

Original Research

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Identification of mental health and substance use-related conditions among Pasifika young people in Aotearoa New Zealand – a cross-sectional study using the Integrated Data Infrastructure (IDI)

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ABSTRACT

Introduction: Pasifika young people of Aotearoa New Zealand are known to experience higher rates of mental health and addiction conditions (especially anxiety and depression), compared with young non-Māori/non-Pasifika (NMNP). However, there is little information about how well these issues are identified by mental health services.

Aim: We compared rates of diagnosis of common mental health and substance use-related conditions between Pasifika and NMNP young people (aged 10-24 years) and examined how these diagnoses varied with deprivation.

Methods: This national, cross-sectional study was undertaken using 2017/18 fiscal year data from a national database known as the Integrated Data Infrastructure. Specialist mental health service use, hospitalisations and pharmaceutical dispensing for any mental health condition, emotional condition (depression and/or anxiety), substance use-related conditions, and self-harm were examined.

Results: A total of 982,305 young people (12.4%, Pasifika and 63.9%, NMNP) were identified. Compared with NMNP, Pasifika young people were significantly less likely to be diagnosed by specialist mental health services with any mental health condition (adjusted Risk Ratio (aRR) = 0.77, 95% CI = 0.75 to 0.78); any emotional condition (aRR= 0.44, 95% Confidence Interval (CI) = 0.43 to 0.45); or to be hospitalised for self-harm (aRR = 0.88, 95% CI = 0.82 to 0.94). However, they were significantly more likely than NMNP to be diagnosed with substance use-related conditions (aRR = 1.68, 95% CI = 1.63 to 1.74). Although the overall rate of mental health issues remained relatively stable across deprivation levels, emotional conditions were much less frequently diagnosed in those with greater deprivation.

Conclusions: Discrepancies between expected and identified rates of diagnoses of common mental health and substance use-related conditions might indicate different patterns of service access by Pasifika young people, or they may reflect the bias of an inequitable and less than culturally appropriate health system.

Key words: Mental Health, Pasifika Youth, Integrated Data Infrastructure

INTRODUCTION

Mitigating the burden of mental health conditions is a worldwide priority and one of the most significant public health challenges in the world. Hence, the World Health Organisation (WHO) included mental health as one of its seventeen worldwide Sustainable Development Goals in 2019.¹ Unfortunately, the last decade alone has seen a global 13% rise in mental health and substance use-related conditions, with a disproportionate impact on young people and suicide as one of the leading causes of death in those aged 15–29 years.¹ However, a large

majority of these issues remain unrecognised and/or untreated.

In Aotearoa New Zealand, Pasifika people (an umbrella term used to refer to migrants and their descendants from countries in the Pacific region, who now make up 8.1% of Aotearoa New Zealand's population) experience a higher prevalence of mental health conditions (25% vs 20.7%) and almost double the rate of substance use-related conditions (4.9% vs 2.7%) compared to non-Māori/non-Pasifika (NMNP).² This trend is similarly reflected among Pasifika young people who are twice as likely to report symptoms of anxiety and depression than non-

Pasifika young people.^{3,4} and to experience higher rates of self-harm⁵ and suicide attempts.⁶ Young people comprise almost half (45.8%) of completed suicides amongst all Pasifika people.⁷ Rates of self-reported depressive symptoms among school-based samples have also worsened over time from 13% in 2012 to 23% in 2019.⁸ Many of these findings are from 2006 in the study 'Te Rau Hinengaro' which was the first, and continues to be, the largest national study of mental health status conducted in Aotearoa New Zealand, however, the trends have remained relatively stable. Although Pasifika experience a high burden of mental health conditions, they are reportedly less likely to be seen for specialist mental health care.⁹

While the New Zealand Ministry of Health purportedly aims to support all citizens to lead independent and resilient lives, live longer in good health, and achieve equitable health outcomes¹⁰, there is little information about how well public-funded specialist mental health services recognise (and address) mental health and substance use-related conditions among Pasifika young people. With the relatively recent availability of a government-administered database known as the Integrated Data Infrastructure (IDI); it has become possible to examine this issue at a national level. This study was conducted to compare rates of identification of common mental health and substance use-related conditions between Pasifika and non-Māori/non-Pasifika (NMNP) young people and to examine how these varied with deprivation.

