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ORIGINAL ARTICLE

Jandu Yani U (for all families): evaluating Indigenous Triple P, a community-tailored parenting support program in remote Aboriginal communities

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ABSTRACT

Objectives: Although evidence-based parenting programs are widely available, they remain inaccessible to many families of children with social, emotional and behavioural problems, particularly in remote settings. In partnership with Aboriginal communities in the remote Fitzroy Valley, Western Australia, we introduced and evaluated the Indigenous Triple P – Positive Parenting Program, with additional Stepping Stones Triple P strategies (for children with complex needs). Implementation followed community consultation and program adaptation to acknowledge local culture, social complexities and language. The initiative was named Jandu Yani U, meaning "for all families" in the local Bunuba language.

Method: Local practitioners (parent coaches) were trained to deliver Triple P. Parents and carers (henceforth carers) of children up to 15 years of age were invited to participate. Families attending the program reported on child behaviour, parenting practices, self-efficacy, well-being and empowerment pre- and post-intervention and at 8-month follow-up using standardised assessment tools delivered by local community navigators.

Results: Of 30 participating families, 100% completed Triple P and reported the program was culturally appropriate. Of the index children, 93% were Aboriginal, 63% boys, median age 6.83 years. Following the program, carers reported high levels of empowerment and reaching goals for behaviour change ($p < .001$) and less use of unhelpful parenting strategies (over-reactivity and hostility; $p < .05$), and this maintained at 8-month follow-up ($p < .001$). At follow-up, improvement in carer self-efficacy ($p < .001$) and reduced anxiety ($p < .001$) were documented. Significant improvements in prosocial behaviour, reductions in challenging behaviour and decreased intensity and frequency of behavioural problems (all $p < .05$) were reported in children at follow-up. The average level of goal attainment was 65% at post, which was maintained at follow-up.

Conclusion: This study demonstrates the feasibility of delivering Indigenous Triple P to Aboriginal families in remote settings, and the importance of partnership with communities. Program tailoring, flexible delivery, use of Aboriginal parent coaches and provision of practical support to families resulted in a culturally acceptable parent support program. With local Aboriginal co-design, this initiative should be generalisable to similar remote communities elsewhere.

KEY POINTS

What is already known about the topic:

(1) Aboriginal and Torres Strait Islander families are more often exposed to stressful life events than non-Indigenous families, with children overrepresented in hospitalisation rates, poor health outcomes, early school dropout, out-of-home care, involvement with the justice system and youth suicide.
(2) There is a significant evidence base that parenting programs, such as Triple P, built on the principles of social learning and self-regulation, can be effective in addressing emotional and behavioural problems in children in the short and longer term.
(3) Despite the availability of evidence-based parenting programs, a minority of parents of children with behavioural and emotional problems access such programs, and access by Aboriginal and Torres Strait Islander families is lower.

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What this topic adds:

(1) This study determined the feasibility of delivering a community tailored, evidence-based parenting program to families in a very remote Western Australian Aboriginal community.
(2) Families reported significant reductions in unhelpful parenting strategies, carer anxiety and challenging child behaviours and significant increases in parenting confidence and empowerment and prosocial child behaviour following the program.
(3) Co-design methods, community-led modifications to resources, two-way learning with Aboriginal and non-Indigenous trainers, training local parent coaches, flexible program delivery and long-term practical support were essential for delivering a culturally acceptable parenting program implementation strategy that could be adapted for remote communities elsewhere.

> In the course of a couple of years the township of Fitzroy Crossing in the remote Kimberley changed from a tiny frontier outpost, to a refugee camp with hundreds of people living in fringe camps in third world conditions. From this maelstrom a unique community emerged, with a strong ethos of cooperation and support amongst the various peoples of the Fitzroy Valley. (Hawke, 2013)

Connection to family, community, culture, country and spirit are key to Indigenous parent and child wellbeing (Ponnapalli et al., 2023). Yet, many Indigenous families face ongoing stressors from the continuing impacts of colonisation policies which brought about loss of culture and language, disconnection from the country due to displacement from land, and family breakdown due to forced removal of children in the "stolen generation". As a result, disparities in health and wellbeing between Australian Aboriginal and Torres Strait Islander peoples and non-Indigenous people are significant and enduring (Australian Institute of Health and Welfare, 2009; Calma et al., 2017). Despite demonstrated resilience, nearly one-quarter of Aboriginal children aged 4–17 years are at high risk for emotional and behavioural difficulties (e.g., anxiety, depression, disruptive behaviour, substance use) which may result from adverse childhood experiences (Zubrick, Silburn et al., 2005). [Note, the terms "Aboriginal" and "Indigenous" are often used interchangeably; hereafter, the term "Indigenous" will be used in an international context, and the people of the Fitzroy Valley in the Kimberley region in Western Australia (the project site) will be described as "Aboriginal" according to local preference.]

Risks for adverse outcomes are exaggerated in the very remote Fitzroy Valley of Western Australia where Aboriginal people (from the Bunuba, Walmajarri, Wangkajunga, Nyikina and Gooniyandi language groups) were brought together, disconnected from their country and culture after being forcibly removed from their homelands, and prevented from speaking their languages and practising traditional cultural activities. These are factors that have an ongoing impact on social disadvantage (e.g., poor health and educational outcomes, and high rates of children being placed in out-of-home care) and result in psychological distress, grief, mental illness, distrust of government agencies and low engagement with services (McCalman et al., 2017). There are additional barriers to accessing programs, including long distances and lack of public or private transport, low education and health literacy and extreme climate (Dossetor et al., 2023).

