



Cohort study comparison of Mental Health and Wellbeing Services delivered by The Royal Flying Doctor Service, across Far North and Central West Queensland

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Summary

Background Understanding cultural differences between geographical regions is essential in delivering culturally appropriate healthcare. We aimed to describe the characteristics and outcomes of diverse clients using the Far North Mental Health and Wellbeing Service (FNS) and the Central West Health and Wellbeing Service (CWS).

Methods We conducted a cohort study within Queensland, Australia, on all clients who received a mental health therapy session at either the FNS or the CWS. Patient data was prospective data collected from July 2019 to December 2020.

Findings There were 1202 clients, with a median number of individual contacts per-client of 3.0 (IQR 2.0-6.0). There was 428 (35.6% 95% CI 32.90-38.39) males and 772 (64.2% 95% CI 61.44-66.94) females with a median age across the genders of 38.0 (IQR 28.0-51.0). There was 505 (42.0% 95% CI 39.20-44.86) identifying as Indigenous and 697 (58.0% 95% CI 55.14-60.80) as non-Indigenous Australians. The FNS had a significantly higher proportion of Indigenous clients (n=484; 54.8% 95% CI 51.46-58.13) as compared to the CWS (n=21; 6.6% 95% CI 4.12-9.89). Of the 1202 clients, 946 (78.7% 95% CI 76.28-80.99) had a socio-economic classification of 'most disadvantaged', consisting of 740 (83.8%) clients from the FNS and 206 (64.6%) clients from the CWS. The majority of presentations were for neurotic, stress-related and somatoform disorders (n=568; 47.3%), followed by mood affective disorders (n=310; 25.8%). The overall number of treatments strategies employed was 10798, equalling a median of 6.0 (IQR 4.0-9.0) strategies per-client, with the leading strategies being counselling/psychosocial (n=1394; 12.9%), reflective listening (n=1191; 11.0%), and strengths based reasoning (n=1116; 10.3%). There were 511 (42.5%) clients who completed the Kessler Psychological Distress Scale (K10/K5), with 493 (41.0%) clients not offered as deemed not culturally appropriate by the treating team. The mean initial K10/K5 score was 23.7 (SD 9.4) which significantly decreased ($p < 0.001$) to 18.0 (SD 10.0) at final consultation.

Interpretation This study highlighted client socioeconomic differences between two geographically remote mental health services. It is essential that services are regionally co-designed to ensure cultural appropriateness.

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Keywords: Rural and remote; Mental healthcare; Aboriginal; Australia

Introduction

Rural and remote populations have high rates of modifiable disease risk factors, such as smoking and excessive alcohol consumption, coupled with higher rates of chronic disease such as heart, stroke, and vascular

disease, as compared to major city populations.^{1,2} While the prevalence of mental health problems is similar across remoteness categories, the suicide completion rate is higher in rural and remote areas.³ This could be a reflection of multiple factors including but not exclusive to the significantly lower access to mental health services in rural and remote areas.^{4,5} Many people without access to mental health services are required to travel into metropolitan areas, wait for visiting services, or forgo care altogether.⁶

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Research in context

Evidence before this study

While there is literature on mental health burden, remote aeromedical retrieval, and mental health service provision, there is little research detailing the characteristics of mental health clients using remote mental healthcare services in Australia.

Added value of this study

We found that clients differed between mental health services, including by Indigenous status, age, and social disadvantage. Indigenous clients were generally younger with higher rates of social disadvantage, coupled with severe stress.

Implications of all the available evidence

Mental health services need to be adaptive and provide culturally appropriate interventions reflective of community need.

Due to limitations associated with workforce shortages and the high mental health burden of disease in rural and remote areas, mobile mental health services are often utilised. These visiting services have been positioned as one way to improve population access to health care clinicians in areas with small populations that cannot support permanent, resident mental health care professionals.⁷ Mobile clinics focus on areas with little to no other services, and are designed to be flexible and tailored to the geographical location and culture. The primary aim of these services is to prevent and manage illness, serious complications, and downstream avoidable expenses (including direct monetary and social costs) of hospitalisation or aeromedical retrieval.^{7,8}

While there is literature on mental health burden,³ remote aeromedical retrieval,^{6,9} and mental health service provision,¹⁰ there is little research detailing the characteristics of mental health clients using a remote mental healthcare service in Australia.

As such, this study aims to describe the characteristics and outcomes of clients using the Far North Mental Health and Wellbeing Service (hereafter referred to as FNS) and the Central West Mental Health and Wellbeing Service (hereafter referred to as CWS). Both of these services are located within Queensland Australia, however both differ in the ethnicity of the communities as explained in the methods section.