METHODS

Study design and data source

We conducted a national cross-sectional study using data sourced from the Integrated Data Infrastructure (IDI), a population-level database that captures and links data from a range of government agencies, surveys (including the 2013 and 18 censuses), and some non-government organisations.¹¹ The University of Otago Human Research Ethics Committee reviewed and approved the present study as a 'Minimal Risk Health Research – Audit and Audit related studies' proposal (Reference: HD17/004). Clearance for this study and access to data were also approved by Stats NZ.

Participant population

Participants were identified from the Aotearoa New Zealand IDI estimated resident population (ERP) of 10–24 year olds for the 2017/18 fiscal year.¹² This method attempts to capture all those alive and living in Aotearoa New Zealand as at 30 June, 2018. It identifies all those who have used

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key government services over the preceding two years.

Primary measures

Mental health outcomes

The case identification method for mental health measures used during this study was developed by Bowden et al.¹³ This method identifies clinically relevant mental health cases who have had contact with health services and minimises incorrect identifications. The method uses data from four Ministry of Health databases, International Classification of Diseases – 10th revision – Australian Modification (ICD-10-AM) diagnosis codes from the hospital admission data (national minimum dataset [NMDS]), ICD and Diagnostic and Statistical Manual of Mental Disorders – 4th editions (DSM-4) diagnosis codes from specialist mental health service use data (the programme for the integration of mental health data [PRIMHD]), assigned diagnosis codes from disability support services data (Socrates) and inference from medication dispensing from the pharmaceutical collection (Pharms). It does

not include primary care data and was not designed to describe prevalence rates of mental health conditions.

Problems identified via the IDI were grouped into: (1) 'emotional conditions', comprised of anxiety and depression [NMDS, PRIMHD, and Socrates] and a composite group of indeterminate anxiety or depression based on indications from medication dispensing of either anxiety or depression but not one specifically; (2) 'self-harm', captured through NMDS hospital admissions for self-harm; (3) 'substance-use related conditions', using diagnoses of substance problems [NMDS, PRIMHD, and Socrates] and indications from medication dispensing; and (4) 'any mental health condition', comprised of the aforementioned groups and bipolar disorder, psychosis, behaviour conditions (attention deficit hyperactive disorder, conduct disorder, and oppositional defiant disorder), eating problems, sleep problems, other mental health conditions, and mental health not defined (see Bowden et al for further details).

Ethnicity

A 'Personal Details' table in the IDI includes an identification of six main ethnic groups, including Pasifika ethnicity. Total ethnic groups are not mutually exclusive, and individuals could belong to one or any number of the six ethnicities. Total Pasifika ethnicity, as opposed to prioritised ethnicity, was used in this study. For comparison purposes, those who were neither Pasifika nor Māori (Indigenous peoples of Aotearoa New Zealand), were assigned to a composite non-Māori non-Pasifika (NMNP) group. As Māori command a unique position in Aotearoa New Zealand as tangata whenua (indigenous people of the land), individuals with Māori ethnicity and no Pasifika ethnicity were excluded from this study. A companion paper with a specific focus for Māori young people has been conducted and has been submitted for publication (Theodore et al, under review).

Socio-demographics

Sex (male/female) and age (in years and grouped to align with mental health case identification data: 10–14, 15–19, and 20–24 years) were extracted from the IDI personal details dataset. Area level of deprivation (NZDep2018) is a socio-economic measure of deprivation, defined at the meshblock (the smallest geographic administrative units with 30–60 dwellings (~60–120 residents) reported by Stats NZ level that an individual resides.¹⁴ An area is scored by collapsed quintiles from 1 (the least deprived) to 5 (the most deprived).

An identifier of urban or rural profile of residence, defined by the Urban Rural Indicator 2018, were derived from address notification data and the meshblock where the individual resides.^{14,15} The profile of residence was collapsed into a 5-level categorical variable and defined as follows: major urban areas (populations of 100,000 or more); large urban areas (30,000–99,999); medium urban areas (10,000–29,999); small urban areas (1,000–9,999) and rural areas (<1,000). Time varying measures (age, NZDep2018, and urban/rural) were determined as of 30 June 2018.

