

Response to Select Committee on reproductive, maternal and paediatric health services in Tasmania

January 2024

Grainne O'Loughlin CEO







24th January 2024

Ms Anita Dow MP Chair Select Committee on reproductive, maternal and paediatric health services in Tasmania Parliament of Tasmania

Via email: rmphs@parliament.tas.gov.au

Dear Ms Dow,

Karitane would like to thank the Select Committee for the kind invitation to respond to the Select Committee Inquiry on reproductive, maternal and paediatric health services in Tasmania.

We have reviewed the Terms of Reference and welcome the opportunity to contribute to certain elements where it may be useful and pertinent to your inquiry and subsequent report.

Karitane recognises the significance and importance of the Inquiry and the relevance to future service planning for the families of Tasmania and would also be willing to attend a Hearing should it be required.

Yours sincerely,



Grainne O'Loughlin BSc. (Hons) Sp.Th, MBA, GAICD CEO & Company Secretary

Contact Details:

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About Karitane

- Karitane is recognised as a respected and trusted service leader in child and family health, perinatal infant and child mental health, parenting, preventative and targeted early intervention services in Australia.
- Established in 1923, we recently celebrated our Centenary. Karitane is a NSW Affiliated Health Organisation (AHO) under the governance of the Karitane Board of Directors and through a Service Level Agreement to the NSW Ministry of Health and the South West Sydney Local Health District (SWSLHD). Karitane is also a registered charity and not-for profit/NGO entity.
- Karitane sits at the nexus of the health, social services and early education systems with a
 range of services provided in each domain across NSW and with a growing national footprint
 in Queensland, Tasmania (ForWhen Perinatal Mental Health Navigation Service) and in virtual
 care programs nationally. We are therefore uniquely strategically positioned with a holistic
 purview across the broader child and family ecosystem, as well as our expertise across the
 social determinants of health and integration across the early years sectors.
- We are highly geared towards strategic partnerships and partner with NGOs, pre-schools, schools, universal health service providers, peer organisations, universities, State and Commonwealth Governments, PHNs, corporate organisations and Foundations, who share our values and vision to support the First 2000 Days during pregnancy until a child turns 5 years old
- Karitane receives NSW government, federal government, Medicare, grants, research, donation, philanthropic and own source revenue streams to support comprehensive child and family and perinatal infant and child mental health services, delivering high quality, comprehensive, evidence-based support for families with babies and young children aged 0-5 years.

OUR VISION

Our impact will enable children to have the best start in life.

STRATEGIC DIRECTIONS

OUR PURPOSE

We are trusted early parenting experts empowering families and children to be healthy, confident and resilient.

OUR VALUES



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Our Practice Framework

- Karitane delivers a stepped model of care across universal, secondary and tertiary services designed to match families to the right point of care that meets their needs, at the right time and in the right place across the First 2000 Days. We use a comprehensive triaging model through our Centralised Intake team to achieve the right service match for families.
- Our work is based around the evidence-based Family Partnership Model with a strengthsbased, trauma informed approach that facilitates genuine and effective engagement of all families, including those in disadvantaged communities with complex needs.
- Our work is strongly and specifically aligned to:
 - NSW Brighter Beginnings and the First 2000 Days Framework
 - NSW Building Strong Foundations Program Service Standards
 - National Early Years Strategy (in development)
 - National Children's Mental Health and Wellbeing Strategy
 - Productivity Commission Mental Health Inquiry Report
 - Productivity Commission review of the universal early childhood education and care sector
 - Reconciliation Australia Our RAP Framework
- Karitane is recognised as an innovative leader in the sector and has developed many new models of care and strategic prototypes. We understand that innovation does not happen in a vacuum. To bring about lasting, population-level improvements for children facing adversity, we must foster a collective movement. Karitane is advocating for leaders and change agents to align their agendas, networks, and resources in support of a shared goal, to achieve larger and more sustainable breakthroughs for children and families. We believe that through Communities of Practice, Partnerships and Integrated models of care, together we can design leadership opportunities, produce educational resources, and build individual and organisational capacity to use research to drive new ways of thinking and working.
- Karitane is the industry leader of virtual, digital and hybrid models of care, with innovative online models of intensive support delivered virtually since 2017, attaining client outcomes on par with or better than in-person services and undertaking rigorous academic research to underpin our evolving models of care. This led to securing \$10m investment over 3 years to do a longer pilot of the Virtual Residential Parenting Service opening 20 virtual beds for NSW families.
- Karitane is a strong advocate for hybrid models of care that increase family choice and access to services in the ways that suit them, i.e a blend of in-person and/or virtual care models.

