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To cite this article: Atefeh Kiadarbandsari & Fuafiva Fa'alau (17 Jun 2024): A demographic analysis of developmental assets, misconduct behaviours, and depression among New Zealand youth in mentoring relationships, Journal of the Royal Society of New Zealand, DOI: [10.1080/03036758.2024.2363438](https://doi.org/10.1080/03036758.2024.2363438)

To link to this article: <https://doi.org/10.1080/03036758.2024.2363438>



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Published online: 17 Jun 2024.



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# A demographic analysis of developmental assets, misconduct behaviours, and depression among New Zealand youth in mentoring relationships

Atefeh Kiadarbandsari  and Fuafiva Fa'alau 

Faculty of Medical and Health Sciences, The University of Auckland, Auckland, New Zealand

## ABSTRACT

Mentoring is often utilised to support youth who have low levels of protective assets. This study explored 300 NZ youth (16-18 years old) who were involved in mentoring relationships to better understand how developmental assets influence depressive symptoms and misconduct behaviours. Results suggest that most participants possessed low to fair levels of internal (77.3%) and external (72.6%) assets with high levels of major depressive symptoms (40.7%) and moderate to high levels of misconduct behaviours (29.4%). There were demographic differences in developmental assets (e.g. Pacific youth reported higher assets and non-student participants reported lower assets than others), depressive symptoms (e.g. higher ranks for females than males) and misconduct behaviours (e.g. higher misconduct behaviours among Māori youth, non-student and full-time employed participants). Importantly, lower levels of external assets ( $\beta = -.90$ ,  $S.E = .20$ ,  $p = <.001$ ; 95% CI [-1.30, -.50]) and internal assets ( $\beta = -.76$ ,  $S.E = .29$ ,  $p = <.001$ ; 95% CI [-1.31, -.20]) predicted depressive symptoms and low levels of external assets significantly contribute to youth misconduct behaviours ( $\beta = -.40$ ,  $S.E = .08$ ,  $p = .31 <.001$ ; 95% CI [-.56, -.23]). These findings suggest strategies, programmes and policies to improve developmental assets which may decrease emotional and behavioural distress among youth.

## ARTICLE HISTORY

Received 27 November 2023  
Accepted 29 May 2024

## KEYWORDS

Developmental assets; positive youth development (PYD); internal assets; external assets; risk behaviours; depression; adolescents; Kruskal-Wallis; quantile analysis; New Zealand

## Introduction

In New Zealand, youth mental health is a major public health concern. For example, recent studies have found a significant rise in adolescents' depressive symptoms, suicidal thoughts and attempts, a drop in emotional well-being (Fleming et al. 2022) and experiences of psychological distress (i.e. anxiety or depression) (Ministry of Health 2022). In contrast, externalising behaviours such as risky driving behaviours and substance misuse have rapidly decreased (Lewycka et al. 2018; Fleming et al. 2022; Ministry of Justice 2023; Polglase and Lambie 2024). These major changes in young people's behaviours are not

**CONTACT** Atefeh Kiadarbandsari  akia647@aucklanduni.ac.nz

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well understood (Lewycka et al. 2018; Clark et al. 2022; Sutcliffe et al. 2023). Young people in NZ report a sense of alienation, lack of support, as well as a need to be heard and valued (Fleming et al. 2020b). Indeed, young people perceive a good life by having supportive relationships, and feeling safe and valued (Office of the Children's Commissioner and Oranga Tamariki 2019). Higher levels of feeling safe, respected, and valued across different contexts are linked to reduced risk of depression, suicidal and self-injurious behaviours, and violence (Search Institute 2005; Toomey et al. 2018). In this sense, family, school, peer groups, neighbourhood, and community when aligned with young people's capacities/skills can decrease youth risk-taking and distress (Jose and Pryor 2010; Lewycka et al. 2018) and prevent negative outcomes (Damon et al. 2003; Lerner et al. 2005; Theokas and Lerner 2006; Silbereisen and Lerner 2007; Damon 2008; Mariano and Damon 2008).

The Search Institute's Developmental Assets framework (Benson 1997; Search Institute 2005; Benson 2007) reflects a vision and terminology for supporting and fostering youth strengths or skills and their context (Benson 2008; Scales et al. 2017). In particular, assets are divided into internal assets and external assets (Benson 2007; Benson et al. 2011). Internal assets refer to a young person's capabilities, energies, strengths, and sparks that are categorised as commitment to learning (e.g. achievement motivation, school engagement), social competencies (e.g. planning and decision making, cultural competence), positive identity (e.g. personal power, sense of purpose), and positive values (e.g. caring, honesty, and integrity) (Benson 2008). External assets are positive experiences that young people need in their lives through environmental and interpersonal structures of a community represented in the four categories of support (e.g. family support, caring neighbourhood), empowerment (e.g. community values youth, safety), boundaries and expectations (e.g. contextual boundaries in family, school, etc.), and constructive use of time (e.g. involvement in youth programmes or religious community) (Benson 1997).

International research has examined the effects of developmental assets. For example, eating together in a family, as an external asset, has a buffering effect against youth unfavourable outcomes (e.g. substance use, depression/suicide, sexual activity, antisocial behaviours, violence, and school problems) (Fulkerson et al. 2006). Similarly, satisfying relationships inside the family provide a sense of freedom, being loved, and happiness for adolescents (Orejudo et al. 2021). When youth both internal and external assets/resources are aligned together, there will be a higher possibility of expressing indicators of thriving that include caring for others, overcoming adversity, respecting diversity, demonstrating leadership, caring about one's health, improving academic achievement, resisting risk, engaging in spirituality, delaying gratification, and acting as responsible members of the community (Scales et al. 2000; Benson et al. 2006; Benson et al. 2011).

Evidently, the developmental assets could be linked to a wide range of youth positive and negative outcomes such as depression, suicide, academic achievements, school-related problems, life satisfaction, resilience, engagement in risky behaviours, sexual behaviours, substance use, and health problems (Zelinski and Gilewski 2003; Mannes et al. 2005; Search Institute 2005; Filbert and Flynn 2010; Toomey et al. 2018; Soares et al. 2019; Taliaferro et al. 2020). Empirical evidence shows that possessing fewer developmental assets can be associated with higher levels of negative outcomes such as risky behaviours (e.g. violence, tobacco use, drug and alcohol use, antisocial behaviour, suicide

attempt, physical fighting, sexual intercourse, suicide, and risky driving,) and depression (Atkins et al. 2002; Catalano et al. 2002; Murphey et al. 2004; Benson et al. 2006; Heinze et al. 2010; Benson et al. 2011; Bleck and DeBate 2016; Wiium et al. 2021). Furthermore, depression and risky behaviours can overlap, with depression leading to substance abuse or smoking (Hasler et al. 2005; Keenan-Miller et al. 2007), violence, delinquent behaviour, antisocial behaviour (Donnellan et al. 2005), and suicide (Windfuhr et al. 2008).

Youth programmes are designed and applied by focusing on youth strengths (Catalano et al. 2004; Geldhof et al. 2015) and mostly implement interventions, prevention programmes, and practices to increase young peoples' skills and assets (Bowers et al. 2015a). Mentoring programmes are recognised as one of the most popular interventions designed for fostering positive youth development (Farruggia et al. 2011). Youth mentoring aims to promote positive outcomes for youth by facilitating supportive relationships through formal (i.e. one-on-one mentoring programmes, and youth development programmes) or informal (i.e. natural mentors/very important people [VIPs]) mentoring relationships (Rhodes 2005; Schwartz et al. 2012; Bowers et al. 2015b). Both mentoring approaches have been found effective in youth outcomes (Van Dam et al. 2018; Raposa et al. 2019). Youth who have benefited from mentoring relationships reported fewer behavioural problems, social anxiety, depressive symptoms and more coping skills, especially the mentees who were in a longer mentoring relationship (one year or more), in comparison to non-mentored youth (DeWit et al. 2016).

However, young people's background (e.g. age, gender, ethnicity, or familial socioeconomic status) plays a role in youth outcomes (Scales et al. 2008). In this regard, poor educational achievement, teenage pregnancy, poor mental health, and violent behaviours among adolescents have all been linked to communities with limited resources (Bozzini et al. 2020). Females are at higher risk of depressive symptoms than males (Ferrari et al. 2013; Joinson et al. 2016; Salk et al. 2017; Milot Travers and Mahalik 2021) whereas males could be at higher risk of risky behaviours (Lewis et al. 2021). Age as another determinant influences youth outcomes which by getting older young people's risk of experiencing depression (Merikangas et al. 2010) substance use (tobacco use) (Atkins et al. 2002), and alcohol consumption (Milot Travers and Mahalik 2021) may raise as well. Ethnicity/race also has been found as a factor of youth negative outcomes (Atkins et al. 2002) especially among youth reporting high levels of deprivation (e.g. low-income families) (Smokowski et al. 2014). Families from minority groups have essential roles in promoting their adolescents' internal assets such as academic engagement (Martinez-Fuentes et al. 2020), positive racial-ethnic identity, social competence, and positive values (Atkin and Yoo 2020). This process could be linked to family ethnic socialisation (i.e. educating adolescents on their ethnic-racial community to promote a positive perception of their ethnic-racial group) (Martinez-Fuentes et al. 2020). In detail, youth may feel a greater sense of pride in their ethnic identity and are more socially connected to others when they are educated about their cultural heritage, treat other ethnic groups equally, and spend time with people from other ethnic backgrounds (Muriwai et al. 2015; Williams et al. 2018; Atkin and Yoo 2020). The schools also can be an excellent setting for teaching youth about their ethnic identity, with learning about culture being associated with increased exploration of identity, a deeper awareness of the value of belonging to a group, and positive attitudes toward others from various races/ethnicities (Byrd and Legette 2022). Dunajeva (2021) found that youth's

positive identity can be promoted when their culture, language, and customs are accepted and expected in educational settings. For example, NZ-based studies revealed that Māori adolescents need to have a strong cultural identity to thrive, and culturally responsive teaching pedagogies are important for youth's parents (Highfield et al. 2023).