Methods

Setting

Australia covers a total area of 7.69 million square kilometres, making it the six largest country by total area.¹¹

However the majority of the Australian population (n=24, 992, 860) in 2018 lived in major cities (n=18,003,544; 72.0%), or inner-regional (n= 4, 445,356; 17.8%) areas, with the remainder in outer-regional (n=2,052,366; 8.2%), remote (n= 291,213; 1.2%), and very remote areas (n= 200,381; 0.1%).¹² As such, the majority of Australia has low population concentrations distributed over vast distances, often termed the “tyranny of distance”,¹³ when it comes to service provision.

Remote and very remote areas have significantly lower access to traditional services, including health care.¹⁴ This study includes services located within remote Australia, as defined by the Australian Statistical Geography Standard (ASGS) and the Modified Monash Model.^{15,16}

Communities throughout remote Australia can differ dramatically, with some areas consisting of predominantly Aboriginal Australians and other being non-Indigenous farming/mining communities. These geographical areas, while often both considered remote can have vastly different service accessibility and disease outcomes.¹⁷

Service overview

The FNS and the CWS were selected as they service different population groups, with the FNS consisting of proportionally more Indigenous clients, and the CWS consisting of proportionally more non-Indigenous (Anglo-Saxon) clients.

The FNS was established in July 2018, and is funded by the Northern Queensland Primary Health Network (NQPHN). The CWS was established in July 2018, and is funded by the Central West Primary Health Network (CWPHN). Both services aim to support people living in communities with their individual remote geographical area, namely Far North and Central West Queensland. This support is provided through the provision of culturally appropriate, evidence based, psychological therapies to individuals who present with mild to moderate mental health needs. The service is comprised of mental health nurses, social workers, occupational therapists, and psychologists. Please refer to [Figure 1](#) for a geographical representation of the respective service areas.

Clients and data sources

This study includes all clients who received a mental health consultation and/or structured group therapy session between July 2019 and December 2020 (1.5 years).

Individual client consultation data was prospectively collected and included the geographical location, client record number, occasion of service, age, gender, Indigenous status, employment status, reason for presentation