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See Figure 1 for summary of Karitane's Service Offerings over page.







Karitane's Workforce and Capacity Building Activities

- We have partnered with Western Sydney University to deliver the Master in Child & Family Health (Karitane) for over 20 years.
- In addition to providing services to families, Karitane is a respected leader in professional development and training for child and family health professionals.
- We deliver Parent-Child Interaction Therapy training, Family Partnership Model training, toddler workshops, and specialised child and family health professional workshops on nutrition, sleep and settling, brain development and toddlers.
- In collaboration with Parenting Research Centre, we led the NGO Telepractice Venture to build capacity in virtual and hybrid models of care for NGOs in health and social services.
- We are committed to the ongoing professional development and competency skills of our internal workforce offering new graduate training, the Karitane Competency Skills Assessment, undergraduate and postgraduate interdisciplinary student placements (nursing, allied health and medical professionals)
- We have shared our work across our national peer networks though the Australasian Association of Parenting & Child Health (AAPCH) members. I have been the Chair of the AAPCH for the last 5 years and CHaPS is a member of this national peak for early parenting service providers from Australia & New Zealand



SUMMARY OF RECOMMENDATIONS

TERMS OF REFERENCE ITEM

RECOMMENDATION

(a) to assess the adequacy, accessibility and safety of the following services for Tasmanian parents and their children in relation to:—	
(i) reproductive health services;	N/A
(ii) maternal health services;	1.See perinatal mental health section below
(iii) birth trauma;	 Routine offering of birth trauma debriefing resources postnatally. Provide referrals to organisations such as ForWhen or the Australasian Birth Trauma Association to facilitate connection with appropriate counselling services. Utilise CMHNs to provide birth trauma debriefing counselling. Upskilling of midwifery staff to provide this antenatally in subsequent pregnancies. Contact NSW Ministry of Health colleagues – Mrs Deb Willcox Deputy Secretary who may be able to share findings, solutions or early recommendations from the NSW Select Committee on Birth Trauma underway as at December 2023
(iv) workforce shortages;	 Increase training for existing health care professionals to upskill in perinatal mental health Used a stepped-care approach to PIMH care provision, utilising specialist CMHNs, perinatal MH midwives, nurses, and registered counsellors to provider mental health support for lower acuity clients, freeing up clinical and registered psychologists, psychiatrists, and AMHSWs to manage more complex cases. Be open to assistance and innovations from the broader Australian parenting and health ecosystem At the Commonwealth level, encourage review of Medicare item numbers 81000, 81005, and 81010 to extend the number of consultations for non-directive pregnancy counselling services. This would open the workforce pool for organisations such as Gidget House, which require service providers to provide consultations under the Better Access Initiative.



(1)		 The Nursing and Midwifery Board of Australia (NMBA) is conducting briefing sessions with relevant stakeholders to provide updates on the findings of the Maternal Child and Family Health Report from a regulatory perspective commencing in January 2024 and I recommend that Tasmania representatives attend these consultation forums to discuss and understand implications of the workforce findings
(V)	Indemnity Insurance;	• NII
(vi)	perinatal mental health services;	 To provide dedicated inpatient parent-infant mental health services in the major regional services, staffed by suitably skilled and qualified clinicians. Increase Workforce numbers in outpatient THS PIMHS programs to match demand Provision of continuing professional development for clinicians (e.g. nurses, midwives, allied health, counsellors) to upskill and provide quality care for families. Partnerships with organisations like Emerging Minds, COPE, Universities and others that are already (Commonwealth) funded to support workforce capacity building in perinatal mental health Consider microcredentialling of existing workforce and NGO staff to bolster workforce volume and capacity Antenatal - support pregnant women birthing outside of public facilities to seek care through PIMHS if required. Provide clear guidelines on THS websites regarding the referral process into public PIMHS to reduce consumer confusion. Shift the focus of perinatal mental health to recognise the increased risk for perinatal mood and anxiety disorders also experienced by dads and partners. Provide routine mental health screening for partners (including fathers and non-birthing partners) during and after pregnancy, with the capacity for service provision for those at risk of perinatal mood and anxiety disorders. Provide community-based day programs for partners and families. Develop inpatient services that offer a whole-offamily approach that are inclusive for diverse communities.



