.

- **Hypothesis 1:** Persistent social isolation across childhood and adulthood will lead to lower trust at age 52.
- **Hypothesis 2:** Those who were socially isolated in adulthood only will show lower levels of trust than those who were socially isolated only in childhood.

Aim 2: To examine whether the association between social isolation and trust is mediated or moderated by individual, relational, and contextual protective factors from across the lifecourse.

- **Hypothesis 3:** The association between social isolation and trust will be moderated by protective factors, i.e., that higher levels of protective factors will be associated with a weaker association between social isolation and trust (buffering effect).
- **Hypothesis 4:** Adult loneliness and perceived stress partially mediate the relationship between social isolation and trust.

Data analysis methods¹:

First, reliability of the trust scales will be analysed and presented in the manuscript as these measures have not been described previously. These tests will include McDonald's ω , item-total correlations, and test-retest reliability (using repeated waves of data collected by Ipsos).

Aim 1: Using lifecourse social isolation groups (never isolated, child only, adult onset, persistent isolation), we will first look at differences in trust levels between groups at age 52 using ANOVAs and *t*-tests. We will then construct a linear regression model with social isolation group predicting trust at age 52, adjusting for key confounds (gender, child SES, adult SES).

Aim 2: First, moderation models will be constructed where each potential protective factor is included as a moderator in individual models, to test for moderation effects on the relationship between lifecourse social isolation and each type of trust. We will correct for multiple comparisons using FDR correction.

As perceived stress and loneliness could feasibly be mediators of a relationship between social isolation and trust, we will further conduct mediation analysis using the R lavaan package for these two variables.

¹ A key concern for the Dunedin Study is superficial analyses of data that simply identify differences or deficits between ethnic groups or other communities where inequities exist (e.g. persons with disabilities, Pasifika peoples, members of migrant and SOGIESC (Sexual Orientation, Gender Identify and Expression and Sexual Characteristics) communities). The cumulative effect of these types of studies is stigmatising and not of benefit. Any research that identifies differences must (a) incorporate information on the broader context (e.g. historical or political factors); (b) where possible undertake additional analyses to examine the source of the difference/s, and (c) include policy recommendations for its resolution.

Given that some of the protective factors proposed may conceptually overlap and/or cluster, we will also use confirmatory factor analysis to test the conceptual clusters as latent factors, and if appropriate will conduct path analysis with the latent factor(s) as moderators.

As we are limited by the ages at which variables are available, caution will be used in interpreting the findings for variables from only one point in time. For the contextual protective factors, which are only available cross-sectionally at age 52, we will be cautious in our interpretation of findings and will emphasise that any findings reflect concurrent covariation rather than moderation.

Where a variable is available at multiple time points, data will be averaged across all timepoints (separately by life stage for social isolation and SES, which are available at many timepoints). Continuous variables will be standardised to allow for comparison of effect magnitudes. Lifecourse social isolation will be categorised into 4 groups (as previously described) for analysis, with 'never isolated' as the reference group. To protect temporal precedence, we will not use age 52 social isolation in the construction of the adult social isolation variables.

As institutional trust is particularly subject to the country in which the participant lives (Kwon, 2019), in sensitivity analysis we will repeat analyses using a subset of participants who were living in Aotearoa New Zealand at age 52. We will also adjust for age 52 social isolation in the models to check whether associations between trust and social isolation in the different age periods aren't fully explained by prior isolation being correlated with concurrent isolation at age 52.

Variables needed at which ages:

Childhood variables (composite and/or multiple ages):

- sex (birth)
- social isolation (5-11)
- self-control (3-11)
- family relationships (Moos FES; 7-15)
- childhood SES (birth-11)
- parental connection (13, 15, 18)
- self-esteem (13, 15)

Adulthood variables (composites and/or multiple ages):

- gender (52)
- social isolation (26, 32, 38, 45)
- SES (21, 26, 32, 38, 45, 52)
- quality of intimate partnership (21, 26, 32, 38, 45, 52)
- parental connection—retrospective (38)
- social and civic participation (21, 52)
- social cohesion (52)
- discrimination (52)
- perceived stress (32, 45, 52)
- optimism (32)
- loneliness (38, 45, 52)
- Living in NZ (52)
- Depression (21, 26, 32, 38, 45, 52)

Significance of the Study (for theory, research methods or clinical practice):

Research on social isolation has tended to focus on mental health outcomes; however, it is important to understand the drivers of interpersonal and institutional trust in society, particularly given the wider societal context of social cohesion (Spoonley et al., 2020). Furthermore, much social isolation research tends to be deficit-framing, emphasising risk factors for pathological outcomes. In this project, we intend to take a strengths-based approach with the intention of better understanding resilience and positive adaptation throughout the lifecourse. We will take a holistic lifecourse approach by examining protective factors at the individual, relational, and contextual levels from different periods in the lifecourse.

Research suggests that trust tends to be context-dependent and shaped by numerous factors at individual, interpersonal, and societal levels, yet it is not known how lifecourse social factors may interact with social and structural determinants to influence trust (Kwon, 2019). Given the profound implications of trust for societal functioning, public health, and individual wellbeing, this study has the potential to inform both theoretical models and early, targeted interventions aimed at reducing the long-term harm of social isolation.

This study has been intentionally designed to have impact on policies related to social cohesion and social trust. In deciding which variables to include in our analysis, we prioritised protective factors that are potentially pliable and thus may inform interventions to sustain and/or rebuild social trust, which may in turn improve social cohesion more generally. Our findings have the potential to inform interventions focused on building social connection and trust at different life stages at the interpersonal and institutional levels. These interventions may be greatly informed by the examination of protective factors in this study, rather than targeting individual factors alone. This has particularly strong relevance within the healthcare system, where mistrust can act as a barrier to access and effective treatment (Shukla et al., 2025).

In addition, this research can guide the development of early prevention strategies aimed at preventing the onset of chronic social isolation. This is important as research shows that social isolation has detrimental consequences for mental, emotional, physical health and wellbeing (Holt-Lunstad, 2024; Holt-Lunstad & Steptoe, 2022) and is a risk factor for morbidity and mortality (Naito et al., 2021). Moreover, previous research on the long-term effects of persistent social isolation across the lifecourse that shows that increased social connectedness in adulthood can mitigate some of the effects of childhood isolation on later health outcomes, suggesting that social isolation may be a good target for interventions (Lay-Yee, Hariri, et al., 2023; Lay-Yee, Matthews, et al., 2023).

How the paper will contribute to Māori health advancement and/or equitable health outcomes²

The proposed research aims to contribute to the advancement of Māori health by deepening our understanding of the relationship between social isolation and trust. In a recent report conducted in NZ, Māori reported lower levels of trust and wellbeing than Pākehā respondents (Eaqub & Collins, 2025). Māori also tend to report lower levels of social support and higher loneliness (Stephens et al., 2010). Given the disproportionate burden Māori face in these areas, it is essential to gather research that can inform culturally responsive and effective interventions to strengthen social connectedness and improve outcomes for Māori.

² Helpful information can be found here: https://www.hrc.govt.nz/sites/default/files/2020-01/NZ%20Prioritisation-Framework-FA-web_0.pdf

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