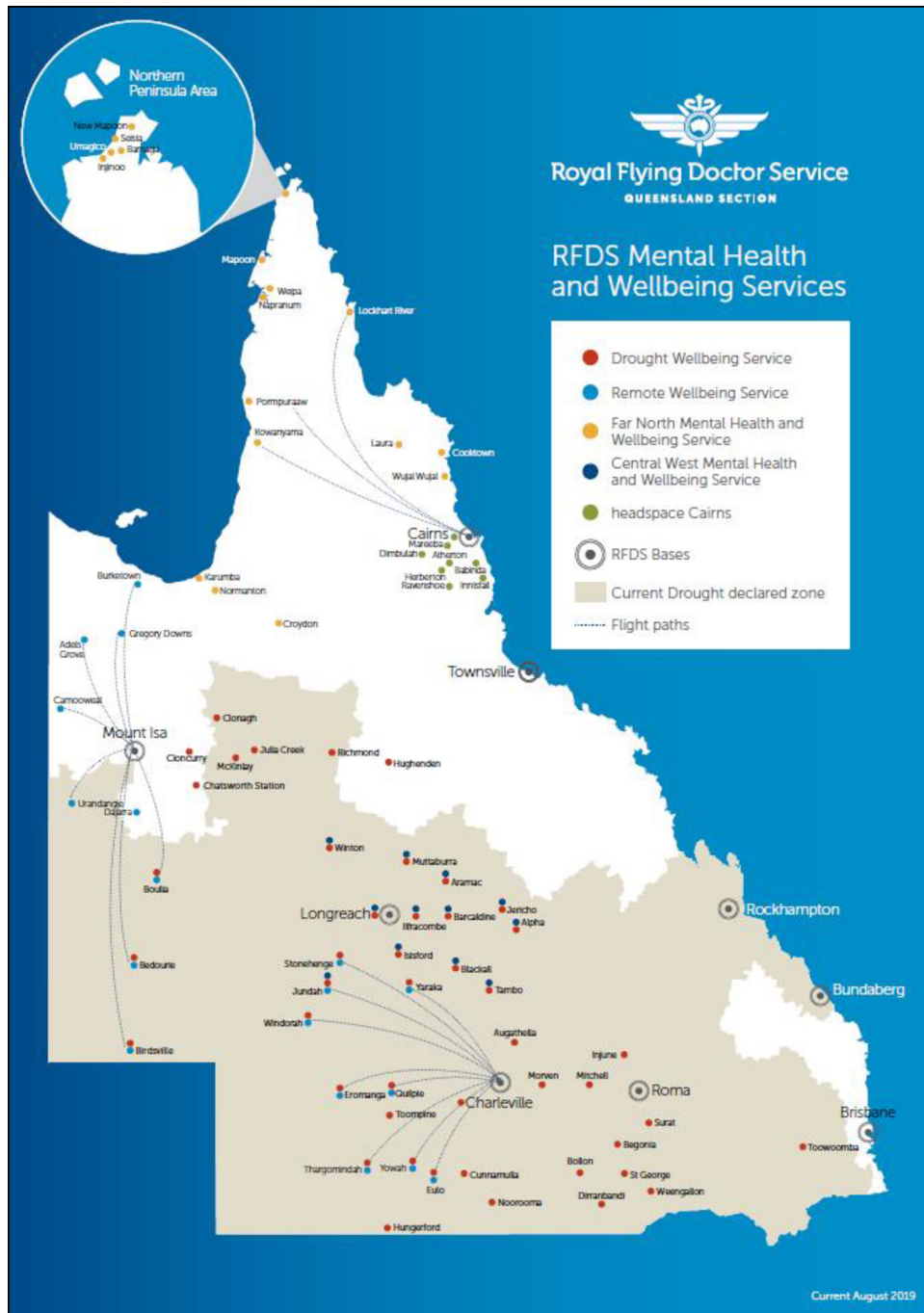


Figure 1. Royal Flying Doctor Service Mental Health Programs in Queensland, Australia.

(coded to the International Statistical Classification of Diseases and Related Health Problems 10th Revision-ICD-10), and intervention strategy.

Group session data was prospectively collected and included the group session category (such as Psycho-Educational), primary purpose (such as mental health

education), service location, service date, session time-frames, session topic, and the numbers of participants.

To compare the FNS and the CWS individual session client characteristics to that of the general population, we used the Australian Bureau of Statistics (ABS) population estimates by geographical area.^{18,19}

To determine the client relative socio-economic disadvantage, we used the Index of Relative Socio-economic Disadvantage (IRSD).²⁰ The IRSD summarises the economic and social conditions of people and households within an area. A low score indicates relatively greater disadvantage in general, whereas a high score indicates a relative lack of disadvantage. Each geographical area is allocated an IRSD score from 1 = most disadvantaged to 5 = least disadvantaged. We then compared the FNS and CWS population IRSD to the IRSD of Queensland, Australia, aimed at determining whether our population cohort differed to that of Queensland as a whole.

To determine whether clients who attended individual sessions found improvement in their level of psychological distress we used the Kessler Psychological Distress Scale (K10 and K5). The K10 or K5 was offered to all clients upon initial consultation and then repeated at the final consultation. The K10 and K5 is a commonly used measure which is often considered the minimum standard amongst mental health services. The K10 and K5 is mandated by the Commonwealth Department of Health for both programs included in this study.

Statistical analysis

Continuous variables with a skewed distribution were summarised as medians and interquartile ranges (IQR), and those with a similar distribution were summarised as means and standard deviation (SD). A Chi-square was used to determine significance between observed and expected categorical variables summarised as counts and proportions. We used an independent t-Test to compare ages between the FNS and the CWS. We used a paired t-Test to compare the initial K10 and K5 scores to those scores obtained at the final consultation. A threshold of 0.05 was used to determine statistical significance.

The comparison between the client characteristics to the population within the geographical area was made by estimating 95% confidence intervals (CIs) for medians and proportions of interest for the sample and examining whether the population values belonged to these confidence intervals. The population value outside of the sample 95% CI can be interpreted as indicative of a statistically significant difference between the sample and the geographical population at the significance threshold of 0.05.

Statistical analyses were performed using the statistical software package R version 3.5.1. (R Foundation for Statistical Computing, Vienna, Austria).

Role of the funding source

This study self-funded by the Royal Flying Doctor Service of Australia (Federation), no external funding related to the study design, data collection, data analysis,

interpretation, or the writing of the paper. The FNS and the CWS are funded by the relevant Primary Health Network (PHN), with JM, and MG wages paid indirectly by the NQPHN.

Results

During the study period there were 5765 individual contacts for 1202 clients, equalling a median per-client contact of 3.0 (IQR 2.0-6.0) with the greatest proportion of clients receiving 2-3 (n= 383; 31.9%) contacts. The majority of the clients were referred by a medical practitioner (n=331; 27.5%), Queensland Health (n=300; 25.0%), and self-referred (n=201; 16.7%). Clients accessing the FNS (n=267; 30.2%) were more likely than the CWS (n=33; 10.3%) to be referred by Queensland Health ($p<0.001$). FNS clients (n= 142; 16.1%) were also more likely than the CWS (n=0; 0.0%) to be referred by the Police and Probation and Parole office ($p<0.001$). Whereas, clients accessing the CWS (n=206; 64.6%) were more likely than the FNS (n=125; 14.2%) to be referred by a medical practitioner ($p<0.001$). See [Table 1](#) for further details.