Procedure

Data were accessed from the June 2020 refresh of the IDI in approved data labs, extracted using SAS 7.1 and analysed using Stata MP® version 15.^{16,17} All Stats NZ confidentiality requirements were adhered to including rounding to base three, and suppression of counts less than six. Reporting of studies Conducted using Observational Routinely-collected health Data (RECORD) guidelines were used to inform the reporting of analyses.¹⁸ Additionally, to ensure that Pasifika communities' values are upheld in the research and that interpretations of the findings are reflective of their lived realities and aspirations, a Tivaivai research framework was applied which ensures a longstanding relationship with Pasifika communities is maintained and dissemination of results can directly benefit these communities.¹⁹

Statistical analysis

Descriptive statistics on the demographics of the participant population and mental health conditions by data source and population-based rate (per 100,00) stratified by Pasifika and NMNP were generated. A generalised linear regression with log-link and binomial distribution generated unadjusted and adjusted risk ratios (aRR) of mental health conditions in Pasifika and NMNP. Adjusted models included all covariates (sex, age, deprivation, and urban/rural residential location). Significance was defined at $\alpha=0.05$ for two-tailed tests. To measure the interaction of reported mental health condition and deprivation an adjusted regression included a risk ratio between ethnicity and deprivation across quintiles of deprivation.

RESULTS

Participant population

The ERP of 10- to 24-year-olds for the 2017/18 fiscal year included 982,305 young people, of whom, 121,569 (12.4%) were Pasifika, and 627,891 (63.9%) were NMNP. The ERP also included 232,855 (23.7%) Māori who did not identify as Pasifika who, as mentioned, were

excluded from the analytical sample. **Table 1** shows the demographic breakdown for Pasifika and NMNP young people aged 10–24 years in the study. Among young people, Pasifika were

younger and resided in communities established in major urban areas and areas characterised by high deprivation.

Table 1: Demographic breakdown by ethnicity

Condition		Pasifika		NMNP	
		N	%	N	%
ERP	Total	121,569	100.0	627,891	100.0
Sex	Female	59,685	49.1	303,027	48.3
	Male	61,884	50.9	324,861	51.7
Age	10–14 years	42,498	35.0	195,702	31.2
	15–19 years	40,524	33.3	201,051	32.0
	20–24 years	38,547	31.7	231,138	36.8
Deprivation	Quintile 1 (least deprived)	6,189	5.1	143,484	22.9
	Quintile 2	9,324	7.7	136,479	21.7
	Quintile 3	14,484	11.9	132,702	21.1
	Quintile 4	24,363	20.0	125,727	20.0
	Quintile 5 (most deprived)	66,735	54.9	85,215	13.6
Urban/rural	Major urban	91,491	75.3	353,574	56.3
	Large urban	14,040	11.5	75,180	12.0
	Medium urban	5,331	4.4	49,008	7.8
	Small urban	4,968	4.1	48,102	7.7
	Rural	5,277	4.3	97,863	15.6

Table 2 shows the number of mental health conditions identified by data source for Pasifika and NMNP young people. For emotional conditions (comprised of anxiety, depression, and indeterminant anxiety/depression), substance use-related conditions and self-harm,

Pasifika and NMNP young people shared similar patterns of data source distribution. However, other mental health conditions among Pasifika young people were more likely to be identified via PRIMHD and NMDS than PHARMS databases.

Table 2: Number by mental health condition and data source: Pasifika and non-Māori/non-Pasifika

Condition	PRIMHD	NMDS	Pharms	Socrates	Overall
Pasifika					
Any mental health condition	10,764	2,862	6,078	186	14,820
Emotional conditions	1,482 (30.4%)	711 (14.6%)	3,972 (81.4%)	27 (0.6%)	4,881 (100%)
Anxiety	720 (40.7%)	441 (25.0%)	885 (50.1%)	24 (1.4%)	1,767 (100%)
Depression	828 (52.7%)	372 (23.7%)	663 (42.2%)	..S	1,572 (100%)
Indeterminant anxiety/depression	174 (5.0%)	24 (0.7%)	3,321 (96.1%)	n/a	3,456 (100%)
Substance use-related conditions	5,187 (86.3%)	1,302 (21.7%)	30 (0.5%)	..S	6,009 (100%)

Self-harm		1,158 (99.7%)	n/a		1,158 (100%)
NMNP					
Any mental health condition	47,319	14,754	80,028	11,88	10,2990
Emotional conditions	14,805 (23.3%)	5,385 (8.5%)	58,467 (91.9%)	309 (0.5%)	63,648 (100%)
Anxiety	8,898 (38.5%)	3,549 (15.4%)	14,172 (61.4%)	285 (1.2%)	23,088 (100%)
Depression	7,911 (40.9%)	3,030 (15.7%)	12,555 (65.0%)	42 (0.2%)	19,326 (100%)
Indeterminant anxiety/depression	774 (1.5%)	117 (0.2%)	50,136 (99.2%)	n/a	50,529 (100%)
Substance use-related conditions	13,428 (78.4%)	5,304 (31.0%)	327 (1.9%)	..S	17,121 (100%)
Self-harm		6,462 (100%)	n/a		6,462 (100%)

S – fewer than 6 individuals identified, n/a - emotional disorders were not identified in Socrates data

In **Table 3**, population-based rates by condition are shown. Emotional conditions (10.1% vs 4%), anxiety (3.7% vs 1.5%) and depression (3.1% vs 1.3%) were more frequently identified in the IDI among NMNP than Pasifika young people. Conversely, substance use-related conditions were almost twice as commonly identified among Pasifika than NMNP young people (4.9% vs 2.7%). Rates of hospitalisation following self-harm were similar between groups.