Regarding the importance of educational context in youth positive development, previous studies also reported that students who drop out of school or leave before graduation may experience more involvement in delinquency, mental health problems, and teen pregnancy (Tresidder et al. 1997; Manlove 1998; Esch et al. 2014; Hjorth et al. 2016). In a meta-analysis conducted by Gubbels et al. (2019), past studies reported over 1000 potential risk factors for school dropout and absenteeism. The main factors with substantial impacts included having a negative perception of school, drug abuse, externalising and internalising problems, inadequate parental engagement, a record of grade retention, having a low capacity for learning or dealing with learning challenges, and poor performance in school (Gubbels et al. 2019). According to Lawrence and Adebowale (2022), school dropout has a detrimental influence on both adolescents and society since it leads to less employment opportunities, social competency, economic contribution, and waste of educational resources. Similarly, Staff et al. (2020) concluded that adolescent intense work remains a contributing factor for high school dropouts since they have less time for homework, class attendance, involvement in out-of-school programmes, and motivation for academic achievement. They are at higher risk of school misbehaviours, absenteeism, suspensions, delinquency, and drug use, whereas, moderate workers were found to achieve better grades and scores than unemployed peers, as well as better school participation (Staff et al. 2020). Nevertheless, working during high school is inevitable for some youth especially those from minority groups or disadvantaged families (Staff et al. 2020). Youth studies in NZ, a multicultural society, also demonstrated differences, which are reviewed below.

### ***Studies on youth in the New Zealand context***

Both diversity and disparities among ethnic groups in NZ may impact youth outcomes. For example, the prevalence of depression and smoking were found higher among adolescents living in poverty (Denny et al. 2016). Indigenous Māori and Pacific peoples (two large ethnic populations in NZ) have long been identified as disadvantaged communities in various areas (Marriott and Sim 2015) with significant health, housing, and employment disparities (e.g. Baxter et al. 2006; Tiatia-Seath 2014; Marriott and Sim 2015; Marriott and Alinaghi 2021; Steyn et al. 2021; Prakash 2023; Reddy et al. 2023). Māori have endured colonisation that has stripped lands, language, culture and resources leaving many disadvantaged and stigmatised in their own country. Pacific peoples similarly have experienced colonising behaviours in NZ with Dawn Raids (see Etherington, 2022) targeting non-White immigrants (Fox et al. 2018) compared to other ethnic groups. Both Māori and Pacific communities share similar cultural values (Fox et al. 2018; Ministry for Pacific Peoples 2021) and youth are raised in a bicultural context (Manuela and Anae 2017; Fox et al. 2018).

Studies among NZ young people also have shown such disparities among ethnic groups. As it was recently reported by a study among NZ youth (NZ European/Other, Māori, Pacific, and Asian), Māori youth stated working more than 30 hours a week

and Pacific youth also reported a higher prevalence of caregiving for a family member or relatives in comparison with other ethnic groups (Prakash 2023). As indicated by Chappell (2007), need-based social arrangements (e.g. familial caregiving) among ethnic groups occur due to economic disadvantage. Moreover, Pacific and Māori youth were found at lower levels of emotional and mental well-being (Fleming et al. 2020a). Māori youth have been found significantly higher prevalence of engaging in risky behaviours (Spier 2016) while Asian students experience more aggressive behaviours (e.g. bullying) (Lawes and Boyd 2018). Compared to their non-Māori peers, Māori youth who were expelled from school had a higher risk of suicide and non-suicidal mortality. In detail, the rate of suicide fatalities among adolescents aged 10–24 who were excluded from school between 2012 and 2016 was found to be 42.9% for Māori youth and 21.6% for non-Māori and non-Pacific youth (Ngā Pou Arawhenua et al. 2020). Furthermore, although Māori students reported the lowest levels of well-being, Pasifika students had greater well-being than other peers (NZ European, Asian, and Other students) (Lawes and Boyd 2018). The variations in findings between the research of Flemings et al. (2020a) and Lawes and Boyd (2018) in terms of Pacific participants' well-being can be attributed to different assessment scales, with the first study employing the WHO wellbeing index and the latter use the student wellbeing scale.

Another disparity in the youth population relates to gender inequities. In a survey among young people in NZ, one in every five individuals is classified as having a gender or sexual orientation other than males and females (Prakash 2023). In this regard, Fenaughty et al. (2021) found that 16% of the participants of the Youth19 study (n = 7,721) reported being in the groups of 'same - or multiple-sex attracted, not sure, or not attracted to any sex'. These adolescents stated facing a range of challenges in their lives such as being bully-victims, limited accessibility to healthcare services, high prevalence of depression, self-harm and suicide. Compared to other respondents (different-sex attracted), they showed differences in mental health and well-being, however, a great proportion of them stated having caring families, safe neighbourhood, and a sense of belonging to their school.

Significant gaps remain in our research knowledge base in terms of NZ adolescents' differences in their positive and negative outcomes based on their diverse backgrounds. For example, in the Youth2000 Survey Series studies, the gender of participants was a binary variable of male and female, thus, the researchers recommended including other genders when studying adolescence-related determinants to clarify the differences and their needs (Fleming et al. 2022). Furthermore, research on the prevalence of developmental assets among NZ youth in a mentoring relationship is lacking. Therefore, in this study, group frequency distribution (i.e. the ranges) of participants' internal assets, external assets, misconduct behaviour, and depressive symptoms were assessed. Further, this study sought to examine to what extent NZ young people's internal and external assets, depressive symptoms, and misconduct behaviours might be different due to their demographic characteristics including their gender, ethnicity, educational and employment status. The predicting effects of internal and external assets on youth depressive symptoms and misconduct behaviours were measured as well. Such comparative research may provide a clearer perspective on youth needs and assist in developing different models of practice.

## Materials and Methods

This paper reports findings from a cross-sectional questionnaire-based study.

### *Participants*

The sample included young people who were in a mentoring relationship at least for three months. In terms of ethnicity, respondents could select more than one ethnicity, but they were asked to specify the most important to them.

### *Procedure*

Initially, this study was designed to assess youth in mentoring relationship outcomes. Data were collected through different stages. In the first phase, participants were invited to take part in a lab-based study (Deane et al. 2021). The purpose of the lab-based study was to assess the impact of mentoring relationships using online questionnaires and some activities for both mentors and mentees. The questions in the present study were also included in that online questionnaire. Thus, the current study was a subset of the bigger study, which was the lab-based study. However, the number of collected data was not satisfactory to perform statistical analysis for the purpose of this study. Therefore, in the second phase, the same link to the online anonymous questionnaire was distributed via social media (Facebook and Instagram) inviting all the eligible adolescents (between 16–18 years old and living in NZ) across NZ to participate in the research. This phase was completely separate from the lab-based study and needed another ethics approval, but the same questionnaire was used to collect more data for a quantitative analysis. Although the questionnaire was anonymous, a consent form was presented to the respondents, and they could withdraw at any time. Ethics approval was granted by the University of Auckland Human Participants Ethics Committee for both phases of data collection (References #016137 and #022200).

### *Measures*

The questionnaire included questions on participants' demographic characteristics (age, ethnicity, gender, educational and employment status, and location), The Developmental Assets Profile (DAP) (Search Institute 2005), The Adolescent Misconduct Behaviours scale (Chen et al. 1998), and The Major Depression Inventory (MDI) (Bech et al. 2001). These measures had excellent face validity and were appropriate for use with young people, which aligns with the study's goals. The Developmental Assets Profile (DAP) includes 58 total items of two internal and external categories on a four-point Likert scale ('Not at all or Rarely' to 'Extremely or Almost Always'). The school-related questions (e.g. I AM ... – Eager to do well in school and other activities) were obscured from the participants who reported not being at school. This scale can be scored as an asset view measure which creates quantitative scores for each internal and external asset by using the average of item scores. Therefore, non-student participants were not excluded from the study since the scales could be used among 11–18

years old young people, there were less than 15% missing data, and the non-student participants represent a portion of the population who cannot be overlooked. In terms of the internal consistency of the scales, acceptable Cronbach's alpha was achieved for both subscales as .90 for external assets and .88 for internal assets.

Moreover, The Adolescent Misconduct Behaviours scale included 10 items evaluating adolescents' involvement in problematic behaviours during the past six months through the subscales of antisocial behaviours (e.g. got into a fistfight, broke or damaged property on purpose) and status-violating and other behaviours (e.g. smoked a cigarette, drank alcoholic beverage). Items required a response on a four-point Likert scale ('Never' to 'More often') and a total score was used with a satisfactory Cronbach's alpha of .85. Lastly, The Major Depression Inventory (MDI) comprised 12 items (e.g. 'Have you felt low in spirits or sad?') in a Likert scale form (0 – at no time – to 5 – all the time) representing an acceptable Cronbach's alpha of .93. Total scores were used for all the scales.

### **Analysis**

For data analysis, IBM SPSS Statistics (version 29) was utilised. The normality distributions showed acceptable values of skewness and kurtosis (falling between -2 to +2 suggested by Cameron 2004; George and Mallery 2010) for each of the dependent variables that included external assets ( $M = 17.19$ ,  $SD = 5.68$ , Skewness =  $-.08$ , Kurtosis =  $-.35$ ), internal assets ( $M = 17.32$ ,  $SD = 4.11$ , Skewness =  $.08$ , Kurtosis =  $-.10$ ), misconduct behaviours ( $M = 1.64$ ,  $SD = .56$ , Skewness =  $1$ , Kurtosis =  $.42$ ), and depression ( $M = 2.52$ ,  $SD = 1.27$ , Skewness =  $.09$ , Kurtosis =  $-1.07$ ). However, the Shapiro-Wilks Normality Test revealed evidence of normality for internal assets ( $W = .99$ ,  $p = .14$ ) and external assets ( $W = .99$ ,  $p = .06$ ) while misconduct behaviours ( $W = .87$ ,  $p < .001$ ) and depression ( $W = .96$ ,  $p < .001$ ) variables were significantly non-normally distributed. As performing parametric tests typically requires a normal distribution (Williamson 2002), both parametric and non-parametric tests were applied in the analysis since major outliers of non-normal distributions were removed at earlier stages (data cleaning) for depression inventory and misconduct behaviours scales. Indeed, there were no outliers to be removed since the skewness would also move further by removing the highest or lowest scores.

In order to assess the participants' demographic differences in outcome variables (internal assets, external assets, depression, and misconduct behaviours), the parametric test of analysis of variance (ANOVA) was employed with normally distributed variables and non-parametric test of Kruskal-Wallis coupled with its post-hoc tests were used for non-normal variables (Knapp 2018). The Kruskal-Wallis one-way analysis-of-variance-by-ranks test (or  $H$  test) is a rank-sum test to assess differences in the variable of interest in more than two sample groups which uses variation among ranked sample means with no assumption of normal distribution (Chan and Walmsley 1997). This test can be used in non-normal distribution with continuous dependent variables and categorical independent variables. SPSS software provides the distribution differences between the groups and post hoc pairwise comparisons. The results should be described with an  $H$  statistic, degrees of freedom and the  $p$ -value. A pairwise comparison post hoc test helps clarify which means are significantly different by reporting the chi-square value ( $X^2$ ) and  $p$ -value (Turner 2014; Weaver et al. 2017). SPSS has the option of automatically choosing the best test for the data with a post



hoc test that provides significance values adjusted by the Bonferroni correction for multiple tests. Since this non-parametric method does not produce any confidence interval to evaluate the effect sizes, in case of significant results, it is recommended to 'discuss whether the effect size is great enough to be of practical consequence and its implications for public policy or professional practice' (Mackridge and Rowe 2018, p. 113).