In 2009, with great foresight, local Aboriginal community leaders were concerned that early life trauma (ELT), prenatal alcohol exposure (PAE) and foetal alcohol spectrum disorder (FASD) were impacting local children in the Fitzroy Valley and eroding the future preservation of traditional Aboriginal languages and practices (Fitzpatrick, Oscar et al., 2017). They initiated the Lililwan ("the little ones") FASD prevalence study in collaboration with clinician researchers. The Lililwan study revealed rates of PAE (55%), FASD (19%) and neurodevelopmental impairment in a population-based cohort of school-aged children that were among the highest worldwide (Fitzpatrick et al., 2015; Fitzpatrick, Latimer et al., 2017). Consistent with the literature on the impacts of ELT, PAE and FASD, complex needs and challenging behaviours were highly prevalent in this cohort (Tsang et al., 2017). This supports findings from the 2005 Western Australian Aboriginal Child Health Survey (WACCHS) which identified that nearly a quarter (22%) of children in the Fitzroy Valley were at risk of clinically significant behavioural or emotional problems and that 20% of their family members or carers had experienced seven or more life stressors, including financial problems, illness and death of a family member (Zubrick, Silburn et al., 2005).

In non-Indigenous populations, parenting programs built on the principles of social learning and self-regulation are shown in meta-analysis to be effective in addressing emotional and behavioural problems in children (e.g., Sanders et al., 2014). One such parenting

program with an extensive evidence base is the Triple P Positive Parenting program. With over 200 published studies, and numerous randomised controlled trials examining the program in various populations (Arkan et al., 2020; Job et al., 2022; Özyurt et al., 2019; Ruane et al., 2019), countries (Arkan et al., 2020; Matsumoto et al., 2007; Schulz et al., 2021) and modalities (face to face: Sanders, 1999; online: Day & Sanders, 2018), uniformly reporting positive short- and long-term effects of the program (De Graaf et al., 2008; Nowak & Heinrichs, 2008).

Although less extensive, evidence also supports use of parenting support programs in Indigenous communities (Houlding et al., 2012). Macvean et al. (2017) identified five evidenced-based parenting interventions of varying quality used with Australian Aboriginal and Torres Strait Islander families: the Boomerangs parenting program (Lee et al., 2010); Ngaripirliga' ajirri (Robinson & Tyler, 2006, 2008); Let's Start (Robinson et al., 2009, 2012); the Family Home Visiting program (Sivak et al., 2008); and Group Triple P – Positive Parenting Program (Triple P) tailored for Aboriginal and Torres Strait Islander families (Turner et al., 2007). In a randomised controlled trial of Group Indigenous Triple P, Turner et al. (2007) reported a significant decrease in challenging child behaviours and less reliance on dysfunctional parenting practices following the intervention compared with waitlist families. Similarly, Māori parents who participated in a culturally adapted version of Triple P discussion groups reported significant improvements in child behaviour and reduced interparental conflict (Keown et al., 2018). Both studies reported high levels of parental satisfaction with the cultural fit and outcomes of the programs.

Despite the availability of evidence-based parenting programs, Australian estimates indicate that fewer than 20% of parents with a child at elevated risk of poor social-emotional wellbeing and behavioural issues access appropriate services (Warren et al., 2020) and as few as 19% of children diagnosed with mental health disorders (e.g., conduct disorder) have their needs for help fully met (Johnson et al., 2017). Access for Aboriginal and Torres Strait Islander families to allied health or mental health care workers is historically low (Sanders et al., 1999). However, Indigenous families also have many strengths including strong bonds between extended family members and traditional cultural norms of child rearing, which can be supported through family centred services.

There has been a move towards applying a public health approach to support parents at a population level by making evidence-based parenting programs widely accessible (Sanders, 2008). To ensure that programs are successful when deployed, Sanders and Kirby (2014) stressed the importance of program developers engaging fully with local communities to ensure a strong ecological fit of a program to the local context, taking steps to offer flexible delivery of programs to adapt to local needs and context, having a range of trusted providers, and ensuring that programs are effective and sustainable. Turner and Sanders (2007) propose that for parenting programs to be successful across cultures, they must be sensitive to the sociocultural context in which they are being delivered. The critical role of Elders, local professionals, and community members in tailoring programs for the unique cultural context of each community is also highlighted (Sanders & Turner, 2005). This is especially important where current disadvantage and intergenerational trauma can significantly impact parenting and personal coping skills (Turner et al., 2017) and the capacity for self-regulation (Sanders et al., 2019).

The present research was conducted at the request of Aboriginal leaders to address the pervasive emotional and behavioural problems identified in children in the Fitzroy Valley. The initiative was named Jandu Yani U, meaning "for all families" in the local Bunuba language. In selecting Indigenous Triple P, it was recognised that the cultural adaptation of the program and its implementation approach was valued and was as critical as the intervention itself. Leaders requested that the parenting program be offered universally to all families in the Fitzroy Valley, not restricted to families known to have children with complex or challenging behaviours. To our knowledge, this is the first study to evaluate the implementation of Indigenous Triple P in very remote communities with high rates of ELT, PAE and FASD.

Illustrative of the strength of this community, the study was led by an Aboriginal organisation (Marninwarntikura Women's Resource Centre) in partnership with clinicians and researchers from Sydney University and The University of Queensland and followed extensive consultation with Aboriginal Elders, local Aboriginal-controlled organisations, the Jandu Yani U advisory group and community members. The aim of the study was to assess the outcomes and cultural acceptability of a collaborative, community-led approach to tailoring the delivery of Triple P for local families. Specifically, we aimed to document the effects of Triple P on child, parent and carer outcomes. Caregiving structures vary in different communities, with extended family members often playing a parenting role: henceforth all participants will be referred to as "carers" to honour their responsibility in

a parenting role, regardless of their direct relationship to the child. We hypothesised that there would be significant improvements in rates of prosocial and challenging behaviours in children and improvements in carers' parenting practices, wellbeing, sense of self-efficacy in responding to children's complex needs and challenging behaviours, and sense of empowerment. We also predicted that Indigenous Triple P would be culturally acceptable and relevant to families.