Of the 1202 individual clients, there were 428 (35.6% 95% CI 32.90-38.39) males and 772 (64.2% 95% CI 61.44-66.94) females ($p<0.05$) with a median age of 38.0 (IQR 28.0-51.0). Of the 1202 clients, there were 505 (42.0% 95% CI 39.20-44.86) identifying as Indigenous and 697 (58.0% 95% CI 55.14-60.80) as non-Indigenous Australians ($p<0.05$). The FNS had a significantly ($p<0.001$) higher proportion of Indigenous clients (n=484; 54.8%) as compared to the CWS (n=21; 6.6%). Furthermore the FNS clients were significantly ($p<0.05$) younger (median age = 38; IQR 28.0-51.0) as compared to the CWS clients (median age = 40.0; IQR 27.5-54.5).

When comparing the FNS client characteristics to the total remote population characteristics (n=18743) within the geographical area (Torres and Cape Hospital Health Service) there were similar differences in those identifying as Indigenous (n=10494; 56.0% vs. n=484; 54.8% 95% CI 51.46-58.13) and non-Indigenous (n=8249; 44.0% vs. 399; 45.2% 95% CI 41.87-48.54). Whereas, when comparing the CWS client characteristics to the total remote population characteristics (n=26290) within the geographical area (North West Hospital Health Service) there were significantly ($p<0.05$) lower proportions of Indigenous clients (n=6150; 23.4% vs. n=21; 6.6% 95% CI 4.12-9.89) and higher proportions ($p<0.05$) of non-Indigenous clients (n=20140; 76.6% vs. 298; 93.4% 95% CI 90.11-95.88).

Of the 1202 individual consultation clients, 288 (24.0%) had full-time employment, 34 (2.8%) part-time employment, and 61 (5.1%) on temporary benefits (sickness or unemployment). There was a non-significant ($p=0.054$) difference between the population proportions of clients in fulltime employment between the