However, the analysis of variance (ANOVA) requires meeting a few assumptions such as independence, normality, and homogeneity of variances (HOV) (Moder 2010). The assumption of independence was satisfactory since all the groups of respondents were independent of each other through random sampling. Regarding the HOV assumption that refers to the equality of variances between two or more groups, Levene's test is designed to evaluate the homogeneity of the variances (Morgan et al. 2004). Although the HOV is one of the required assumptions of the ANOVA test, there are other robust procedures when HOV is violated. In this study, in the case of conducting post hoc tests, Scheffé's test (1959) is conducted when HOV is met, and Welch's test (Welch 1951) is used when HOV is violated. The overall effect size of Eta squared ( $\eta^2$ ) will be reported when a significant difference between the means of the groups is reached in order to assist interpretation of the magnitude of relationships between the independent variable and the dependent variable (Kallogjeri and Piccirillo 2023). Simply put, the effect size helps to determine whether a significant difference in means is practically important or meaningful. Adams and Conway (2014) recommended interpreting threshold values for Eta squared ( $\eta^2$ ) as small (.01 to .059), medium (.06 to .139), and large effects (.14 and above) which were specified by Cohen and Cohen (1983) and advised to use in social sciences.

Furthermore, the explanatory/predictor variables of interest were the internal/external assets and the outcomes of interest were either the depressive or misconduct scores. To perform a regression analysis with non-normal data, Quantile Regression (QR) analysis developed by Koenker and Bassett (1978) is highly recommended (Hao and Naiman 2007; Laporte et al. 2010; Lê Cook and Manning 2013; Charles et al. 2018; Uribe and Guillen 2020; Cleophas and Zwinderman 2021; Schlink et al. 2022). Quantile regression evaluates the relationship between independent variable/s (predictor/s) with a dependent variable (outcome) in the form of percentile (or quantile) as an alternative to using the means (Cleophas and Zwinderman 2021). In this type of regression, mostly median or 0,5 quantile is used as the value in the middle of skewed data (Petscher 2016; Cleophas and Zwinderman 2021). In other words, instead of using the mean, the median of the distribution is used in this regression type. This regression model establishes a relationship between the percentiles of a continuous variable and a set of predictors and is free from the restrictive assumptions of other regression types (Merlo et al. 2022).

## Results

A total of 690 questionnaires were gathered, however, only 300 remained for analysis after eliminating incomplete questionnaires and cleaning the data. Table 1 illustrates the participants' characteristics. In the following sections, the results of group frequency distributions are presented. Furthermore, the statistical significance of the mean differences is assessed and presented for each demographic factor through analysis of variances

**Table 1.** Frequency distribution (n) and percentage of adolescent background.

Demographic factor		n	%
Ethnicity	Māori	69	23.0
	Pacific	44	14.7
	Asian	17	5.7
	NZ European & Others	170	56.7
Age	16	118	39.0
	17	126	42.0
	18	56	18.7
Gender	Male	36	12.0
	Female	257	85.7
	Other	7	2.3
Education Status	I am a high school student.	222	74.0
	I am a tertiary student [i.e. University, Polytechnic, or Wānanga]	36	12.0
	I am not at school.	42	14.0
Employment Status	I am employed part-time	128	42.7
	I am employed full-time	14	4.7
	I am unemployed	143	47.7
Location	Auckland	97	32.3
	Or out of Auckland	203	67.7

methods. An alpha of  $p < .05$  was applied unless otherwise indicated. In the final section, the results of regression analysis are reported.

### **Group frequency distributions**

The ranges of participants' internal and external assets, depression, and misconduct behaviours are shown in Table 2. The ranges of assets and depression inventory were calculated based on the psychometric properties of the scales. Visual binning (based on the minimum and maximum scores) was used for the scale of misconduct behaviours. In regard to mentees' internal and external assets, most of the participants were classified in fair levels of assets, whereas a few of the respondents reported high levels. According to the table, around two-fifths of the participants represented rates of major depression followed by no depressive symptoms representing the non-normal distribution. Likewise, a significant proportion of the respondents reported a low level of misconduct behaviours which is the reason for substantially left-skewed data.

**Table 2.** Group frequency distributions.

Variable	Level	n	%
Internal assets	Low	72	24.0
	Fair	160	53.3
	Good	61	20.3
	High	7	2.3
External assets	Low	94	31.3
	Fair	124	41.3
	Good	55	18.3
	High	27	9.0
Depressive symptoms	No Depression	115	38.3
	Mild	28	9.3
	Moderate	35	11.7
	Major	122	40.7
Misconduct behaviours	Low (10.00–18.66)	212	70.7
	Moderate (18.67–27.32)	68	22.7
	High (27.33+)	20	6.7

**Table 3.** Descriptive of between-group variations based on ethnicity.

		<i>n</i>	<i>M</i>	<i>SD</i>	<i>SE</i>	95% CI		Min	Max
						LB	UB		
Internal Assets	Māori	69	16.65	4.09	0.49	15.67	17.63	9	26
	Pacific	44	19.11	4.69	0.71	17.69	20.54	10	29
	Asian	17	18.82	3.99	0.97	16.77	20.87	10	25
	NZ European and others	170	16.99	3.85	0.30	16.41	17.57	5	27
	Total	300	17.33	4.12	0.24	16.86	17.79	5	29
External Assets	Māori	69	16.04	6.52	0.78	14.48	17.61	3	29
	Pacific	44	19.89	5.26	0.79	18.29	21.48	9	30
	Asian	17	18.88	3.31	0.80	17.18	20.59	14	26
	NZ European and others	170	16.79	5.39	0.41	15.98	17.61	4	30
	Total	300	17.19	5.68	0.33	16.55	17.84	3	30

Note. *SE* = Standard error; LB = lower bound; UB = upper bound; Min = Minimum; Max = Maximum

### Differences in the dependent variables based on ethnicity

Table 3 shows the descriptive of between-group variations based on participants' ethnicity and the means were tested for their significance differences. The ANOVA results showed a statistically significant effect between the groups in their external assets [ $F(3,296) = 5.23, p = .002, \eta^2 = .05; 95\% \text{ CI} (.008, .099)$ ] and internal assets [ $F(3,296) = 4.67, p = .003, \eta^2 = .04; 95\% \text{ CI} (.006, .092)$ ]. As the variances in the internal asset factor were homogenous ( $p = .32$ ), the Scheffé post hoc test showed a statistically significant difference between Pacific ( $M = 19.11, SD = 4.68$ ) and Māori ( $M = 16.65, SD = 4.09$ ) as well as NZ European & Others ( $M = 16.98, SD = 3.85$ ) respondents on the measure of internal assets. These results point to possessing more internal assets for Pacific youth in comparison with other ethnic groups of Māori and NZ European & Others. However, the effect size is small.

Because the homogeneity assumption was violated for external assets ( $p = .007$ ) meaning substantial differences in variances among groups, Welch's test was used due to unequal variances between groups. The findings revealed a statistically significant difference between the groups on their scores of external assets [ $F_W(3,67.43) = 5.99, p = .001; 95\% \text{ CI} (4.32, 7.26)$ ] between Pacific youth ( $M = 19.88, SD = 5.25$ ) and Māori respondents ( $M = 16.04, SD = 6.52; 95\% \text{ CI} (4.32, 7.26)$ ). However, the effect's magnitudes are small for participants' external assets.

The results of Kruskal-Wallis test for non-normally distributed variables of depression and misconduct behaviours revealed no significant differences in the distribution of depression across all ethnic categories ( $p = .09$ ). However, the distribution of misconduct behaviours was not the same across categories of ethnicity with significant differences ( $H(3) = 43.71, p < .001$ ) with a mean rank misconduct behaviours score of 204.10 for Māori,

**Table 4.** Pairwise Comparisons of risk behaviours based on ethnicity.

Sample 1-Sample 2	$\chi^2$	Adj. <i>p</i>
Asian-Pacific	36.01	.86
Asian-NZ European and others	-60.12	.03
Asian-Māori	120.71	0
Pacific-NZ European and others	-24.10	.59
Pacific-Māori	84.70	0
NZ European and others-Māori	60.59	0

Note. The significance level is .050. Significance values are adjusted by the Bonferroni correction for multiple tests.

**Table 5.** Descriptive of between-group variations based on gender.

		n	M	SD	SE	95% CI		Min	Max
						LB	UB		
Internal Assets	Male	36	17.89	4.77	0.79	16.28	19.50	5	27
	Female	257	17.31	4.03	0.25	16.81	17.80	7	29
	Other	7	15.14	3.44	1.30	11.96	18.32	12	22
	Total	300	17.33	4.12	0.24	16.86	17.79	5	29
External Assets	Male	36	17.19	5.29	0.88	15.40	18.98	7	29
	Female	257	17.25	5.75	0.36	16.55	17.96	3	30
	Other	7	15.00	5.29	2.00	10.11	19.89	6	20
	Total	300	17.19	5.68	0.33	16.55	17.84	3	30

Note. SE = Standard error; LB = lower bound; UB = upper bound; Min = Minimum; Max = Maximum

119.40 for Pacific, 143.51 for NZ European & Others, and 83.38 for Asians. Based on Table 4, the post hoc test revealed higher ranks of misconduct behaviours for NZ Europeans and others when compared to Asians ( $X^2 = -60.12, p = .03$ ). Similarly, Māori participants reported higher rank of misconduct behaviours in comparisons with Asians ( $X^2 = 120.71, p = .00$ ), Pacific ( $X^2 = 84.70, p = .00$ ), and NZ European and others ( $X^2 = 60.59, p = .00$ ) participants. Following the recommendation made by Mackridge and Rowe (2018), we may consider a small effect size between groups in their misconduct behaviours since the majority of the participants reported a low range of misconduct behaviours (70.7%).

**Differences in the dependent variables based on gender**

Table 5 shows the descriptive of between-group variations based on participants’ gender (female, male, and Other) and the means were tested for their significance differences. Variances were homogeneous for internal asset ( $p = .25$ ) and external asset ( $p = .85$ ) scores for all genders, as assessed by Levene’s test for equality of variances. However, ANOVA results showed that there were no significant main effects between the groups (male, female, and other) in their external assets [ $F(2,297) = .53, p = .58; 95\% \text{ CI } (.0, .02)$ ] and internal assets [ $F(2,297) = 1.32, p = .26; 95\% \text{ CI } (.0, .03)$ ].