Method

The protocols and methods for this project have been described in detail elsewhere (Andersson et al., 2019). In brief, the project was initiated, co-designed and jointly led by Aboriginal leaders and carried out between October 2014 and June 2019 with guidance from an Aboriginal advisory group. Stage One (2015–2016) involved extensive community consultation to gain community consent and guide local tailoring of the research, Triple P, and the implementation strategy. The engagement and consultation process (McIlduff et al., 2020) and program adaptations (Andersson et al., 2019) are previously described. In Stage Two (2016–2017), 38 local service providers working with families in the Fitzroy Valley were recruited through local organisations and commenced Provider Training in Indigenous Triple P (Turner et al., 2007) and Stepping Stones Triple P (Sanders et al., 2004). Of these, 36 (95%) completed training and accreditation to become "parent coaches", including individuals working in community services (46%), education (23%), health (15%), employment services (5%) and psychology (3%). Parent coach training outcomes are discussed elsewhere (McIlduff et al., 2022). Stage Three (2016–2019) encompassed the roll out of Triple P and is the subject of the present paper. Stage Four (2019) involved a collaborative process for disseminating results to professionals, families and communities in the Fitzroy Valley, and the scientific community.

Procedures

Ethics

The study was approved by the University of Sydney Human Research Ethics Committee (No. 2014/818), Western Australian Country Health Ethics Committee (No. 2015/21), Western Australian Aboriginal Health Ethics Committee (No. 638) and the Kimberley Aboriginal Health Planning Forum (No. 2015/012) in adherence with the amended 1964 Helsinki declaration.

Recruitment and consent

Families with children up to 15 years of age and living in the Fitzroy Valley were invited to attend Triple P and were eligible to participate in the research. The population is quite homogeneous, with predominantly Aboriginal families living with socioeconomic disadvantage, high rates of FASD and poor access to services (Dossetor et al., 2019; Fitzpatrick, Latimer et al., 2017). The 2021 Census (Commonwealth of Australia, 2021) recorded 170 Aboriginal and/or Torres Strait Islander families in Fitzroy Crossing (270 parents). The program was made universally available to normalise and destigmatise parenting support and ensure the widest possible reach. Recruitment methods included both organisation referral and self-referral through word-of-mouth or carer-to-carer recommendation, consistent with a community-led snowballing technique (Sadler et al.,2010). Interested carers were visited by local community navigators (Aboriginal research assistants) who explain the purpose and process of the research. Participant information statements were read aloud in English, or the carer's preferred language. Once carers understood the project aims, that participation is voluntary, that they could withdraw at any time without penalty, and have all their questions answered, written informed consent was obtained. Following consent, pre-assessment surveys were completed, and the parenting program was delivered at times and locations suitable to families.

Participants

Interest in the study was expressed by 43 carers of children aged 2–15 years (16% of the Aboriginal parent population; 24% of families) and all completed pre-assessment questionnaires. Of these, 30 (70%) participated in Triple P; 13 did not start the program for various reasons (see participant flow in Figure 1). This 30% non-attendance rate is similar to that found in a meta-analytic review of parenting interventions which showed that 25% of parents dropped out prior to commencement (Chacko et al., 2016).

No significant demographic differences were found between carers who did and did not start Triple P (see Table 1 for participant demographics). However, these significance tests should be interpreted with some caution in view of the small cell sizes. For example, when reviewing the proportion of carers who did participate, it was apparent that they were less likely to be working full time. The sample comprised 28 mothers (93.3%), one father (3.3%) and one great-grandmother (3.3%). Although some were from the same family group, each answered questionnaires about