Description	Far North	Central West	Total (%)
Population characteristics			
Total number	883	319	1202 (100.0)
Number Indigenous (%)	484 (54.8)	21 (6.6)	505 (42.0)
Number Non-Indigenous (%)	399 (45.2)	298 (93.4)	697 (58.0)
Number Male (%)	323 (36.6)	105 (32.9)	428 (35.6)
Number Female (%)	559 (63.3)	213 (66.8)	772 (64.23)
Number intersex or indeterminate (%)	1 (<1.0)	1 (<1.0)	2 (1.7)
Median age (interquartile range)	38 (28.0-51.0)	40 (27.5-54.5)	38 (28.0-51.0)
Employment characteristics			
Full-time employment (%)	199 (22.5)	89 (27.9)	288 (24.0)
Part-time employment (%)	15 (1.7)	19 (6.0)	34 (2.8)
Temporary benefit (sickness or unemployment) (%)	54 (6.1)	7 (2.2)	61 (5.1)
All other (dependant; pension) (%)	206 (23.3)	107 (33.5)	313 (26.0)
Not stated/ not known/inadequately described (%)	409 (46.3)	97 (30.4)	506 (42.1)
Index of Relative Socio-economic Disadvantage (IRSD)* Ranked from 1=most disadvantaged to 5= most advantaged			
Number of people classified as remote (ARIA+ level 4&5)- based on residential postcode (%)	883 (100.0)	319 (100.0)	1202 (100.0)
Number of people classified as 'most disadvantaged' (Quintile 1-2) (%)	740 (83.8)	206 (64.6)	946 (78.7)
Number of people classified as 'less disadvantaged' (Quintile 3-5) (%)	143 (16.2)	113 (35.4)	256 (21.3)
Referral pathway			
Number by Queensland Health (%)	267 (30.2)	33 (10.3)	300 (25.0)
Number self- referred (%)	149 (16.9)	52 (16.3)	201 (16.7)
Number by medical practitioner (%)	125 (14.2)	206 (64.6)	331 (27.5)
Number by Queensland Police and Probation and Parole (%)	142 (16.1)	0 (0.0)	142 (11.8)
Number by family member or friend (%)	50 (5.7)	12 (3.8)	62 (5.2)
All other referral types (%)	150 (17.0)	16 (5.0)	166 (13.8)
ICD-10 code: Initial presentation reason by number			
F40-F48 Neurotic, stress-related and somatoform disorders (%)	454 (51.4)	114 (35.7)	568 (47.3)
F30-F39 Mood [affective] disorders (%)	161 (18.2)	149 (46.7)	310 (25.8)
Z55-Z65 Persons with potential health hazards related to socioeconomic and psychosocial circumstances (%)	108 (12.2)	8 (2.5)	116 (9.7)
F10-F19 Mental and behavioural disorders due to psychoactive substance use (%)	54 (6.1)	2 (0.6)	56 (4.7)
F90-F98 Behavioural and emotional disorders with onset usually occurring in childhood and adolescence (%)	19 (2.2)	3 (0.9)	21 (1.7)
F60-F69 Disorders of adult personality and behaviour (%)	13 (1.5)	6 (1.9)	19 (1.6)
F20-F29 Schizophrenia, schizotypal and delusional disorders (%)	5 (0.6)	5 (1.6)	10 (0.8)
R40-R46 Symptoms and signs involving cognition, perception, emotional state and behaviour (%)	5 (0.6)	4 (1.3)	9 (0.7)
Z70-Z76 Persons encountering health services in other circumstances (%)	5 (0.6)	21 (6.6)	26 (2.2)
F00-F09 Organic, including symptomatic, mental disorders (%)	3 (0.3)	2 (0.6)	5 (0.4)
R50-R69 General symptoms and signs (%)	3 (0.3)	2 (0.6)	5 (0.4)
F50-F59 Behavioural syndromes associated with physiological disturbances and physical factors (%)	2 (0.2)	0 (0.0)	2 (0.2)
All other diagnosis (%)	51 (5.8)	3 (0.9)	55 (4.6)
Treatment characteristics			
Total number of client related contacts (%)	4301 (74.6)	1464 (25.4)	5765 (100.0)
Median client related contacts (interquartile range)	3.0 (2-6)	3.0 (2-6)	3.0 (2-6)
Number of clients who received 1 contact (%)	194 (22.0)	74 (23.2)	268 (22.3)
Number of clients who received 2-3 contacts (%)	279 (31.6)	104 (32.6)	383 (31.9)
Number of clients who received 4-5 contacts (%)	169 (19.1)	55 (17.2)	224 (18.6)
Number of clients who received 6-7 contacts (%)	77 (8.7)	32 (10.0)	109 (9.1)
Number of clients who received 8-10 contacts (%)	73 (8.3)	23 (7.2)	96 (8.0)
Number of clients who received >10 contacts (%)	91 (10.3)	31 (9.7)	122 (10.1)
Treatment strategies employed by number			
Total number of strategies used	5471 (50.7)	5327 (49.3)	10798 (100.0)
Counselling/psychosocial (%)	674 (12.3)	720 (13.5)	1394 (12.9)

Table 1 (Continued)

Description	Far North	Central West	Total (%)
Reflective listening (%)	636 (11.6)	555 (10.4)	1191 (11.0)
Strengths based (%)	566 (10.3)	550 (10.3)	1116 (10.3)
Psycho-education (%)	541 (9.9)	468 (8.8)	1009 (9.3)
Advice / Support (%)	374 (6.8)	285 (5.4)	659 (6.1)
Unconditional positive regard (%)	362 (6.6)	203 (3.8)	565 (5.2)
Acceptance and Commitment Therapy (%)	334 (6.1)	369 (6.9)	703 (6.5)
Mindfulness activity (%)	296 (5.4)	169 (3.2)	465 (4.3)
Assessment (%)	273 (5.0)	185 (3.5)	458 (4.2)
Debriefing (%)	257 (4.7)	250 (4.7)	507 (4.7)
All other total number (%)	1158 (21.2)	1573 (29.5)	2731 (25.3)
Median number of strategies per-client (interquartile range)	6.0 (4.0-8.0)	7.0 (3.0-20.0)	6.0 (4.0-9.0)

Table 1: Mental Health and Wellbeing Service individual session client characteristics.

FNS (n=199; 22.5%) and the CWS (n=89; 27.9%). However, FNS had a significantly (p<0.001) lower proportion of clients in part-time (n=15; 1.7%) employment as compared to the CWS part-time (n=19; 6.0%) employment proportions. When combining fulltime and part-time employment, FNS had significantly (p<0.001) lower proportions of people employed (n= 214; 24.2%) as compared to the CWS client employment proportion (n= 108; 33.9%). FNS also had significantly (p<0.001) higher proportions of clients on a temporary benefit (sickness or unemployment) (n= 54; 6.1%) as compared to those in CWS (n=7; 2.2%). Refer to Table 1 for a full breakdown us employment status.