The Kruskal-Wallis H test showed no significant differences in misconduct behaviours between different gender groups ( $H(3) = .84, p = .65$ ). However, there was a statistically significant difference in depression score between groups ( $H(3) = 8, p = .01$ ) with a mean rank depression score of 182.86 for Other, 154.75 for females, and 113.90 for males. As Table 6 shows, the post hoc test revealed higher ranks of depression for females compared to males ( $X^2 = -40.84, p = .02$ ). In terms of the effect size, we consider a small effect size between groups of females and males in their depressive symptoms given that females typically report higher scores, and the sample of this study is female-oriented (females = 85.7%).

**Differences in the dependent variables based on education status**

Table 7 displays the descriptive of between-group variations based on participants’ educational level (High school student, Tertiary student, and Not at school) and the means were tested for their significance differences. The assumption of homogeneity of variance was met for dependent variables of external assets ( $p = .16$ ) and internal assets ( $p = .28$ ) for categories of education status. The ANOVA results of respondents’ average score on

**Table 6.** Pairwise Comparisons of misconduct behaviours based on gender.

Sample 1-Sample 2	$\chi^2$	Adj. <i>p</i>
Male-Female	-40.84	0.02
Male-Other	-68.95	0.16
Female-Other	-28.11	1

Note. The significance level is .050. Significance values are adjusted by the Bonferroni correction for multiple tests.

**Table 7.** Descriptive of between-group variations based on educational level.

		<i>n</i>	<i>M</i>	<i>SD</i>	<i>SE</i>	95% CI		Min	Max
						LB	UB		
Internal Assets	High school student	222	17.47	4.13	0.28	16.92	18.01	5	28
	Tertiary student	36	18.72	4.10	0.68	17.34	20.11	10	29
	Not at school	42	15.38	3.42	0.53	14.31	16.45	7	24
	Total	300	17.33	4.12	0.24	16.86	17.79	5	29
External Assets	High school student	222	17.46	5.34	0.36	16.75	18.16	4	29
	Tertiary student	36	18.75	6.67	1.11	16.49	21.01	4	30
	Not at school	42	14.48	5.79	0.89	12.67	16.28	3	27
	Total	300	17.19	5.68	0.33	16.55	17.84	3	30

Note. *SE* = Standard error; LB = lower bound; UB = upper bound; Min = Minimum; Max = Maximum

the measure of external assets [ $F(2,297) = 6.62, p = .002, \eta^2 = .04; 95\% \text{ CI} (.007, .092)$ ] and internal assets [ $F(2,297) = 7.16, p < .001, \eta^2 = .04; 95\% \text{ CI} (.008, .096)$ ] revealed a statistically significant main effect regarding their education status. Following the post hoc test on the measure of external assets, respondents who were not attending a school ( $M = 14.47, SD = 5.79$ ) reported statistically significant differences with their peers who were at high school ( $M = 17.45, SD = 5.34$ ) or tertiary institutions ( $M = 18.75, SD = 6.67$ ). Likewise, on the measure of internal assets, the group of participants who reported not being a student showed a statistically significant difference ( $M = 15.38, SD = 3.42$ ) when compared with high school students ( $M = 17.46, SD = 4.13$ ) and tertiary students ( $M = 18.72, SD = 4.09$ ). However, the effect size, calculated as eta squared ( $\eta^2$ ), uncovered small effects for each of the developmental assets. In a further analysis, it was revealed that non-student respondents were mostly 17 years old (42.86%), followed by 18 years old (35.71%), and then 16 years old (21.43%).

The Kruskal-Wallis *H* test showed no significant differences in depression scores between different groups ( $H(2) = 4.81, p = .09$ ). However, there was a statistically significant difference in misconduct behaviours scores between groups ( $H(2) = 26.94, p < .001$ ) with a mean rank misconduct behaviours score of 214.38 for non-students, 141.06 for high school students, and 134.21 for tertiary students. According to Table 8, the post hoc test revealed higher ranks of misconduct behaviours for non-students compared to tertiary students ( $X^2 = -80.17, p = .00$ ) and high school students ( $X^2 = -73.32, p = .00$ ). In terms of the effect size, we consider a small effect between groups of non-students and other participants since most participants reported low levels of misconduct behaviours.

**Table 8.** Pairwise Comparisons of misconduct behaviours based on educational level.

Sample 1-Sample 2	$\chi^2$	Adj. <i>p</i>
Tertiary student - High school student	6.848	1
Tertiary student - Non-students	-80.173	0
High school student - Non-students	-73.325	0

Note. The significance level is .050. Significance values are adjusted by the Bonferroni correction for multiple tests.

**Table 9.** Descriptive of between-group variations based on employment status.

		<i>n</i>	<i>M</i>	<i>SD</i>	<i>SE</i>	95% CI		Min	Max
						LB	UB		
Internal Assets	Employed part-time	128	17.20	4.17	0.37	16.47	17.92	7	29
	Employed full-time	14	15.29	3.69	0.99	13.16	17.42	10	24
	Unemployed	143	17.22	3.95	0.33	16.57	17.88	5	28
	Total	285	17.12	4.04	0.24	16.64	17.59	5	29
External Assets	Employed part-time	128	16.91	5.59	0.49	15.93	17.88	4	30
	Employed full-time	14	14.43	6.31	1.69	10.79	18.07	6	24
	Unemployed	143	17.31	5.74	0.48	16.37	18.26	3	29
	Total	285	16.99	5.71	0.34	16.32	17.66	3	30

Note. *SE* = Standard error; LB = lower bound; UB = upper bound; Min = Minimum; Max = Maximum

**Table 10.** Pairwise Comparisons of misconduct behaviours based on employment status.

Sample 1-Sample 2	$\chi^2$	Adj. <i>p</i>
Employed part-time – Unemployed	–3.86	1
Employed part-time – Employed full-time	–68.85	0.009
Unemployed – Employed full-time	64.99	0.014

Note. The significance level is .050. Significance values are adjusted by the Bonferroni correction for multiple tests.

### **Differences of dependent variables based on employment status**

Mean distributions based on participants’ employment status (Employed part-time, Employed full-time, Unemployed) in Table 9 were subjected to ANOVA analysis. The assumption of homogeneity of variance was met for external assets ( $p = .63$ ) and internal assets ( $p = .83$ ) scores for categories of employment status. However, The ANOVA analysis then identified no statistically significant differences for external assets [ $F(2,282) = 1.66, p = .19; 95\% CI (.0, .04)$ ], internal assets [ $F(2,282) = 1.51, p = .22; 95\% CI (.0, .04)$ ].

The results of the Kruskal-Wallis H test revealed no significant differences in depression scores between different groups ( $H(2) = 5.34, p = .06$ ). However, there was a statistically significant difference in misconduct behaviours scores between groups ( $H(2) = 8.96, p = .01$ ) with a mean rank misconduct behaviours score of 206.54 for employed full-time, 141.54 for unemployed, and 137.68 for part-time employed participants. As shown in Table 10, the post hoc test revealed higher ranks of misconduct behaviours for full-time employed participants in comparison with part-time employed ( $\chi^2 = -68.85, p = .009$ ) and unemployed participants ( $\chi^2 = 64.99, p = .014$ ). We count a small effect of differences between groups as most participants reported low levels of misconduct behaviours.

### **Regression analysis result**

As noted earlier, a regression analysis was performed to determine the prediction effect of youth internal and external assets on their depressive symptoms and misconduct behaviours. For this purpose, quantile regression was employed, however, in this type of regression, only one outcome (dependent) variable should be entered into the model. Therefore, two quantile regression analyses were conducted and the first output for quantile regression is Model quality (or model fit) represented by Pseudo R Squared (pseudo  $R^2$ ). The pseudo  $R^2$  of 0.16 for QR-50 (i.e. quantile regression at the .50 quantile)

**Table 11.** Regression results for variables predicting depression and risk behaviour at the .50 quantile.

Outcome	Predictor	Coefficient	SE	t	p	95% CI	
						LB	UB
Depression	Intercept	53.33	4.14	12.88	<.001	45.18	61.48
	External assets	-.90	.20	-4.43	<.001	-1.30	-.50
	Internal Assets	-.76	.28	-2.70	.007	-1.31	-.20
Misconduct Behaviours	Intercept	24.81	1.69	14.66	<.001	21.48	28.14
	External assets	-.40	.08	-4.81	<.001	-.56	-.23
	Internal Assets	-.18	.11	-1.58	.11	-.40	.04

Note. SE = Standard error; LB = lower bound; UB = upper bound. Significant level =  $p < .05$

shows that 16% of the variation in the values of depression can be explained by internal and external assets. Similarly, the pseudo  $R^2$  of 0.13 for QR-50 shows that 13% of the variation in the values of misconduct behaviours can be explained by internal and external assets. The results in Table 11 reveal that youth depression can be significantly predicted by external assets ( $\beta = -.90$ ,  $S.E = .20$ ,  $p = <.001$ ; 95% CI [-1.30, -.50]) and internal assets ( $\beta = -.76$ ,  $S.E = .28$ ,  $p = <.001$ ; 95% CI [-1.31, -.20]). Likewise, external assets significantly contribute to youth misconduct behaviours ( $\beta = -.40$ ,  $S.E = .08$ ,  $p = <.001$ ; 95% CI [-.56, -.23]) while there is no such predicting effect for internal assets ( $\beta = -.18$ ,  $S.E = .11$ ,  $p = .11$ ; 95% CI [-.40, .04]).

## Discussion

The paper makes two important contributions. First, we found how NZ youth who were in a mentoring relationship reported different levels of developmental assets, depressive symptoms, and misconduct behaviours based on their demographic factors. Most participants reported possessing low to fair levels of developmental assets and lower levels of engagement in misconduct behaviours which can be consistent with recent findings on a great decline in youth risk-taking and offence (Lewycka et al. 2018; Polglase and Lambie 2024). In terms of depressive symptoms, the study's sample had a high prevalence of the disorder, which is in accordance with previous research (Fleming et al. 2013; Fleming et al. 2020a). This is a concerning finding even though the majority of individuals were female, who may be more prone to depressive symptoms.

Given NZ's rising ethnic and cultural diversity, there is a growing need to identify the areas that minimise the effect of demographic disparities, since they are the primary way of determining equity in providing support and services for adolescents. In this sense, the findings of this study showed that Pacific youth significantly outperformed their counterparts in possessing more developmental assets. This might be the reason for having higher levels of student well-being in the research carried out by Lawes and Boyd (2018) since most current respondents were also students. Although Pacific youth are from families with low resources in the community, the higher levels of possessing more developmental assets seem to lie in their cultural values such as living collectively and belonging to a caring, loving, and respectful community as well as being included in decision makings and religious practices (Ministry for Pacific Peoples 2021). These cultural values may assist young people in receiving more external assets (e.g. support from families and their communities, feeling valued, involvement in programmes or religious events, and being taught boundaries and expectations) in comparison to their peers. In turn, youth can flourish and focus on their internal assets or

capacities including motivation for learning, planning and decision-making, and have a more positive identity and values than their other peers. Nonetheless, racial differences in developmental assets were found at a relatively small value.