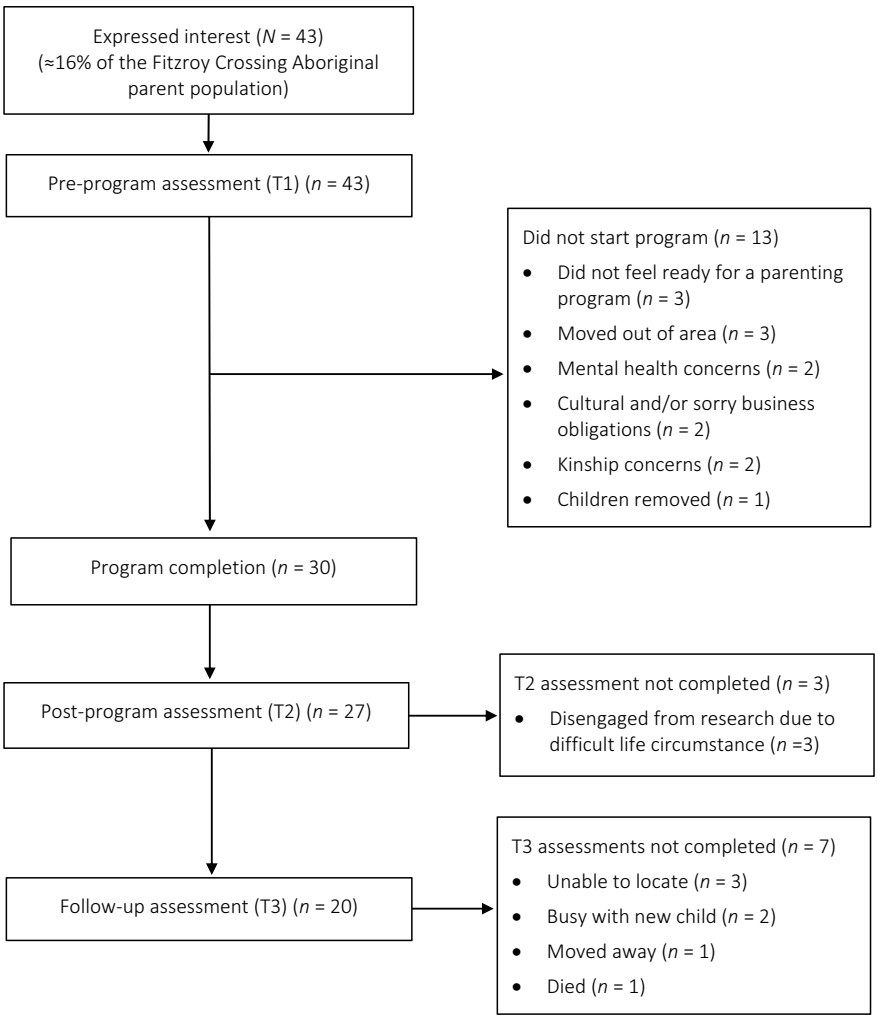

Figure 1. Participant flow and reasons for attrition. An additional 8 carers completed the program during the trial period but did not consent to data collection. By the end of the project, 80 additional parents and family members (equivalent to over 50% of the Aboriginal parenting population) expressed interest in participating in the program in the future.

a different individual target child in whom they identified behaviours of concern. The number of people living in the child's home ranged from 2 to 12 ($M = 5$; $SD = 2.22$) and the number of children aged between 2 and 15 years living in the home (including the target child), ranged from 1 to 6 ($M = 2$; $SD = 1.28$). These were indicative of local population demographics.

Intervention

Triple P is an evidence-based system of parenting programs that uses a self-regulatory framework to encourage positive and responsive parent–child relationships, promote children's development and guide their behaviour. The advisory group selected Indigenous Group Triple P (Turner et al., 2015) as the most appropriate program for Fitzroy Valley families as it had been shown to be effective as a universal intervention (Zubrick, Ward et al., 2005), and had been tailored for Aboriginal and Torres Strait Islander families (Houlding et al., 2012; Turner et al., 2007).

Triple P covers 17 core positive parenting strategies that promote social competence and self-regulation (Sanders, 2012) and has been shown to increase parenting skills and confidence and decrease challenging child behaviour in the short and longer term (e.g., Zubrick, Ward et al., 2005). Sessions addressed positive parent–child relationships and positive parenting strategies designed to promote child development and respond calmly and consistently to guide challenging behaviour. These include using praise, quality time, reward charts, rule setting, clear instructions, and calm, consistent consequences. Parent coaches delivered the program content to families through discussion, visual teaching aids, modelling and role-play. Many families in the area have limited income or

Table 1. Demographic characteristics of participants ($n = 30$) and non-participants ($n = 13$).

	Participants	Non-participants		
Variable	*M* (SD)	*M* (SD)	*F* (df)	*p*
Child age (years)	6.83 (4.11)	6.77 (4.34)	0.002 (1,41)	0.963
Carer age (years)	31.04 (7.65)	3.42 (6.63)	0.059 (1,38)	0.809
	n (%)	n (%)	X^2	p
Child gender			1.685	0.219
Male	19 (63.3)	9 (69.2)		
Female	11 (36.7)	4 (3.8)		
Participant gender			1.177	0.465
Male	1 (3.3)	0 (.0)		
Female	29 (96.7)	13 (1.0)		
Indigenous status of family			0.895	0.639
Aboriginal and/or Torres Strait Islander	28 (93.3)	12 (92.3)		
Other	2 (6.7)	1 (7.7)		
Preferred Language			4.178	0.382
English	17 (56.7)	7 (53.8)		
Kriol	8 (26.7)	2 (15.4)		
Bunuba	1 (3.3)	1 (7.7)		
Other	3 (1.0)	3 (23.1)		
Family composition			0.953	0.917
Biological parents	9 (3.0)	6 (46.2)		
Sole parent	9 (3.0)	2 (15.4)		
More than one generation	11 (36.7)	3 (23.1)		
Other	1 (3.3)	2 (15.4)		
Marital status			1.572	0.814
Married/de facto	10 (33.3)	5 (38.46)		
Single/divorced/separated	20 (66.6)	8 (61.5)		
Education			3.366	0.499
High school or less	23 (76.7)	7 (53.8)		
TAFE/trade	6 (2.0)	5 (38.5)		
Tertiary	1 (3.3)	1 (7.7)		
Employment			4.516	0.211
Full-time	3 (1.0)	5 (38.5)		
Part-time/casual	6 (2.0)	2 (15.4)		
Not working	21 (7.0)	6 (46.2)		
Financial concerns			1.297	0.523
Yes	6 (20)	2 (15.4)		
No	23 (76.7)	11 (84.6)		
No response	1(3.3)	0 (.0)		

F = univariate ANOVA effect for group; X^2 = Pearson's chi-square.

limited access to resources, so resource packs including paper, colouring pencils and stickers were given to carers to allow them to practise strategies at home.

In view of the known high rates of FASD and neurodevelopmental impairment in the Fitzroy Valley, additional strategies from Stepping Stones Triple P (Sanders et al., 2009), a program designed to address emotional and behavioural problems in children with developmental disabilities, were added to the program.

Resources developed for Indigenous Triple P, including demonstration video (Turner & Sanders, 2007), workbook (Turner et al., 2006a) and presentation aids (Turner et al., 2006b) were used. Based on advisory group recommendations. Based on program review and workshopping with the advisory group, tailoring for the Fitzroy Valley included developing a localised carer workbook with brief text and simple language (as English may be the second, third or fourth language spoken in participating families) and included images of local families to represent the context and ensure cultural relevance. Although these are surface-level adaptations, deeper level attention to the cultural values and practices of participants was navigated by the local practitioners with the support of trainers and mentors. The aim was to ensure fidelity to core program content with flexible delivery (e.g., language, pace, session length, location, examples used, active skills practice) and focusing on parents' own goals. The program was delivered according to family preference (in individual or group sessions) by two parent coaches, one of whom was always a local Aboriginal person. Program sessions were held in spaces preferred by participants, including in their home, the Baya Gawiy Buga Yani Jandu Yani U Child and Parent Centre, service organisation offices, communal kitchens in outlying communities, or on country.