Table 4 presents the uRR and aRR for Pasifika experiencing these mental health conditions. Adjusted rates were controlled for key characteristics described in **Table 1**: sex, age, deprivation, and residential location. The unadjusted rate ratios confirm the comparisons drawn from **Table 3**. After adjusting for possible confounders and compared with NMNP, Pasifika

youth were found to be significantly less likely to be identified by specialist mental health services with any mental condition (aRR = 0.77, 95% CI = 0.75 to 0.78) or emotional condition (aRR = 0.44, 95% CI = 0.43 to 0.45). When controlled for deprivation, they were also less likely to be hospitalised for self-harm (aRR = 0.88, 95% CI = 0.82 to 0.94). Pasifika remained more likely than NMNP to be identified by services with substance use-related conditions (aRR = 1.68, 95% CI = 1.63 to 1.74).

Figure 1 depicts the risk ratios by mental health condition as a function of local area deprivation. Stark ethnicity-related differences were evident. The likelihood of Pasifika young people being identified with emotional conditions, anxiety, depression, and self-harm decreased as deprivation increased; and more so than for

Table 3: Rates of mental health condition in 10–24 years by disorder: Pasifika and non-Māori/non-Pasifika

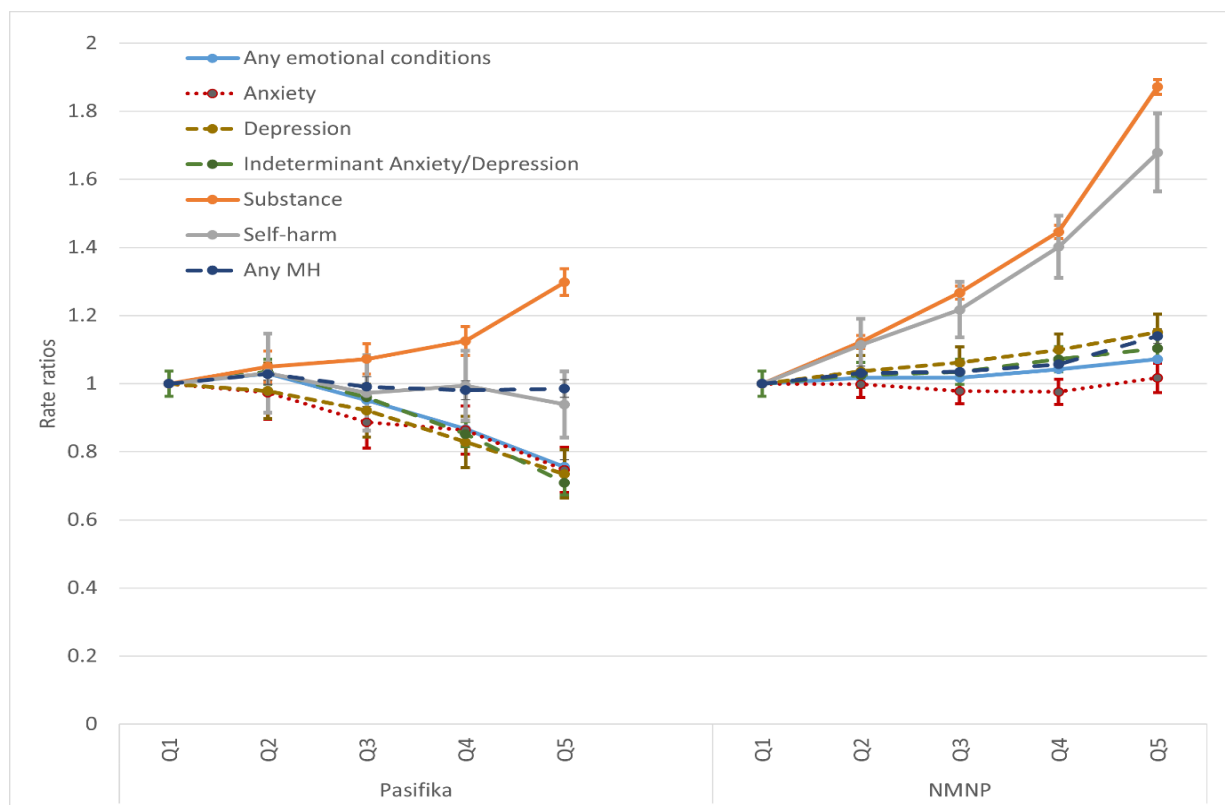
Condition	Pasifika	NMNP
	N (%)	N (%)
ERP	121,569 (100%)	627,891 (100%)
Any mental health conditions	14,817 (12.2%)	102,990 (16.4%)
Emotional conditions	4,881 (4.0%)	63,651 (10.1%)
Anxiety	1,767 (1.5%)	23,091 (3.7%)
Depression	1,572 (1.3%)	19,329 (3.1%)
Indeterminant anxiety/depression	3,456 (2.8%)	50,532 (8.0%)
Substance use-related conditions	6,012 (4.9%)	17,124 (2.7%)
Self-harm	1,155 (1.0%)	6,462 (1.0%)