The higher prevalence of depression among female youth is consistent with previous findings (e.g. Windfuhr et al. 2008; Ferrari et al. 2013; Joinson et al. 2016; Salk et al. 2017; Milot Travers and Mahalik 2021). Other determinants such as education and employment status had significant effects as well. According to the findings and in agreement with the prior studies (e.g. Tresidder et al. 1997; Manlove 1998; Esch et al. 2014; Hjorth et al. 2016; Gubbels et al. 2019), adolescents who were not attending schools reported higher prevalence of risk behaviours and lower developmental assets than their student peers. Likewise, according to a prior study (Staff et al. 2020), full-time workers reported a higher prevalence of misconduct behaviours than unemployed and part-time employed peers. Once more, these variations are minimal, and ideally, most participants reported less misconduct behaviours.

The second contribution of this study implies the predicting role of developmental assets in youth depressive symptoms and misconduct behaviours. The current findings are partially consistent with earlier research (e.g. Catalano et al. 2002; Benson et al. 2006; Benson et al. 2011; Bleck and DeBate 2016) regarding the predictive role of developmental assets in reduced depression and misconduct behaviours. These studies suggest that enhancing developmental assets can lower the likelihood of engaging in misconduct behaviours and depression. The results of this study, however, point to the possibility that both internal and external may help reduced depressive symptoms but that only external assets might be useful in lowering misconduct behaviours. This result could imply the significance of the youth's environment and its impacts on their willingness to take risks.

### ***Implications for practice***

Research and empirical studies suggest that identifying and fostering contextual and individual factors that support the development of young people's internal and external assets should be the core of programmes for youth. The way the assets are conceptualised highlights the importance of communities in fostering positive development and youth well-being (Lerner et al. 2013). Implications for practice based on current findings provide more evidence for improving youth developmental assets to promote their well-being, reduce depressive symptoms and prevent problem behaviours. Evidence-based, non-punitive strategies (Farrington et al. 2022) along with appropriate resource allocation are required for behavioural and emotional concerns, particularly for Māori and young people not engaged in education, employment or training. Funding culturally appropriate long-term and short-term youth development programmes that promote a strong sense of cultural identity, whānau/parental involvement, and inclusive community connections are required (Fox et al., 2018; Atkin and Yoo 2020; Billingsley et al. 2021; Byrd and Legette 2022).

It is important to recognise that emotional and behavioural problems are part of the much bigger context. Children and young people growing up in poverty, whose families have been treated unfairly by systems (e.g. school, police, employers, welfare, immigration), who have been discriminated against (Smith et al. 2021), have intergenerational trauma – do not have the same opportunities to thrive. In addition, individual factors like disability (Clark et al. 2021), learning problems (Roy et al. 2020), and experiencing



child protection services (Rouland et al. 2019) can erode the developmental assets of children and young people. Adequate strategies to intervene early and address the unmet health and educational needs of children are required (Trempe and Lewis 2018) to give them the best possible start in life.

As discussed in the earlier sections, mentoring relationships and positive youth development hold great promise for the emotional and behavioural outcomes for youth who lack assets and support systems in their lives. Since current participants were in a mentoring relationship hold great promise for emotional and behavioural outcomes for youth who lack assets and support systems in their lives. Since current participants were in a mentoring relationship, mentors can support their mentees through improving the youth's social-emotional, cognitive, and identity development (Rhodes, 2005). Mentors and youth programme staff/leaders can consider promoting youth skills that help reduce negative outcomes while increasing more favourable outcomes. In this sense, youth development programmes that focus on mātauranga Māori (Māori knowledge) (Hikuroa 2017) in the context of mentoring relationships – such as the Tuākana/Teina (older-younger mentoring) Water Warriors Project – have the potential to enhance youth's empowerment and contributions by peer-mentoring and integrating Māori and western perspectives (Callaghan et al. 2018). Similarly, youth programmes that involve Māori and other racial groups, such as the programme demonstrated by Arahanga-Doyle et al. (2018) in the form of seven days of sail training for Māori and NZ European adolescents, can create a context for developing a social/collective identity among adolescents that leads to increased resiliency.

### ***Limitations and future directions***

Youth in this study were in a mentoring relationship that limits the generalising of the findings to all youth in NZ. We were unable to report the individual backgrounds and pathways for participants who have high and low levels of assets and any impacts (or not) of mentoring. Furthermore, the small age range of the included participants (16-18 years old) may restrict generalisability to the mentored population. The questions of Developmental Assets Profile (DAP) which were hidden from the non-student participants who reported not being at school might impact scores. To further clarify, another method of rating this scale is based on the context view (e.g. personal, social, family, school, and community), which might demonstrate the significance of educational settings in youth development. Therefore, non-student participants' poorer developmental assets may be the basis of their discrepancies with their student peers. Notably, while the current analysis points towards important subgroups that may need to be targeted, analyses are unadjusted for potential confounding by or collinearity with the other demographic (and unmeasured) factors that may explain the link.

Moreover, this study was a cross-sectional study, many mentoring relationships may terminate at any time. Longitudinal studies may better capture the impact of being in a mentoring relationship on youth outcomes. Furthermore, the current sample included more female participants who were in mentoring relationships and were typically at higher risk of depressive symptoms. This might have an impact on the ranges of youth outcomes presented in Table 2 and other findings. Moreover, we also did not ask about gender-diverse or same-sex-attracted youth.

As cultural identity may play a significant role in positive youth development in multi-ethnic contexts such as NZ, future studies may consider investigating this variable as a predictor or mediator variable in their analysis. For instance, how positive identity may mediate the effect of mentoring relationships on youth misconduct behaviours. Furthermore, another gap which needs further exploration is to identify the factors that prohibit youth from attending school and situations that force them to work full-time. If these populations' needs and challenges can be adequately addressed, there will be more potential to impact practice and change policy. Additionally, future studies are highly recommended to focus on Māori youth's contextual and individual assets with a central focus on bolstering assets, support systems and strategies that emphasise strengths. The differences between youth in developmental assets and risk behaviours also need further research and deeper exploration (e.g. each asset and its link to risk-taking such as positive values and risk-taking). Finally, the sample of this study was relatively small and future studies may consider a larger sample size.

## Acknowledgements

We thank the young people who participated in this study. Special thanks to the Search Institute for kindly waiving the service charge for the Developmental Assets assessment tool. And we appreciate all the reviewers' comments and feedback.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## ORCID

Atefeh Kiadarbandsari  <http://orcid.org/0000-0002-0011-5049>

Fuafiva Fa'alau  <https://orcid.org/0000-0001-7202-0367>

## References

- Adams MA, Conway TL. 2014. Eta squared. In: Michalos AC, editor. *Encyclopaedia of quality of life and well-being research*. Dordrecht: Springer; p. 1965–1966.
- Arahanga-Doyle H, Moradi S, Brown K, Neha T, Hunter JA, Scarf D. 2018. Positive youth development in Māori and New Zealand European adolescents through an adventure education programme. *Kōtuitui: New Zealand Journal of Social Sciences Online*. 14(1):38–51. doi:10.1080/1177083X.2018.1508479.
- Atkin AL, Yoo HC. 2020. Patterns of racial-ethnic socialization in Asian American families: associations with racial-ethnic identity and social connectedness. *Journal of Counseling Psychology*. doi:10.1037/cou0000435.
- Atkins LA, Oman RF, Vesely SK, Aspy CB, McLeroy K. 2002. Adolescent tobacco use: the protective effects of developmental assets. *American Journal of Health Promotion*. 16(4):198–205. doi:10.4278/0890-1171-16.4.198.
- Baxter J, Kokaua J, Wells JE, McGee MA, Oakley Browne MA. 2006. Ethnic comparisons of the 12 month prevalence of mental disorders and treatment contact in Te Rau Hinengaro: the New Zealand mental health survey. *Australian & New Zealand Journal of Psychiatry*. 40(10):905–913. doi:10.1080/j.1440-1614.2006.01910.x.

- Bech P, Rasmussen NA, Olsen LR, Noerholm V, Abildgaard W. 2001. The sensitivity and specificity of the Major Depression Inventory, using the present state examination as the index of diagnostic validity. *Journal of Affective Disorders*. 66(2-3):159–164. doi:10.1016/S0165-0327(00)00309-8.
- Benson PL. 1997. All kids are our kids: what communities must do to raise caring and responsible children and adolescents. San Francisco, CA : Jossey-Bass.
- Benson PL. 2007. Developmental assets: an overview of theory, research, and practice. In: Silbereisen RK, Lerner RM, editors. *Approaches to positive youth development*. Thousand Oaks, CA: SAGE; p. 33–58.
- Benson PL. 2008. Sparks: how parents can help ignite the hidden strengths of teenagers. San Francisco, CA : Jossey-Bass.
- Benson PL, Scales PC, Hamilton SF, Sesma A Jr. 2006. Positive youth development: theory, research, and applications. In: Lerner RM, Damon W, editors. *Handbook of child psychology: theoretical models of human development*. Chichester: John Wiley & Sons; p. 894–941.
- Benson PL, Scales PC, Syvertsen AK. 2011. The contribution of the developmental assets framework to positive youth development theory and practice. *Positive Youth Development*. 41:197–230. doi:10.1016/B978-0-12-386492-5.00008-7.
- Billingsley JT, Rivens AJ, Hurd NM. 2021. Family closeness and mentor formation among black youth. *Journal of Child and Family Studies*. 30(3):793–807. doi:10.1007/s10826-020-01895-y.
- Bleck J, DeBate R. 2016. Long-term association between developmental assets and health behaviors. *Health Education & Behavior*. 43(5):543–551. doi:10.1177/1090198115606915.
- Bowers EP, Geldhof GJ, Johnson SK, Hilliard LJ, Hershberg RM, Lerner JV, Lerner RM. 2015a. *Promoting positive youth development: lessons from the 4-H study*. Cham: Springer International Publishing.
- Bowers EP, Johnson SK, Warren DJ, Tirrell JM, Lerner JV. 2015b. Youth–adult relationships and positive youth development. In: Bowers EP, Geldhof GJ, Johnson SK, Hilliard LJ, Hershberg RM, Lerner JV, Lerner RM, editors. *Promoting positive youth development: lessons from the 4-H study*. Cham: Springer; p. 97–120.
- Bozzini AB, Bauer A, Maruyama J, Simões R, Matijasevich A. 2020. Factors associated with risk behaviors in adolescence: a systematic review. *Brazilian Journal of Psychiatry*. 43(2). doi:10.1590/1516-4446-2019-0835.
- Byrd CM, Legette KB. 2022. School ethnic–racial socialization and adolescent ethnic–racial identity. *Cultural Diversity and Ethnic Minority Psychology*. 28(2). doi:10.1037/cdp0000449.
- Callaghan P, Paraone R, Murray M, Tahau N, Edgerton S, Bates E, Ataria E, Heremaia H, Rupene N, Wilson E, Hanham L. 2018. Tuākana/Teina water warriors project: a collaborative learning model integrating mātauranga Māori and science. *New Zealand Journal of Marine and Freshwater Research*. 52(4):666–674. doi:10.1080/00288330.2018.1509880.
- Cameron A. 2004. Kurtosis. In: Lewis-Beck MS, Bryman A, Liao TF, editors. *The Sage encyclopedia of social science research methods*. Thousand Oaks: Sage; p. 544–545.
- Catalano RF, Berglund ML, Ryan JAM, Lonczak HS, Hawkins JD. 2004. Positive youth development in the United States: research findings on evaluations of positive youth development programs. *The Annals of the American Academy of Political and Social Science*. 591:98–124. doi:10.1177/0002716203260102.
- Catalano RF, Hawkins JD, MLisa B, Pollard JA, Arthur MW. 2002. Prevention science and positive youth development: competitive or cooperative frameworks? *Journal of Adolescent Health*. 31(6):230–239. doi:10.1016/S1054-139X(02)00496-2.
- Chan Y, Walmsley RP. 1997. Learning and understanding the Kruskal-Wallis one-way analysis-of-variance-by-ranks test for differences among three or more independent groups. *Physical Therapy*. 77(12):1755–1761. doi:https://doi.org/10.1093/ptj/77.12.1755.
- Chappell NL. 2007. Ethnicity and quality of life. In: Mollenkopf H, Walker A, editors. *Quality of life in old age*. Netherlands: Springer; p. 179–194.
- Charles A, Dang R, Redor E. 2018. Board gender diversity and firm financial performance: a quantile regression analysis. In: John K, Makhija AK, Ferris SP, editors. *International corporate governance and regulation* (Vol. 20, pp. 15–55). United Kingdom: Emerald Publishing Limited; p. 15–55. [accessed 2023 Nov 25]. <http://www.jstor.org/stable/4127638>.