Follow-up sessions were conducted, in person, fortnightly to provide additional support as needed. Data were collected by a local community navigator and researcher using a semi-structured interview format to allow information gathering through storytelling and promote holistic understanding of each carer's experience.

Measures

A brief overview of the measures is provided below, and a detailed protocol is published (Andersson et al., 2019). These standardised measures were selected to evaluate the key outcomes targeted by the community: child adjustment, parenting practices and confidence, carer adjustment and empowerment, and acceptability of the program. They have previously been used (although not normed) with Aboriginal and Torres Strait Islander families and could be delivered via interview ("yarning") as appropriate where there were literacy or language barriers.

Child outcomes

The *Eyberg Child Behaviour Inventory* (ECBI; Eyberg & Pincus, 1999) is a 36-item parent-report measure of disruptive behaviour in children aged 2–16 years. Parents rate the number of behaviours they see as a problem (Problem scale) and the frequency of disruptive behaviours (Intensity scale).

The *Child Adjustment and Parent Efficacy Scale-Developmental Disability* (CAPES-DD; Emser et al., 2016) includes 24 items relating to emotional and behavioural concerns and prosocial child behaviour.

The *Goal Achievement Scale* (GAS; Hudson et al., 1995) was used to enable carers to set personal goals for change and track the extent of goal achievement from 0% (baseline rate of behaviour, such as following one of five instructions) to 100% (such as following five of five instructions). This allows a single metric of success to be produced for a range of different target behaviours across groups (Matthews & Hudson, 2001), including goals to decrease a problem behaviour or to increase a prosocial behaviour. The GAS was devised with the advisory group as a pictorial scale resembling a 10 cm thermometer with progress marked and measured to convert to a numerical score (see example in Figure 2).

Carer outcomes

The *Parenting Scale* (PS; Arnold et al., 1993) measures unhelpful parenting styles such as laxness (permissive, inconsistent discipline), over-reactivity (authoritarian discipline, anger, irritability) and hostility (use of verbal or physical force).

The *CAPES-DD* (Emser et al., 2016) includes a measure of self-rated self-efficacy or confidence in managing child emotional and behavioural difficulties.

A short 21-item form of the *Depression-Anxiety-Stress Scales* (Lovibond & Lovibond, 1995) was used to assess symptoms of depression, anxiety and stress in carers.

The *Family Empowerment Scale* (co-designed by the advisory group and Author Cari McIlduff) is based on Spreitzer's scale (Spreitzer, 1995) and assesses carers' perceptions of their influence (or sense of having a voice) in their communities and within their families.

Program satisfaction

A *Satisfaction Questionnaire* adapted from the *Therapy Attitude Inventory* (Eyberg, 1993) was included post-intervention to assess satisfaction with the quality and cultural relevance of parent training programs,

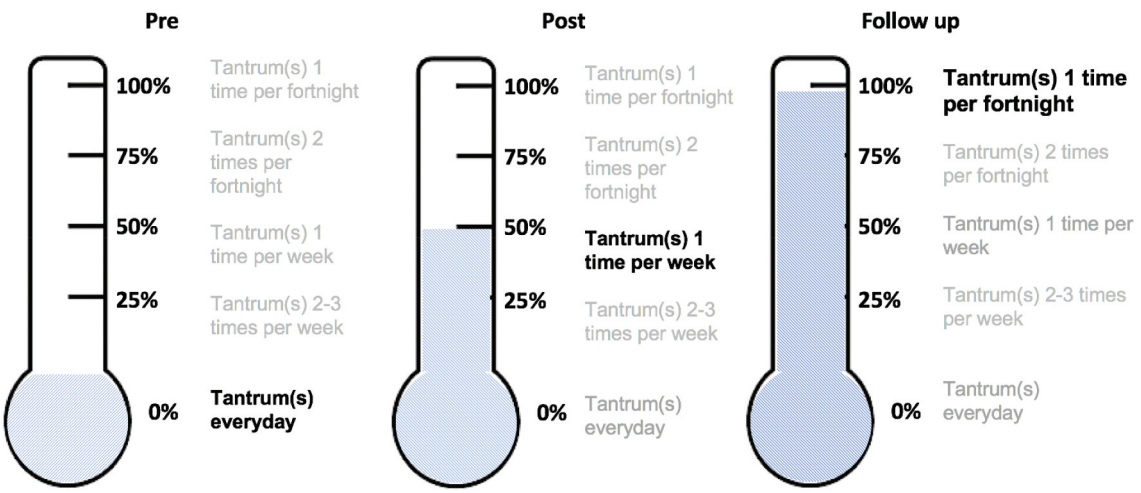

Figure 2. Example goal achievement scale.

and how well the program met the carer's needs. The measure also included qualitative feedback about the program experience and outcomes.

Statistical analysis

Preliminary analyses were conducted to compare demographic variables in families who did and did not start the program (see Table 1). Univariate ANOVA was applied to continuous variables, and a chi-squared test to categorical variables.

To assess the longitudinal outcomes of the program, data were analysed using Generalised Estimating Equations (GEE) in SPSS version 26 (IBM Corp, 2019). This analytic method allows the measurement of population-averaged estimates while accounting for the dependency between repeated measurements (Liang & Zeger, 1986). The GEE method is robust and efficient for treating missing data in longitudinal studies and is valuable when data are not available for each assessment point for a participant (Wang, 2014).