Of the 1202 individual consultation clients, 946 (78.7% 95% CI 76.28-80.99) had a relative socio-economic disadvantage classification of ‘most disadvantaged’ which was significantly (p<0.05) higher than the proportion within Queensland, Australia (n= 1,045,120; 21.4%). Furthermore, all clients accessing the service were categorised as remote or very remote (n=1202; 100.0% 95% CI 99.6-100.0) which was significantly (p<0.05) higher than the proportion within Queensland, Australia (n= 127827; 2.6%). The FNS had a significantly (p<0.05) higher proportion of clients classified as ‘most disadvantaged’ (n=740; 83.8%) as compared to the CWS (n=206; 64.6%).

The leading initial presentation reasons for the 1202 clients, included neurotic, stress-related and somatoform disorders (n=568; 47.3%), mood [affective] disorders (n=310; 25.8%), persons with potential health hazards related to socioeconomic and psychosocial circumstances (n=116; 9.7%), and mental and behavioural disorders due to psychoactive substance use (n=56; 4.7%). The FNS (n=454; 51.5%) had a significantly (p<0.001) higher proportion of neurotic, stress-related and somatoform disorders as compared to the CWS (n= 114; 35.7%). Whereas, the CWS had a significantly (p<0.001) higher proportion of mood affective disorders (n=149; 46.7%) as compared to the FNS (n=161; 18.2%).

Mental and behavioural disorders due to psychoactive substance use was also significantly (p<0.05) higher in the FNS (n= 54; 6.1%) as compared to the CWS (n=2; 0.6%).

The overall number of treatments strategies employed was 10798, equalling 6.0 (IQR 4.0-9.0) median strategies per-client, with the leading strategies including counselling/psychosocial (n=1394; 12.9%), reflective listening (n=1191; 11.0%), and strengths based reasoning (n=1116; 10.3%). Refer to Table 1 for a full breakdown of client presentation reasons and treatment strategies.

There were 511 (42.5%) clients who completed the Kessler Psychological Distress Scale (K10 or K5), including 192 (21.7% 95% CI 19.06-24.61) from the FNS and 319 (100% 95% CI 98.85-100.0) from the CWS. The mean overall initial consultation score equalled 23.7 (SD 9.4) which significantly decreased (p<0.001) to 18.0 (SD 10.0) at final consultation. FNS had an initial score of 17.1 (SD 8.6) decreasing significantly (p<0.001) to 15.7 (SD 10.1) at final consultation. CWS had an initial score of 27.0 (SD 8.1) decreasing significantly (p<0.001) to 21.6 (SD 8.9) at final consultation. While the reduction in scores is significant it should be interpreted with caution, due to the low completion rates by Indigenous clients, with the FNS having 691 (78.2%) clients who did not complete the questionnaire. The reasons for not completing a K10 or K5, included: not offered as deemed not appropriate by the treating team (n=493; 55.8%); client declining (n=14; 1.6%); and reason unknown (n=184; 20.8%). All (100.0%) of the CWS clients completed a K10 questionnaire, as it was deemed appropriate by the treating team.

In addition to the individual consultations, the FNS also conducted 104 group sessions consisting of 2818 participants, equalling a median number of attendees per session of 12 (IQR 5.75-20.0) with a median duration of 127.5 (IQR 112.5-337.5) minutes. The group sessions were categorised into primary focus areas

Description	Group consultations	
General characteristics		
Total number of attendees	2818	
Total number of group sessions	104	
Mean duration of sessions in minutes (interquartile range)	127.5 (112.5-337.5)	
Median number of attendees per session (interquartile range)	12 (5.75-20.0)	
Locations by Number		
	Total Sessions (%)	Total Attendees (%)
Weipa	33 (31.7)	1794 (63.7)
Kowanyama	24 (23.1)	417 (14.8)
Cooktown	13 (12.5)	130 (4.6)
Northern Peninsula Area	5 (4.8)	103 (3.7)
Napranum	6 (5.8)	50 (1.8)
Lockhart River	9 (8.7)	37 (1.3)
Pompuraaw	1 (1.0)	17 (0.6)
Other	13 (12.5)	270 (9.6)
Group Session Category		
	Total Sessions (%)	Total Attendees (%)
Psycho-Educational	77 (74.0)	1611 (57.2)
Therapeutic	24 (23.1)	1167 (41.4)
Pro-Social	3 (2.9)	40 (1.4)
Primary Group Session Focus		
	Total Sessions (%)	Total Attendees (%)
Mental Health Education	67 (64.4)	1727 (61.3)
Parenting	7 (6.7)	573 (20.3)
Mental Health Awareness	13 (12.5)	277 (9.8)
Social Facilitation	3 (2.9)	108 (3.8)
Health Promotion	4 (3.8)	105 (3.7)
Community Engagement	5 (4.8)	54 (1.9)
Family / Domestic Violence	4 (3.8)	38 (1.3)
Suicide Prevention	1 (1.0)	10 (0.4)
Total	104	2892

Table 2: Far North Mental Health and Wellbeing Service group session client characteristics.

including psycho-education (n= 77; 74.0%), therapeutic (n= 24; 23.1%), and pro- social (n= 3; 2.9%). The main group session topics included mental health education (n=67; 64.4%), mental health awareness (n= 13; 12.5%), and parenting (n= 7; 6.7%). The CWS did not conduct any group sessions. Please refer to [Table 2](#) for more detail concerning client characteristics and group session categories and focus areas.