- Chen C, Greenberger E, Lester J, Dong Q, Guo M-S. 1998. A cross-cultural study of family and peer correlates of adolescent misconduct. *Developmental Psychology*. 34(4):770–781. doi:10.1037/0012-1649.34.4.770.
- Clark T, Sutcliffe K, Greaves L, Roy R, DaRocha M, Fleming T. 2021. A Youth19 brief: rangatahi Māori with a disability or chronic condition. Youth19. Research Group.
- Clark TC, Ball J, Fenaughty J, Drayton B, Fleming TT, Rivera-Rodriguez C, Le Grice J, Peiris-John R, Bavin LM, Schwencke A, et al. 2022. Indigenous adolescent health in Aotearoa New Zealand: trends, policy and advancing equity for rangatahi Maori, 2001–2019. *The Lancet Regional Health – Western Pacific*. 28:100554. doi:10.1016/j.lanwpc.2022.100554.
- Cleophas TJ, Zwinderman AH. 2021. Quantile regression. In: *Regression analysis in medical research*. Cham: Springer; p. 453–467.
- Cohen J, Cohen P. 1983. *Applied multiple regression/correlation analysis for the behavioral sciences*. 2nd ed. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Damon W. 2008. *The path to purpose: helping our children find their calling in life*. New York: Free Press.
- Damon W, Menon J, Cotton Bronk K. 2003. The development of purpose during adolescence. *Applied Developmental Science*. 7(3):119–128. doi:10.1207/S1532480XADS0703\_2.
- Deane K, Dutton H, Overall N, Bullen P, Pryce J. 2021. The youth-adult partnerships observation study: research rationale, protocol, and procedures, version 3 [Unpublished manual]. University of Auckland.
- Denny S, Lewycka S, Utter J, Fleming T, Peiris-John R, Sheridan J, Rossen F, Wynd D, Teevale T, Bullen P, et al. 2016. The association between socioeconomic deprivation and secondary school students' health: findings from a latent class analysis of a national adolescent health survey. *International Journal for Equity in Health*. 15(1). doi:10.1186/s12939-016-0398-5.
- DeWit DJ, DuBois D, Erdem G, Larose S, Lipman EL. 2016. The role of program-supported mentoring relationships in promoting youth mental health, behavioral and developmental outcomes. *Prevention Science*. 17(5):646–657. doi:https://doi.org/10.1007/s11211-016-0663-2.
- Donnellan MB, Trzesniewski KH, Robins RW, Moffitt TE, Caspi A. 2005. Low self-esteem is related to aggression, antisocial behavior, and delinquency. *Psychological Science*. 16(4):328–335. doi:10.1111/j.0956-7976.2005.01535.x.
- Dunajeva J. 2021. Youth development, education, and identity. In: Dimitrova R, Sam DL, Ferrer-Wreder L, editors. *Roma minority youth across cultural contexts: taking a positive approach to research, policy, and practice*. New York, NY: Oxford University Press; p. 156–174.
- Esch P, Bocquet V, Pull C, Couffignal S, Lehnert T, Graas M, Fond-Harmant L, Anseau M. 2014. The downward spiral of mental disorders and educational attainment: a systematic review on early school leaving. *BMC Psychiatry*. 14(237). doi:10.1186/s12888-014-0237-4.
- Etherington B. 2022. “I think I believe in civil rights”: re-remembering Trans-Indigenous Political Activism in Pauline Vaeluaga Smith's *Dawn Raid*. *Studies in the Novel*. 54(3):293–311. doi:10.1353/sdn.2022.0024.
- Farrington DP, Gaffney H, White H. 2022. Effectiveness of 12 types of interventions in reducing juvenile offending and antisocial behaviour. *Canadian Journal of Criminology and Criminal Justice*. 64(4):47–68. doi:10.3138/cjccj.2022-0022.
- Farruggia SP, Bullen P, Solomon F, Collins E, Dunphy A. 2011. Examining the cultural context of youth mentoring: a systematic review. *The Journal of Primary Prevention*. 32(5-6):237–251. doi:10.1007/s10935-011-0258-4.
- Fenaughty J, Sutcliffe K, Clark T, Ker A, Lucassen M, Greaves L, Fleming T. 2021. A Youth19 brief: same- and multiple-sex attracted students. Youth19 Research Group. <https://www.youth19.ac.nz/publications/same-and-multiple-sex-attracted-studentsbrief>.
- Ferrari AJ, Somerville AJ, Baxter AJ, Norman R, Patten SB, Vos T, Whiteford HA. 2013. Global variation in the prevalence and incidence of major depressive disorder: a systematic review of the epidemiological literature. *Psychological Medicine*. 43(3):471–481. doi:10.1017/S0033291712001511.
- Filbert KM, Flynn RJ. 2010. Developmental and cultural assets and resilient outcomes in first nations young people in care: an initial test of an explanatory model. *Children and Youth Services Review*. 32(4):560–564. doi:10.1016/j.childyouth.2009.12.002.

- Fleming T, Ball J, Bavin L, Rivera-Rodriguez C, Peiris-John R, Crengle S, Sutcliffe K, Lewycka S, Archer D, Clark TC. 2022. Mixed progress in adolescent health and wellbeing in Aotearoa New Zealand 2001–2019: a population overview from the Youth2000 survey series. *Journal of the Royal Society of New Zealand*. 52(4):426–449. doi:10.1080/03036758.2022.2072349.
- Fleming T, Ball J, Kang K, Sutcliffe K, Lambert M, Peiris-John R, Clark T. 2020b. Youth19: youth voice brief. The Youth19 research group, Wellington. <https://www.youth19.ac.nz/publications/2020/8/12/youth19-youth-voice-brief>.
- Fleming TM, Clark T, Denny S, Bullen P, Crengle S, Peiris-John R, Robinson E, Rossen FV, Sheridan J, Lucassen M. 2013. Stability and change in the mental health of New Zealand secondary school students 2007–2012: results from the national adolescent health surveys. *Australian & New Zealand Journal of Psychiatry*. 48(5):472–480. doi:<https://doi.org/10.11770004867413514489>.
- Flemming T, Tiatia-Seath J, Peiris-John R, Sutcliffe K, Archer D, Bavin L, Crengle S, Clark T. 2020a. Youth19 rangatahi smart survey: initial findings: Hauora Hinengaro: emotional and mental health (Youth2000 survey series). The Youth19 research group, The University of Auckland and Victoria University of Wellington, New Zealand. <https://static1.squarespace.com/static/5bdbb75ccef37259122e59aa/t/5f338e4cfb539d2246e9e5ce/1597214306382/Youth19+Mental+Health+Report.pdf>.
- Fox R, Neha T, Jose PE. 2018. Tū Māori Mai: Māori cultural embeddedness improves adaptive coping and wellbeing for Māori adolescents. *New Zealand Journal of Psychology (Online)*. 47(2):14–24. <https://www.psychology.org.nz/journal-archive/Cultural-Emeddeness-Improves-Coping-and-Wellbeing.pdf>.
- Fulkerson JA, Story M, Mellin A, Leffert N, Neumark-Sztainer D, French SA. 2006. Family dinner meal frequency and adolescent development: relationships with developmental assets and high-risk behaviors. *Journal of Adolescent Health*. 39(3):337–345. doi:10.1016/j.jadohealth.2005.12.026.
- Geldhof GJ, Bowers EP, Mueller MK, Napolitano CM, Callina KS, Walsh KJ, Lerner JV, Lerner RM. 2015. The five Cs model of positive youth development. In: Bowers EP, Geldhof GJ, Johnson SK, Hilliard LJ, Hershberg RM, Lerner JV, Lerner RM, editors. *Promoting positive youth development: lessons from the 4-H study*. Cham: Springer; p. 161–186.
- George D, Mallery P. 2010. *SPSS for Windows step by step: a simple guide and reference*, 17.0 update. Boston: Allyn & Bacon.
- Gubbels J, van der Put CE, Assink M. 2019. Risk factors for school absenteeism and dropout: a meta-analytic review. *Journal of Youth and Adolescence*. 48(9):1637–1667. doi:10.1007/s10964-019-01072-5.
- Hao L, Naiman DQ. 2007. Quantiles and quantile functions. In: *Quantile regression*. Thousand Oaks: SAGE Publications, Inc.; p. 7–22.
- Hasler G, Pine DS, Kleinbaum DG, Gamma A, Luckenbaugh D, Ajdacic V, Eich D, Rössler W, Angst J. 2005. Depressive symptoms during childhood and adult obesity: the Zurich Cohort Study. *Molecular Psychiatry*. 10(9):842–850. doi:10.1038/sj.mp.4001671.
- Heinze HJ, Jozefowicz DMH, Toro PA. 2010. Taking the youth perspective: assessment of program characteristics that promote positive development in homeless and at-risk youth. *Children and Youth Services Review*. 32(10):1365–1372. doi:10.1016/j.chilyouth.2010.06.004.
- Highfield C, Webber M, Woods R. 2023. Te Pa Harakeke: Māori and non-Māori parent (whānau) support of culturally responsive teaching pedagogies. *The Australian Journal of Indigenous Education*. 52(1):1–17. doi:10.55146/ajie.v52i1.335.
- Hikuroa D. 2017. Mātauranga Māori—the ūkaipō of knowledge in New Zealand. *Journal of the Royal Society of New Zealand*. 47(1):5–10. doi:<https://doi.org/10.108003036758.2016.1252407>.
- Hjorth CF, Bilgrav L, Frandsen LS, Overgaard C, Torp-Pedersen C, Nielsen B, Bøggild H. 2016. Mental health and school dropout across educational levels and genders: a 4.8-year follow-up study. *BMC Public Health*. 16(1). doi:10.1186/s12889-016-3622-8.
- Joinson C, Kounali D, Lewis G. 2016. Family socioeconomic position in early life and onset of depressive symptoms and depression: a prospective cohort study. *Social Psychiatry and Psychiatric Epidemiology*. 52(1):95–103. doi:<https://doi.org/10.1007/s00127-016-1308-2>.
- Jose PE, Pryor J. 2010. New Zealand youth benefit from being connected to their family, school, peer group and community. *Youth Studies Australia*. 29(4):30–37.