Assessments were obtained at three time points: immediately before engaging in Triple P (pre); 2 weeks after completing Triple P (post); and at follow-up, an average of 8 months ($M = 8.1$; $SD = 3.2$; range 5–17 months) after completing Triple P (follow-up; FU). For measures with a statistically significant change at FU ($p < .05$), Chi-squared analysis was used to assess the clinical significance of change by comparing the proportion of participants moving from the clinically elevated to non-clinical range from pre to FU using published clinical cut-offs (Arnold et al., 1993; Lovibond & Lovibond, 1995; Morawska et al., 2014). As empowerment was assessed only at pre- and post-assessment, a pairwise t-test was used for this measure. Effect sizes (Cohen's *d*) were also calculated.

Results

Means for child and carer outcome measures pre- and post-program and at FU appear in Table 2, along with the ß coefficient, confidence intervals and significance values for the GEE time effect and effect sizes.

Short-term effects

There were no significant changes observed on self-report questionnaire measures of child behaviour post-program. However, carers reported significant reductions in unhelpful parenting approaches on the PS Over-reactivity and Hostility scales, with small and medium effect sizes, respectively. There were no significant improvements in carer wellbeing immediately after program participation. However,

Table 2. Child and carer outcomes across time points.

	Pre	Post	FU	Pre to Post Time Effects			Pre to FU Time Effects		
Measure	*M* (SD)	*M* (SD)	*M* (SD)	ß (CI)	*p*	*d*	ß (CI)	*p*	*d*
Child Outcomes									
ECBI	*n* = 27	*n* = 26	*n* = 18						
Intensity	107.81 (42.01)	94.92 (36.94)	82.67 (29.34)	−12.50 (−27.68–2.68)	0.107	0.30	−25.89 (−46.235 to −5.561)	0.013*	0.57
Problem	8.65 (9.88)	6.14 (8.55)	1.61 (2.36)	−2.73 (−5.91–0.448)	0.092	0.25	−7.64 (−11.78 to −3.50)	<0.001**	0.68
CAPES-DD	*n* = 29	*n* = 26	*n* = 19						
Emotions	31.17 (10.28)	31.27 (9.86)	29.95 (6.98)	0.550 (−2.65–3.75)	0.736	−0.01	−2.12 (−5.05–0.81)	0.157	0.11
Behaviour	13.27 (17.30)	8.65 (5.39)	6.16 (4.11)	−4.63 (−10.69–1.43)	0.134	0.52	−7.418 (−14.04 to −0.74))	0.029*	0.57
Prosocial	16.86 (5.69)	18.69 (4.7)	20.58 (4.56)	1.92 (−0.32–4.15)	0.093	0.31	3.47 (1.16 to 5.79)	0.003**	0.63
GAS	*n* = 23	*n* = 23	*n* = 14						
% goal reached	0 (0)	65.00 (21.16)	66.79 (19.08)	42.43 (25.77–59.10)	0.001**	1.95	40.65 (26.15–55.15)	0.001**	2.14
Carer Outcomes									
PS	*n* = 30	*n* = 27	*n* = 20						
Laxness	3.44 (0.89)	3.10 (0.81)	3.07 (0.81)	−0.338 (−0.70–0.024)	0.067	0.37	−0.38 (−0.88–0.13)	0.145	0.40
Over-reactivity	3.32 (1.03)	2.82 (0.81)	2.36 (0.77)	−0.49 (−0.90 to −0.75)	0.021*	0.47	−0.92 (−1.33 to −0.92)	<0.001**	0.89
Hostility	4.50 (0.92)	3.76 (0.89)	3.59 (0.88)	−0.74 (−1.18 to −0.30)	0.001**	0.78	−0.91 (−1.41 to −0.40)	<0.001**	0.95
CAPES-DD	*n* = 23	*n* = 21	*n* = 18						
Self-efficacy	133.22 (42.43)	138.95 (43.45)	152.94 (12.95)	9.16 (−7.87–26.19)	0.292	0.13	20.34 (5.74–34.94)	0.006**	0.45
DASS	*n* = 30	*n* = 27	*n* = 20						
Depression	13.60 (12.57)	10.67 (10.18)	9.30 (8.52)	−3.08 (−8.06–1.90)	0.226	0.26	−3.86 (−8.43–0.72)	0.098	0.41
Anxiety	12.00 (12.00)	9.56 (9.60)	7.70 (8.21)	−2.56 (−7.07–1.94)	0.265	0.22	−5.52 (−8.66 to −2.38)	<0.001**	0.42
Stress	15.67 (13.51)	11.85 (9.33)	10.20 (8.63)	−3.93 (−9.00–1.14)	0.128	0.32	−3.84 (−8.50–0.81)	0.105	0.48
	M (SD)	*M* (SD)		*t* (df)	p	*d*			
Empowerment	*n* = 30	*n* = 26							
	5.36 (0.79)	6.08 (0.78)	–	−5.12 (25)	<0.001*	0.92			

ECBI = Eyberg Child Behaviour Inventory; CAPES-DD = Child Adjustment and Parent Efficacy Scale – Developmental Disability; GAS = Goal Achievement Scale; PS = Parenting Scale; DASS = Depression-Anxiety-Stress Scales.
* $p < 0.05$; ** $p < 0.01$.

there was a significant increase in carer empowerment following program participation, with a large effect size, despite high scores at baseline. The quantitative data were supported by qualitative reports from family members:

> Jandu Yani U made me far more confident because, well you know how we grow up, we just hit, my mother used to hit us. But now that I had my own daughter I just wanna talk to her, you know, when she grows older. (Carer 1)

Longer-term effects

A significant decrease in the number of challenging child behaviours was reported at 8-month FU on the ECBI Problem scale and CAPES-DD Problem scale and on the frequency of challenging child behaviour (ECBI Intensity scale), with medium effect sizes. Prosocial child behaviour also significantly increased from pre to FU according to the CAPES-DD prosocial scale, with a medium effect size.