Please refer to [Table 3](#) for a description of other activities conducted by the treating team that indirectly related to client care.

Discussion

Indigenous Australian's have been reported to have higher prevalence of mental and behaviour disorders and self-reported psychological distress than non-Indigenous Australians,²¹ however there has been very little research that has considered differences between Indigenous and non-Indigenous Australians within remote areas. We found that the majority of FNS clients receiving individual consultations were Indigenous females from remote areas classified as having high rates of

socio-economic disadvantage. Whereas the majority of CWS clients receiving individual consultations were non-Indigenous females from remote grazing community areas with lower proportions of social disadvantage. This result indicates that there are socioeconomic differences between remote Indigenous and non-Indigenous Australians, which is consistent with the wider rural and remote literature.¹⁷ These differences are linked to white colonisation, enforced policies of genocide, assimilation, dispossession and deprivation, which in turn have contributed to the poor health of Indigenous Australians.²²

We observed significantly more Indigenous women as compared to Indigenous men seeking primary mental healthcare. There are many reasons for this differences, as described in a recent literature review,²² such as Indigenous men not feeling comfortable in accessing western primary healthcare. It has been observed that many Indigenous men feel some services are culturally inappropriate, racially discriminatory, and lacked traditional healing, Indigenous health professionals and gender specific staff.²² Based on the literature,^{23,24} a male Indigenous man is unlikely to return to care if

Description of other activity	Far North (%)	Central West (%)	Total (%)
Did Not Attend	580 (28.0)	313 (49.5)	893 (33.0)
Consultation with other Queensland health staff	231 (11.1)	69 (10.9)	300 (11.1)
Case Plan / Collateral Information	63 (3.0)	47 (7.4)	110 (4.1)
Consultation with others	283 (13.6)	44 (7.0)	327 (12.1)
Case Conferencing MO/Psychiatrist (External)	15 (0.7)	37 (5.9)	52 (1.9)
Case Conference (internal)	106 (5.1)	32 (5.1)	138 (5.1)
Consultation with Queensland Health Mental Health Staff	137 (6.6)	24 (3.8)	161 (5.9)
Case Conference (external agency)	119 (5.7)	16 (2.5)	135 (5.0)
Consultation with RFDS Staff	166 (8.0)	14 (2.2)	180 (6.7)
Consultation with other Government Department staff	119 (5.7)	12 (1.9)	131 (4.8)
Consultation with Family	224 (10.8)	9 (1.4)	233 (8.6)
Consultation	13 (0.6)	7 (1.1)	20 (0.7)
Case Management Meeting	15 (0.7)	4 (0.6)	19 (0.7)
Case Management Meeting with PHC Service	0 (0.0)	2 (0.3)	2 (0.1)
Case Conferencing MO/Psychiatrist (RFDS)	3 (0.1)	1 (0.2)	4 (0.1)
Case Confirmation (including Case Plan)	0 (0.0)	1 (0.2)	1 (0.0)
Total	2074 (76.6)	632 (23.4)	2706 (100.0)

Table 3: Description of other activities in-directly related to client care by the treating team.

they have had a negative experience in the past, with one study finding that Indigenous men subsequently utilise alternative coping strategies, such as alcohol and other substance use. This trend could be contributing to increased downstream acute presentations, including more mental health aeromedical retrievals for Indigenous men and compared to Indigenous women (male= 60% vs. female= 40%).⁶ As such, significant engagement is needed with Indigenous community leaders, aimed at developing and fostering community led mental healthcare focusing on male Indigenous mental health.

The contributing factors associated in the differences in psychological distress include unemployment, lower education outcomes, lower income, adverse life events, smoking and chronic physical illnesses. These factors have been found to correlate with psychological distress,²⁵⁻²⁸ and are experienced at higher rates by Indigenous people.²¹ We found that within both geographical areas (Central West and Far North Queensland) the majority of clients were highly socioeconomically disadvantaged. Socioeconomic disadvantaged appeared to be higher in Far North Queensland, with these clients predominately from Indigenous communities. This high level of social disadvantage coupled with the leading presentation reasons being related to severe stress, would likely mean that these clients would have a very high level of underlying psychological distress, despite the initial K10/K5 scores indicating wellness in those that completed the questionnaire. While our scores from the FNS are consistent with findings from Cunningham and Paradies,²⁹ who indicated that remote Indigenous Australians are less likely to suffer from very high psychological distress as compared to their

non-remote counterparts. As they indicate, the lower reported very high psychological distress rates in remote areas could suggest that the K5 instrument may not be as valid for people living in these mainly Indigenous areas. This is consistent with the present study, where it was deemed for the majority of Indigenous clients, that the K5 was not a culturally appropriate measure to use.