- Kallogjeri D, Piccirillo JF. 2023. A simple guide to effect size measures. *JAMA Otolaryngology–Head & Neck Surgery*. 149(5):447–451. doi:<https://doi.org/10.1001/jamaoto.2023.0159>.
- Keenan-Miller D, Hammen CL, Brennan PA. 2007. Health outcomes related to early adolescent depression. *Journal of Adolescent Health*. 41(3):256–262. doi:[10.1016/j.jadohealth.2007.03.015](https://doi.org/10.1016/j.jadohealth.2007.03.015).
- Knapp H. 2018. *Intermediate statistics using SPSS*. Thousand Oaks, CA: SAGE Publications, Inc.
- Koenker R, Bassett G. 1978. Regression quantiles. *Econometrica*. 46(1):33–50. doi:[10.2307/1913643](https://doi.org/10.2307/1913643).
- Laporte A, Karimova A, Ferguson B. 2010. Quantile regression analysis of the rational addiction model: investigating heterogeneity in forward-looking behavior. *Health Economics*. 19(9):1063–1074. doi:<https://doi.org/10.1002/hec.1647>.
- Lawes E, Boyd S. 2018. Making a difference to student wellbeing: a data exploration. New Zealand Council for Educational Research. <https://www.nzcer.org.nz/system/files/Student%20Wellbeing%20Report.pdf>.
- Lawrence KC, Adebowale TA. 2022. Adolescence dropout risk predictors: family structure, mental health, and self-esteem. *Journal of Community Psychology*. doi:[10.1002/jcop.22884](https://doi.org/10.1002/jcop.22884).
- Lê Cook B, Manning WG. 2013. Thinking beyond the mean: a practical guide for using quantile regression methods for health services research. *Shanghai Archives of Psychiatry*. 25(1):55–59. doi:[10.3969/j.issn.1002-0829.2013.01.011](https://doi.org/10.3969/j.issn.1002-0829.2013.01.011).
- Lerner JV, Bowers EP, Minor K, Boyd MJ, Mueller MK, Schmid KL, Napolitano CM, Lewin-Bizan S, Lerner RM. 2013. Positive youth development: processes, philosophies, and programs. In: Lerner RM, Easterbrooks MA, Mistry J, Weiner IB, editors. *Handbook of psychology: developmental psychology*. Hoboken, NJ: Wiley; p. 365–392.
- Lerner RM, Lerner JV, Almerigi JB, Theokas C, Phelps E, Gestsdottir S, Naudeau S, Jelicic H, Alberts A, Ma L, et al. 2005. Positive youth development, participation in community youth development programs, and community contributions of fifth-grade adolescents. *The Journal of Early Adolescence*. 25(1):17–71. doi:[10.1177/0272431604272461](https://doi.org/10.1177/0272431604272461).
- Lewis G, Srinivasan R, Roiser J, Blakemore S-J, Flouri E, Lewis G. 2021. Risk-taking to obtain reward: sex differences and associations with emotional and depressive symptoms in a nationally representative cohort of UK adolescents. *Psychological Medicine*. 52(13):2805–2813. doi:[10.1017/S0033291720005000](https://doi.org/10.1017/S0033291720005000).
- Lewycka S, Clark T, Peiris-John R, Fenaughty J, Bullen P, Denny S, Fleming T. 2018. Downwards trends in adolescent risk-taking behaviours in New Zealand: exploring driving forces for change. *Journal of Paediatrics and Child Health*. 54(6):602–608. doi:<https://doi.org/10.1111/jpc.13930>.
- Mackridge A, Rowe P. 2018. *A practical approach to using statistics in health research: from planning to reporting*. Hoboken, NJ: Wiley.
- Manlove J. 1998. The influence of high school dropout and school disengagement on the risk of school-age pregnancy. *Journal of Research on Adolescence*. 8(2):187–220. doi:[10.1207/s15327795jra0802\\_2](https://doi.org/10.1207/s15327795jra0802_2).
- Mannes M, Roehlkepartain EC, Benson P. 2005. Unleashing the power of community to strengthen the well-being of children, youth, and families: an asset-building approach. *Child Welfare*. 84(2):233–250.
- Manuela S, Anae M. 2017. Pacific youth, acculturation and identity: the relationship between ethnic identity and well-being: new directions for research. *Pacific Dynamics*. 1(1):129–147. doi:[10.26021/896](https://doi.org/10.26021/896).
- Mariano JM, Damon W. 2008. The role of religious faith and spirituality in the development of purpose in adolescence. In: Lerner RM, Roeser RW, Phelps E, editors. *Positive youth development and spirituality: from theory to research*. West Conshohocken, PA: Templeton Foundation Press; p. 210–230.
- Marriott L, Alinaghi N. 2021. Closing the gaps: an update on indicators of inequality for Māori and Pacific people. *The Journal of New Zealand Studies*.(NS32). doi:[10.26686/jnzs.ins32.6863](https://doi.org/10.26686/jnzs.ins32.6863).
- Marriott L, Sim D. 2015. Indicators of inequality for Māori and Pacific people. *The Journal of New Zealand Studies*. 20. doi:[10.26686/jnzs.v0i20.3876](https://doi.org/10.26686/jnzs.v0i20.3876).
- Martinez-Fuentes S, Jager J, Umaña-Taylor AJ. 2020. The mediation process between Latino youths' family ethnic socialization, ethnic-racial identity, and academic engagement:

- moderation by ethnic-racial discrimination? *Cultural Diversity and Ethnic Minority Psychology*. doi:10.1037/cdp0000349.
- Merikangas KR, He J-P, Burstein M, Swanson SA, Avenevoli S, Cui L, Benjet C, Georgiades K, Swendsen J. 2010. Lifetime prevalence of mental disorders in U.S. adolescents: results from the National Comorbidity Survey Replication-Adolescent Supplement (NCS-A). *Journal of the American Academy of Child & Adolescent Psychiatry*. 49(10):980-989. doi:10.1016/j.jaac.2010.05.017.
- Merlo L, Petrella L, Salvati N, Tzavidis N. 2022. Marginal M-quantile regression for multivariate dependent data. *Computational Statistics & Data Analysis*. 173:107500. doi:10.1016/j.csda.2022.107500.
- Milot Travers AS, Mahalik JR. 2021. Positive youth development as a protective factor for adolescents at risk for depression and alcohol use. *Applied Developmental Science*. 25(4):322-331. doi:10.1080/10888691.2019.1634569.
- Ministry for Pacific Peoples. 2021. Kapasa: the Pacific policy analysis tool. <https://www.mpp.govt.nz/assets/Resources/Kapasa.pdf>.
- Ministry of Health. 2022. Annual data explorer 2021/22: New Zealand health survey [Data File]. <https://minhealthnz.shinyapps.io/nz-health-survey-2021-22-annual-data-explorer/>.
- Ministry of Justice. 2023. Youth justice indicators summary report. April 2023. Wellington: Ministry of Justice. <https://www.justice.govt.nz/justice-sector-policy/research-data/justice-statistics/youth-justice-indicators/>.
- Moder K. 2010. Alternatives to F-test in one way ANOVA in case of heterogeneity of variances (a simulation study). *Psychological Test and Assessment Modeling*. 52(4):343-353.
- Morgan GA, Leech NL, Gloeckner GW, Barrett KC. 2004. *SPSS for introductory statistics*. New York: Psychology Press.
- Muriwai E, Houkamau CA, Sibley CG. 2015. Culture as cure? The protective function of Māori cultural efficacy on psychological distress. *New Zealand Journal of Psychology (Christchurch)*. 44(2):14-24.
- Murphey D, Lamonda K, Carney JK, Duncan P. 2004. Relationships of a brief measure of youth assets to health-promoting and risk behaviors. *Journal of Adolescent Health*. 34(3):184-191. doi:10.1016/S1054-139X(03)00280-5.
- Ngā Pou Arawhenua, Child and Youth Mortality Review Committee, Suicide Mortality Review Committee. 2020. Te Mauri The Life Force: rangatahi Suicide Report: Te Pūrongo Mō te Mate Whakamomori o te Rangatahi. Health Quality and Safety Commission. <https://www.hqsc.govt.nz/resources/resource-library/te-mauri-the-life-force-i-rangatahi-suicide-report-i-te-purongo-mo-te-mate-whakamomori-o-te-rangatahi/>.
- Office of the Children's Commissioner & Oranga Tamariki – Ministry for Children. 2019. What makes a good life? Children and young people's views on wellbeing. <https://www.orangatamariki.govt.nz/about-us/research/our-research/what-makes-a-good-life/>.
- Orejudo S, Balaguer Á, Osorio A, de la Rosa PA, Lopez-del Burgo C. 2021. Activities and relationships with parents as key ecological assets that encourage personal positive youth development. *Journal of Community Psychology*. 50(2):896-915. doi:https://doi.org/10.1002/jcop.22689.
- Petscher Y. 2016. Do our means of inquiry match our intentions? *Frontiers in Psychology*. 7:1048. doi:10.3389/fpsyg.2016.01048.
- Polglase L, Lambie I. 2024. A sharp decline in youth crime: reviewing trends in New Zealand's youth offending rates between 1998 and 2019. *Current Issues in Criminal Justice*. 36(1):42-62. doi:https://doi.org/10.1080/10345329.2023.2236730.
- Prakash A. 2023. Young people: 2022 quality of life survey snapshot. A report by Auckland Council's Research and Evaluation Unit (RIMU). [https://www.qualityoflifeproject.govt.nz/wp-content/uploads/2023/07/20230517\\_Young-people.pdf](https://www.qualityoflifeproject.govt.nz/wp-content/uploads/2023/07/20230517_Young-people.pdf).
- Raposa EB, Rhodes J, Stams GJJM, Card N, Burton S, Schwartz S, Sykes LAY, Kanchewa S, Kupersmidt J, Hussain S. 2019. The effects of youth mentoring programs: a meta-analysis of outcome studies. *Journal of Youth and Adolescence*. 48(3):423-443. doi:10.1007/s10964-019-00982-8.
- Reddy R, Sluyter J, Kiadarbandsari A, Ofanoa M, Heather M, Fa'alau F, Nosa V. 2023. Priority health needs and challenges in New Zealand pacific communities—a qualitative analysis of