A significant decrease in dysfunctional parenting styles observed immediately following participation in Triple P was maintained at FU (with even larger effect sizes demonstrated for both the PS Over-reactivity and Hostility subscales). In addition, carers reported a significant increase in confidence (CAPES-DD Self-efficacy scale), and a significant decrease in anxiety (DASS) from pre to FU, both indicating small effects. Approximately 50% of carers reported clinically elevated depressive symptomology at all three time points, but there was large variability in scores. There were no significant group changes in carer rated levels of depression over time. Similarly, just over 40% of family members reported clinically elevated levels of stress at pre. Although this was reduced to 30% by FU, the mean decrease in symptom severity was not statistically significant.

Goal achievement

Various goals for change were set by families and incremental improvements were made between pre and FU (see Table 2). Goals included: reducing challenging behaviours (e.g., being uncooperative, temper outbursts, hitting others, poor eating habits; $n = 17$); improving school attendance ($n = 5$); improving communication skills ($n = 2$) and improving bedtime habits ($n = 1$). Immediately after program participation, significant progress towards attaining set goals was reported (average level of goal attainment 65%), and this was maintained at FU (average level of goal attainment 66.79%). The change was significant at both post and FU, with very large effect sizes.

Clinical significance of change

While the above analyses examined statistically significant intervention effects, they do not explore clinically meaningful change (i.e., the extent of change from the clinical to nonclinical range following intervention). For the measures where statistically significant change was observed at FU, and clinical cut-offs were available, clinically significant change was examined (see Table 3). Note, this is a general exploration of trends as the measures used have not been normed specifically for Indigenous communities. Analyses of the proportion of participants moving from the clinical to nonclinical range (Kendall et al., 1999) were conducted, and clinically meaningful improvement (i.e., a statistically significant proportion moving

Table 3. Clinically significant change at follow up (FU).

Measure	Pre Clinical Range Proportion (%)	FU Clinical Range Proportion (%)	Pre to FU Time Effects	
			$X^2(df)$	p
Clinical Change				
ECBI				
Intensity	9/27 (33.3)	1/18 (5.6)	4.82 (1)	0.028*
Problem	5/23 (21.7)	0/18 (.0)	4.46 (1)	0.035*
CAPES-DD				
Behaviour	20/29 (68.9)	9/19 (47.4)	2.24 (1)	0.135
PS				
Over-reactivity	9/30 (3.0)	1/20 (5.0)	4.69 (1)	0.030*
Hostility	30/30 (1.0)	18/20 (9.0)	3.16 (1)	0.077
DASS				
Anxiety	17/30 (56.7)	7/20 (35.0)	2.26 (1)	0.133

ECBI = Eyberg Child Behaviour Inventory; CAPES – DD = Child Adjustment and Parent Efficacy Scale – Developmental Disability; PS = Parenting Scale; DASS = Depression-Anxiety-Stress Scales.
*$p < .05$; **$p < .01$.

from the clinical to the non-clinical range) was evident for the intensity and number of problematic child behaviours and parental over-reactivity.

Program satisfaction

The mean program satisfaction rating was high (M = 73.24; SD = 8.36; maximum score 91) and greater than reported in previously piloted trials of Indigenous Triple P (M = 68.50; SD = 10.08) (Turner et al., 2007). Most carers rated the quality of the service provided as "good" or higher (92%); indicated that the program had helped them manage their child's challenging behaviour (92%) and reported that they were "satisfied/very satisfied" overall with the program (96%). There were also high ratings of the cultural fit of the program and relevance in the community context (M = 18.2; SD = 2.04; maximum score 21). This indicates a high level of satisfaction with the quality and acceptability of Triple P and how well the program strategies met the carer's and child's needs.

Qualitative reports from family members mirrored the quantitative data and reflected the satisfaction they felt about the program. For example: "My mother was introduced to this program, and she's been hitting, hurting children [in the past], but now she's speaking to them, good way ya know" (Carer 3); and "I feel so blessed that I had done this training. It's a great opportunity … A lot of people, they used to say parenting doesn't come with a handbook. Well, hello everybody, Triple P is the handbook" (Carer 4).

Moreover, participants identified that the local tailoring of the program contributed to their satisfaction. This included the method of program delivery recommended by the community ("the two-ways of knowing") in which the program was delivered with at least one local Aboriginal parent coach: "No offence, but do you think if a Kartiya [non-Indigenous person] was teaching this that so many families would be interested? I wouldn't, but no offence" (Carer 2).

Discussion

Triple P has been shown to improve child and carer outcomes in Indigenous families in Australia, New Zealand and Canada in urban and regional town settings (Houlding et al., 2012; Keown et al., 2018; Turner et al., 2007), but its feasibility in very remote communities was previously unknown. In the first such study, we introduced and demonstrated the feasibility of community-tailored Indigenous Triple P in very remote Aboriginal communities of the Fitzroy Valley, Western Australia where there are high rates of PAE, FASD and ELT.

Our results are consistent with those demonstrated in randomised controlled trials of Indigenous Triple P in urban Australia (Turner et al., 2007) and New Zealand (Keown et al., 2018). As hypothesised, our primary analysis showed that carers who participated in the program reported significantly lower frequency and number of challenging child behaviours and increased prosocial behaviour by 8-month follow-up, with a significant shift from the clinical range to the non-clinical range on the frequency and number of problem behaviours measured using the ECBI. There was an immediate significant decline in the use of dysfunctional parenting practices (over-reactivity and hostility) post program, which was maintained at follow-up, with a significant shift from the clinical to the non-clinical range on over-reactivity. The wellbeing of family members also improved: levels of self-rated anxiety declined by follow-up.