Table 4: Rate ratio, Pasifika vs NMNP, by disorder

Condition	Unadjusted (uRR)	Adjusted (aRR) ¹
	uRR (95% CI)	aRR (95% CI)
Any Mental Conditions	0.743 (0.731, 0.755)	0.765 (0.752, 0.778)
Any Emotional Conditions	0.396 (0.385, 0.407)	0.439 (0.426, 0.452)
Anxiety	0.395 (0.376, 0.414)	0.424 (0.404, 0.446)
Depression	0.420 (0.399, 0.442)	0.467 (0.443, 0.492)
Indeterminant anxiety/depression	0.353 (0.341, 0.365)	0.394 (0.380, 0.408)
Substance use-related conditions	1.813 (1.762, 1.866)	1.683 (1.631, 1.737)
Self-harm	0.924 (0.868, 0.983)	0.876 (0.819, 0.936)

¹Adjusted models include indicators of age, sex, deprivation and residential location (urban/rural)

Figure 1: Risk ratio, deprivation (quintile 1 vs others), by ethnicity



those of NMNP ethnicity. In contrast, rates of identification of substance use-related disorders increased, but remained much lower (aRR = 1.30, 95% CI = 1.21 to 1.39) than those for NMNP young people (aRR = 1.872, 95% CI = 1.78 to 1.97).

DISCUSSION

Using a relatively novel IDI-based case identification method, we found that Pasifika young people were less likely than their NMNP

counterparts to be recognised by specialist mental health services as having anxiety, depression, any emotional condition, and any mental health condition. Conversely, they were more likely to be identified as having substance use-related conditions. Although rates of identification of most mental health conditions among NMNP young people remained relatively stable across deprivation levels, they reduced for Pasifika young people. Rates of substance use-related conditions increased to a greater extent

for NMNP than Pasifika young people as deprivation increased.

There are a couple of possible reasons for our findings and further work is needed to examine these possibilities. They may reflect differing patterns of mental health service access by Pasifika young people.²⁰ Previous reports have shown that Pasifika young people access specialist mental health services at lower rates (2.87%) than Māori (5.72%) and other (5.15%) young people in Aotearoa.²¹ This may be related to personal choice and culturally related preferences for support. Within a Pasifika worldview, there is a 'va' which is a relational space between all living things whereby the correct ways of engagement are dictated by the social context; hence, only specific social and cultural contexts allow for open discussion to occur.²² Pasifika young people are a well socially connected cohort.⁴ The majority (94%) of Pasifika in *Te Kaveinga* reported that they could always rely on a friend or family member for support and over half (52%) of respondents identified friends and family as their first port of call for help.⁴ Similarly, in a subset of young Pasifika male athletes, friends and family were also preferred over professional help; with friends and teammates preferred over family.²³ Previous research has also identified Pasifika preference for less medicalised and individualised health services²⁴; however, it is possible that these alternative forms of support are due to the lack of cultural responsiveness in the current mental health system.

Another possible reason for our findings is that specialist mental health services currently offer inequitable and less than culturally appropriate care to Pasifika young people. Such ethnically motivated unfair treatment by health professionals has been suggested by other researchers.²⁵ Negative associations with Pasifika cultural identity,²⁶⁻²⁸ clinician bias and failure of mental health systems to provide accessible and culturally competent services for Pasifika in Aotearoa²⁹ have been identified during previous studies with Pasifika adults. This could potentially be associated with Pasifika young people as well.