- healthcare delivery during the COVID-19 pandemic. *Healthcare*. 11(16):2239. doi:10.3390/healthcare11162239.
- Rhodes JE. 2005. A model of youth mentoring. In: DuBois DL, Karcher MJ, editors. *Handbook of youth mentoring*. Thousand Oaks, CA: SAGE Publications; p. 30–43.
- Rouland B, Vaithianathan R, Wilson D, Putnam-Hornstein E. 2019. Ethnic disparities in childhood prevalence of maltreatment: evidence from a New Zealand birth cohort. *American Journal of Public Health*. 109(9):1255–1257. doi:10.2105/AJPH.2019.305163.
- Roy R, Greaves LM, Peiris-John R, Clark T, Fenaughty J, Sutcliffe K, Barnett D, Hawthorne V, Fleming T. 2020. Negotiating multiple identities: intersecting identities among Māori, Pacific, rainbow and disabled young people. *The Youth19*. New Zealand: Research Group, The University of Auckland and Victoria University of Wellington.
- Salk RH, Hyde JS, Abramson LY. 2017. Gender differences in depression in representative national samples: meta-analyses of diagnoses and symptoms. *Psychological Bulletin*. 143(8):783–822. doi:10.1037/bul0000102.
- Scales PC, Benson PL, Leffert N, Blyth DA. 2000. Contribution of developmental assets to the prediction of thriving among adolescents. *Applied Developmental Science*. 4(1):27–46. doi:10.1207/S1532480XADS0401\_3.
- Scales PC, Benson PL, Moore KA, Lippman L, Brown B, Zaff JF. 2008. Promoting equal developmental opportunity and outcomes among America's children and youth: results from the national promises study. *The Journal of Primary Prevention*. 29(2):121–144. doi:10.1007/s10935-008-0129-9.
- Scales PC, Roehlkepartain EC, Shramko M. 2017. Aligning youth development theory, measurement, and practice across cultures and contexts: lessons from use of the developmental assets profile. *Child Indicators Research*. 10(4):1145–1178. doi:10.1007/s12187-016-9395-x.
- Scheffé H. 1959. *The analysis of variance*. New York: Wiley.
- Schlink A, Williams J, Pizzano M, Gulsrud A, Kasari C. 2022. Parenting stress in caregiver-mediated interventions for toddlers with autism: an application of quantile regression mixed models. *Autism Research*. 15(2):353–365. doi:10.1002/aur.2637.
- Schwartz SE, Lowe SR, Rhodes JE. 2012. Mentoring relationships and adolescent self-esteem. *The Prevention Researcher*. 19(2):17–20.
- Search Institute. 2005. *Developmental assets profile: user manual*. Search Institute. <https://www.search-institute.org/wp-content/uploads/2018/01/DAP-User-Guide-1-2016.pdf>.
- Silbereisen RK, Lerner RM. 2007. *Approaches to positive youth development*. Los Angeles: Sage Publications.
- Smith C, Tinirau R, Rattray-Te Mana H, Tawaroa M, Moewaka Barnes H, Cormack D, Fitzgerald E. 2021. *Whakatika: a survey of Māori experiences of racism*. Whanganui: Te Atawhai o Te Ao Charitable Trust. <https://teatawhai.maori.nz/>.
- Smokowski PR, Evans CBR, Cotter KL. 2014. The differential impacts of episodic, chronic, and cumulative physical bullying and cyberbullying: the effects of victimization on the school experiences, social support, and mental health of rural adolescents. *Violence and Victims*. 29(6):1029–1046. doi:10.1891/0886-6708.VV-D-13-00076.
- Soares AS, Pais-Ribeiro JL, Silva I. 2019. Developmental assets predictors of life satisfaction in adolescents. *Frontiers in Psychology*. 10. doi:10.3389/fpsyg.2019.00236.
- Spier P. 2016. *Offending by children in New Zealand*. Wellington: Ministry of Social Development. <https://www.msd.govt.nz/about-msd-and-our-work/publications-resources/research/child-and-youth-offending-patterns/index.html#OffendingbychildreninNewZealand1>.
- Staff J, Yetter AM, Cundiff K, Ramirez N, Vuolo M, Mortimer JT. 2020. Is adolescent employment still a risk factor for high school dropout? *Journal of Research on Adolescence*. 30(2):406–422. doi:10.1111/jora.12533.
- Steyn N, Binny RN, Hannah K, Hendy SC, James A, Lustig A, Ridings K, Plank MJ, Sporle A. 2021. Māori and Pacific people in New Zealand have a higher risk of hospitalisation for COVID-19. *The New Zealand Medical Journal*. 134(1537):28–43.
- Sutcliffe K, Ball J, Clark TC, Archer D, Peiris-John R, Crengle S, Fleming T. 2023. Rapid and unequal decline in adolescent mental health and well-being 2012–2019: findings from New



- Zealand cross-sectional surveys. *Australian & New Zealand Journal of Psychiatry*. 57(2):264–282. doi:[10.1177/00048674221138503](https://doi.org/10.1177/00048674221138503).
- Taliaferro LA, Jang ST, Westers NJ, Muehlenkamp JJ, Whitlock JL, McMorris BJ. 2020. Associations between connections to parents and friends and non-suicidal self-injury among adolescents: the mediating role of developmental assets. *Clinical Child Psychology and Psychiatry*. 25(2):359–371. doi:[10.1177/1359104519868493](https://doi.org/10.1177/1359104519868493).
- Theokas C, Lerner RM. 2006. Observed ecological assets in families, schools, and neighborhoods: conceptualization, measurement, and relations with positive and negative developmental outcomes. *Applied Developmental Science*. 10(2):61–74. doi:[10.1207/s1532480xads1002\\_2](https://doi.org/10.1207/s1532480xads1002_2).
- Tiati-Seath J. 2014. Pacific peoples, mental health service engagement and suicide prevention in Aotearoa New Zealand. *Ethnicity and Inequalities in Health and Social Care*. 7(3):111–121. doi:[10.1108/EIHSC-10-2013-0023](https://doi.org/10.1108/EIHSC-10-2013-0023).
- Toomey RB, Syvertsen AK, Flores M. 2018. Are developmental assets protective against suicidal behavior? Differential associations by sexual orientation. *Journal of Youth and Adolescence*. 48(4):788–801. doi:<https://doi.org/10.1007/s10964-018-0954-y>.
- Trempe CL, Lewis TJ. 2018. It's never too early or too late—end the epidemic of Alzheimer's by preventing or reversing causation from pre-birth to death. *Frontiers in Aging Neuroscience*. 10:205–205. doi:[10.3389/fnagi.2018.00205](https://doi.org/10.3389/fnagi.2018.00205).
- Tresidder J, Macaskill P, Bennett D, Nutbeam D. 1997. Health risks and behaviour of out-of-school 16-year-olds in New South Wales. *Australian and New Zealand Journal of Public Health*. 21(2):168–174. doi:[10.1111/j.1467-842X.1997.tb01678.x](https://doi.org/10.1111/j.1467-842X.1997.tb01678.x).
- Turner JL. 2014. The non-parametric Kruskal–Wallis and Friedman's test statistics. In: *Using statistics in small-scale language education research*. New York: Routledge; p. 243–272.
- Uribe JM, Guillen M. 2020. Why and when should quantile regression be used? In: *Quantile regression for cross-sectional and time series data*. Springer briefs in finance. Cham: Springer; p. 1–5.
- Van Dam L, Smit D, Wildschut B, Branje SJT, Rhodes JE, Assink M, Sams GJJM. 2018. Does natural mentoring matter? A multilevel meta-analysis on the association between natural mentoring and youth outcomes. *American Journal of Community Psychology*. 62(1-2):203–220. doi:<https://doi.org/10.1002/ajcp.12248>.
- Weaver KF, Morales VC, Dunn SL, Godde K, Weaver PF. 2017. *An introduction to statistical analysis in research: with applications in the biological and life sciences*. Hoboken, NJ: Wiley; p. 353–391.
- Welch BL. 1951. On the comparison of several mean values: an alternative approach. *Biometrika*. 38(3/4):330. doi:[10.1093/biomet/38.3-4.330](https://doi.org/10.1093/biomet/38.3-4.330).
- Wiium N, Beck M, Ferrer-Wreder L. 2021. The importance of developmental assets to mental health in Norwegian youth. *Frontiers in Psychology*. 12. doi:[10.3389/fpsyg.2021.687537](https://doi.org/10.3389/fpsyg.2021.687537).
- Williams AD, Clark TC, Lewycka S. 2018. The associations between cultural identity and mental health outcomes for indigenous Māori Youth in New Zealand. *Frontiers in Public Health*. 6:319. doi:[10.3389/fpubh.2018.00319](https://doi.org/10.3389/fpubh.2018.00319).
- Williamson K. 2002. *Research methods for students, academics and professionals: information management and systems*. 2nd ed. Elsevier. 285–302.
- Windfuhr K, While D, Hunt I, Turnbull P, Lowe R, Burns J, Swinson N, Shaw J, Appleby L, Kapur N. 2008. Suicide in juveniles and adolescents in the United Kingdom. *Journal of Child Psychology and Psychiatry*. 49(11):1155–1165. doi:[10.1111/j.1469-7610.2008.01938.x](https://doi.org/10.1111/j.1469-7610.2008.01938.x).
- Zelinski EM, Gilewski MJ. 2003. Effects of demographic and health variables on Rasch scaled cognitive scores. *Journal of Aging and Health*. 15(3):435–464. doi:[10.1177/0898264303253499](https://doi.org/10.1177/0898264303253499).