Although approximately 50% of carers reported clinically significant depressive symptomology, no significant improvement in symptoms of depression or stress was observed. As depression can be linked to increased self-doubt, reduced energy and capacity to be patient and available to children, this finding indicates a potential need for individual carer mental health support in addition to parenting support. However, it should be noted that the standardised DASS measure and clinical cut-offs were developed using national rather than Indigenous cohorts, and that more research is needed to ensure accurate assessment of mental health and wellbeing in Indigenous communities. Carers did report significant improvements in feelings of self-efficacy and empowerment. Finally, there were high levels of satisfaction with the program and all participants believed that the program and resources were culturally appropriate and relevant to their local community.

A key strength of this study is that all families in the Fitzroy Valley who commenced Triple P completed the entire program. This contrasts with an average 26% drop out during parenting programs (Chacko et al., 2016), and an urban trial where only 61% of families completed all core sessions (Turner et al., 2007). There are several possible explanations for our high completion rate. Firstly, the Jandu Yani U project was prioritised and initiated by Aboriginal leaders and local Aboriginal people were involved in the co-design and implementation of the initiative. Secondly, the University of Sydney (Author Elizabeth Elliott) has built a trusted relationship with this community since 2009, through the Lililwan and

subsequent projects. Thirdly, comprehensive community engagement for the current project ensured a high level of community awareness and acceptance of the program, resulting in provision of both community and individual consent. Fourthly, feedback from participating carers suggests that the use of local facilitators (parent coaches), flexible program delivery (e.g., at times and locations that best suited families) and locally tailored resources (adapted for language and cultural context) helped families feel comfortable about participating in the program and the research. Fifthly, in recognition of the significant barriers families face in very remote communities, a high level of practical support was offered to carers to enable their participation, including childcare, transportation, carer resource packs and meals. Finally, local parent coaches were supported in delivering the program to families by a trained Triple P practitioner (Author Cari McIlduff) who lived in the community for extended periods.

Although the observed improvements in challenging child behaviour and carer outcomes are encouraging, there were several limitations to the current study. Unlike some studies examining the implementation of Triple P, formal recordings of sessions to assess program delivery fidelity were not included in this study because community consultation deemed this inappropriate and potentially damaging to trust and therapeutic relationships in this setting. However, all but two groups were observed by an experienced Triple P practitioner who was mentoring the parent coaches, and provided debriefing and peer supervision that aimed to ensure program fidelity was maintained. As in any trial, selection bias is possible and families who volunteered to participate in the study may be more motivated or better adjusted and thus be more able to engage with the program than others. However, families were both referred and self-referred, and families who participated had similar demographic characteristics to those who did not. Also, the elevated levels of clinically significant depressive and stress symptoms reported by family members at all stages of the program delivery, high rates of unemployment, financial difficulties and low levels of education, suggest that families who participated were likely disadvantaged compared to families in less remote settings. Nevertheless, they benefitted from the program. We also recognise that because this study used a single group design with no control group, we can only describe the outcomes as change over time, not necessarily due to program effects.

Finally, despite the high completion rate for the program, the study sample size was small, limiting the ability to control for potential confounding variables (e.g., child diagnosis). Although there was relatively complete data pre- and post-program, several families were not available at 8-month follow-up (e.g., moved away, sorry business). These are common challenges for research in very remote community settings, attributable in part to the transient nature of the population and the disadvantage experienced by most families. Despite the small number of carers participating directly in the program, interviews with parent coaches identified a ripple effect: in a total population of about 2500, over 530 carers (including extended family) were introduced to at least three positive parenting strategies by parent coaches who shared their new knowledge in organic ways.

Our findings contribute unique data to the limited literature on the feasibility and benefits of bringing evidence-based parenting support programs to Indigenous communities. This is the first study to examine the implementation of a culturally-tailored evidence-based parenting program in very remote Australian Aboriginal communities. Critically, Aboriginal community leadership and the collaborative partnership forged between Aboriginal people, researchers and clinicians, allowed us to address parenting support in response to recognition of challenging child behaviour as a community priority. Community input enabled us to tailor an existing evidence-based parenting program and build community capacity to facilitate its delivery to ensure it was culturally acceptable, linked to improved child and family outcomes, and sustainable in the community. This study provides an example of a community co-design approach to both research and practice. True partnerships between community leaders, service providers, researchers and program developers, can only serve to support the increased reach of culturally acceptable, effective parenting support for all families.

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The Triple P – Positive Parenting Program is owned by The University of Queensland (UQ). The university, through its

main technology transfer company UniQuest Pty Ltd, has licenced Triple P International Pty Ltd (TPI) to publish and disseminate the program worldwide. Royalties from this dissemination are distributed to the Parenting and Family Support Centre, School of Psychology, Faculty of Health and Behavioural Sciences, and contributory authors. No author has any share or ownership in TPI. Karen Turner is a contributory author and receives royalties from TPI. Cari McIlduff was a UQ doctoral candidate during this project. No other authors have any conflict to declare.

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Cari McIlduff, the project implementation coordinator and Ellaina Andersson, the research officer on the Jandu Yani U project made a significant contribution to project coordination, data collection and analysis. Karen Turner is an associate investigator and contributed to the project design and tailoring of program resources. Jadnah Davies and Sue Thomas represent MWRC and the advisory group and provided input into the local tailoring of the research design and intervention delivery. Elizabeth Elliott and Stewart Einfeld are chief investigators and were involved in the conception and management of the project, review and reporting of data. All authors contributed to drafting this paper and have approved the final version.

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