The findings of the present study provide further evidence to support more Pasifika centred approaches to improving access to mental health services, especially for those in areas of highest deprivation. Such approaches may include assisting in increasing health literacy to support knowledge of where to get support for mental health,^{4,23,30} and addressing practical issues such as lack of transport and language barriers known to contribute to low utilisation of healthcare

services and under-diagnosis of some conditions.³¹

Finally, it may be related to perceived stigma or other inhibitions towards help seeking behaviours.²³ For example young Pasifika students have lower rates of reporting self-harm despite higher rates of reported suicidality.^{6,32} Increasing the accessibility of available services is critical as young Pasifika who reported that they are unable to talk to their parents about their problems had almost three times higher odds of attempting suicide.⁵ Furthermore, mental health services low understanding of cultural contexts and competence can make accessing services unattractive.²⁹

The most noteworthy finding in the present analysis was young Pasifika identified in with mental health conditions in the IDI are more likely to be labelled with substance use problems and not emotional conditions. Although a previous study suggests young Pasifika drinkers are less likely to seek help from professionals and parents,³³ this study suggests Pasifika young people were more likely to be identified with substance use-related conditions than NMNP young people (4.9% vs 2.7%). This may be due to a greater likelihood of substance use-related incidents that brought them to the attention of medical or justice services. Pasifika young people have previously been found to consume alcohol at a lower rate but in more hazardous quantities and as such, to have a higher risk of being involved in alcohol related accidents.³³ Another consideration is the more obvious physical manifestation of substance related problems relative to emotional problems which results in a higher likelihood of being identified in young Pasifika; which could potentially highlight emotional conditions being masked as substance use problems. An alternative possibility is that higher substance identification rates among Pasifika young people are the result of targeted responses with public health funding to assist with substance and addiction services with priority communities of Pasifika and people on low incomes.²⁹ Regardless, further investigation is required to ensure that young Pasifika are receiving the correct treatment in a timely and effective fashion.

Given (i) the discrepancy between expected and identified rates of all mental health and substance use-related conditions, and (ii) deprivation-related worsening of identification rates for most conditions, our findings support the development of more Pasifika-centred approaches to improving mental health outcomes for young people. They also echo recommendations for greater consideration of Pasifika-based practice and knowledge by a

recent national inquiry into mental health and addiction services, *He Ara Oranga*.²⁹ Opportunities clearly exist to cultivate the rich cultural life that is inherent in Pasifika communities within mental health services, to bridge the gap between Pasifika communities and these services, and to reduce stigma.^{30,34}

The key strength of this study is the use of a national dataset to examine mental health conditions at a population level. There are few datasets that include large enough numbers of Pasifika people to allow for comparison with people of other ethnicities. Although we did not aim to measure prevalence, this dataset allowed an opportunity to examine ethnic and socio-economic differences in mental health service data. Thus, it must be acknowledged that a large proportion of the data was attained from PHARMS which has limitations in its ability to accurately report emotional conditions. However, it has provided useful information to help to understand which mental health services and pharmaceuticals Pasifika young people are more likely to use. Despite its national reach, IDI health data is currently weighted toward specialist services. As such, it may not reflect alternative sources of support accessed by Pasifika young people including non-governmental, religious and private organisations. Although, as explained by Bowden et al.¹³ the IDI is likely to undercount cases, the relative proportion of service or medication use by different groups can help ascertain their suitability and equitability.

CONCLUSION

Discrepancies between expected and identified rates of diagnoses of common mental health and substance use-related conditions might indicate different patterns of service access by Pasifika young people, or they may reflect the bias of an inequitable and less than culturally appropriate health system. Further work is needed to examine and address these possibilities.

Stats NZ disclaimer

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

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Conflicts of interest:

None declared.

Contributions:

TR, NB, RT and JK – Conceptualisation, analysis, interpretation and write up

BSW, HT, SH – Contributed specific practitioner knowledge and implications of findings, revised each draft version and final version.

MH, LM, JW, JB – Each contributed a substantial amount to each draft version and final version.

Data availability statement

The data used by this study are only available from a Statistics New Zealand approved datalab. Restrictions apply to the availability of these data, used under license for this study. Access to confidential unit record data is restricted to analysts who follow strict protocols within the confines of the datalab – any data that has been checked and released by SNZ is available for use by external researchers.

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