While the K5 and K10 instruments have been used to help determine outcomes following mental health interventions by non-remote treating teams, internationally mental health clinicians do not use standardised outcome measures routinely,³⁰ with the evidence from reviews and high quality trials indicting limited effectiveness.³⁰⁻³³ Clinicians remain unconvinced regarding the effectiveness of routine outcome measurements, such as before and after K5 and K10 instruments.^{30,32,33} It appears session attendance and completion is a more widely used measure of benefit,³⁴ especially the completion of psychological interventions following suicide attempts.³⁵ In the present study, we found that the majority of the clients completed more than one session, with the leading proportion of clients completing 2-5 sessions, however treatment effectiveness was difficult to quantify due to the inappropriateness of routine outcome measurements. Future research should focus on the modification of a current instrument or development of a new instrument that is useable in a remote Indigenous Australian context.

Australian remote areas often lack stable mental health services, even though these services are considered a key component of community mental health care.³⁶ Furthermore, many of these areas lack residential subacute or long-term bed-based mental healthcare provision,¹⁰ resulting in clients, who are unable to be

discharged to community remaining in hospital and removed from traditional lands and their community.³⁶ Small subacute units and adequately trained staff are urgently needed in many regional hospitals to provide community based care.

Mental health care for Indigenous Australians requires recognition that the client determines the value, with Indigenous experts claiming that mainstream care is not working.³⁷ Many Indigenous Australians perceive care as too medicalised and removed from the needs of Indigenous health, social, and emotional well-being practices. This results in many either not using them or using them as a last resort, preferring to seek help from traditional providers.³⁸ Recognising that some Indigenous clients require a different model of care, as opposed to clinician-lead models such as acceptance commitment therapy, cognitive behaviour therapy, strengths based, and psycho-education, the FNS provided group or yarning sessions.

The group sessions were popular amongst Indigenous clients in Far North Queensland with an average of 12 people per-group, with the main subject areas being mental health education and mental health awareness. While these are the general topics, the group sessions provide an opportunity to embrace community and cultural perspectives, and specifically help equalise traditional client-service provider relationships. In traditional western models, the power and knowledge resides with the service provider. In contrast, the Far North group sessions provide an opportunity to 'yarn' with the community base, which promotes a collaborative partnership and recognises the expertise of clients whose lived experience of illness provides valued contribution to development of treatment plans and service design. This approach is important in helping to close the gap in Indigenous health, as Indigenous people historically have been subject to complex institution racism and social disconnecting factors.³⁹

Limitations

The main limitation was the low K5/K10 completion rates due to concerns associated with cultural appropriateness. Future research will aim to determine what aspects were not appropriate, to support the hypothesis that the language used is not appropriate, and determining whether there are other culturally sensitive instruments to consider such as those developed by the World Health Organisation (WHO)⁴⁰ and others such as the Kimberley Mum's Mood Scale⁴¹ and the Aboriginal male adapted Patient Health Questionnaire 9.⁴² Our ultimate aim would be associated with developing, testing, and contrasting other patient-reported outcome measures (PROMs) and patient-reported experience measures (PREMs). We hope this results to greater PROM and PREM completion rates.

Declaration of interests

Ms. Middleton received paid employment by the PHN in the RFDS operating area, during the conduct of the study. The rest authors have no conflicts to declare.

All experimental protocols were approved by the ACT Health Human Research Ethics Committee, on 7 April 2021 (number: 2021.LRE.00041). This publication was given final approval for publication by the Royal Flying Doctor Service Clinical Health Research Committee.

All methods were carried out in accordance with relevant guidelines and regulations in the ethical approval and consent to participate.

Client informed consent was obtained from all subjects or, if subjects are under 18, from a parent and/or legal guardian.

Author contributions

FWG and JM formulated, implemented, and drafted the research for publication; SP collected and coded the study data for analysis; MG provided administrative support throughout the study; LC and FWG conducted the statistical analysis; MC assisted in drafting the manuscript; LP assisted in drafting the manuscript. All authors reviewed the manuscript.

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Data sharing statement

The datasets used and/or analysed during the current study available from the corresponding author on reasonable request.

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