Increase/maximise CHaPS & referrer engagement with ForWhen Clinical Care Navigations programs. ForWhen Navigators have the combined knowledge of Tasmanianbased service options as well as mainland-based telehealth, peer support programs, and evidence-based digital support programs. This system of Clinical Care Navigation ensures that parents can be provided with a tailored set of service options that are appropriate, affordable, and accessible to them. Navigators support and facilitate service enrolment and provide support for families while waiting for service connection. Further, this <u>alleviates some pressure</u> on Tasmanian public and private services, reduces wait times for clients, and facilitates the provision of culturally appropriate services for clients with particular needs.

Mother (Parent) Baby Unit

- Expand service provision to be parent-infant, not just mother-baby.
- Provide services that are accessible for families from the North and /or North West of the state.
- Separate services from the acute hospital setting. The RHH is not the optimal environment for the long-term provision of such a service. Options such as a unit at the St John's Park development in New Town, for example, could be considered.
- Consider community-based day programs established at services such as CHaPS or CFLCs around the state, providing group support for parents experiencing perinatal mood and anxiety disorders.

Referral pathways

 Clear Client Journey and referral pathways where mental health clinicians, allied health professionals could make direct referrals to mental health services and streamline referral service blockages with communication to key primary care services for planning .
 For example: ForWhen PIMH service provide PIMH expertise and support to health professionals and unwell clients though assessments could be streamlined by permitting direct referrals to mental health services to assist families to access PIMH service in a timely way



(vii) paediatric services for children aged 0-5 years;	 Design a stepped model of care for young children with disruptive behaviours and warm referral pathways Develop processes to identify child developmental and mental health risk early starting from pregnancy and providing tiered services from birth based on risk - embedded within the existing resources and services of the Child and Family Health system is optimal Consider implementation/health prevention for young children with disruptive behaviours using Parent Child Interaction therapy for toddlers (from 12 months) – able to be delivered virtually also with impactful academic clinical outcomes Align referral pathways with Head to Health Hub for Kids and National Children's Mental Health Strategy (2021) 				
(viii) the Child Health and Parenting Service (CHaPS).	 Karitane is happy and has offered to support CHaPS and THS in any way, formally or informally with the steering committee that has been established to look at future focused service models to address barriers to service engagement and increase scope to provide high quality care. ForWhen Navigator or National Director would be delighted to participate in the Statewide Mental Health Services (SMHS) and to the development of an improved integrated approach for the more efficient and effective management of PNMH issues in the North and Northwest regions of Tasmania 				
(b)to examine disparities in the availability of services, staffing and outcomes between:— (i) Tasmania and other Australian states and territories;	 It would be valuable to speak with the Victorian Health Department who conducted a Deloitte study to ascertain how many inpatient residential beds they chose to open in the state. It could be useful to convene all the Health Departments across Australia who manage these services for a discussion/roundtable with AAPCH CEOs? Consider the ratio of beds to births, locations given the geography, equity of access, workforce availability, skill and competency (clinical 				
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governance risks); training, supervision, education, accreditation, financial investment in infrastructure, lead time, consumer input and expectations and so on.

(ii) Tasmanians living in rural, regional • and metropolitan areas

(iii) Tasmanians experiencing socioeconomic disadvantage; and Including Virtual Integrated Care models will further enhance access and system navigation for families and service providers where place-based hubs and workforces do not exist or as an adjunct to place-based initiatives where some, but not all expertise is available

Consider outreach and Mobile Integrated Care Service – these should be multidisciplinary not singular services. A "one-stop shop" integrated mobile service that offers various services that are not available in some of the more remote/rural areas of lower socioeconomic e.g. tailored Young parent programs or First Nations.

 Capitalise on any NGO or health mobile services that are currently in existence and incentivise partnerships and collaborations

 Partner with organisations like Karitane who are experienced working with vulnerable communities, CALD, refugees, First Nations, Young Parents in custody and young parents, and who is an experienced collaborator, partner and integrater.

 Consider establishing a dedicated State-wide service with hubs in the North/North-West and South which include mixed outpatient and inpatient services. Providing GP and nursing led secondary support of families with liaison available from paediatric and psychiatric services if required. They could be integrated/ located within the CFLCs and align well with the National Child and Family Hub network model

 These services would operate as secondary referral centres from CHaPS, GP, Parenting Centre and acute hospital referrers. Their function would be to provide early intervention support to families. This would reduce future load on hospital and mental health services and ensure positive support of families for the first two years of an infant's life.



c) to make recommendations on actions that can be taken by the State S Government to ensure reproductive, maternal and paediatric health and perinatal mental health services meet the needs of Tasmanian parents, families and children.

See pages 21-25



RESPONSE TO TERMS OF REFERENCE

(a) To assess the adequacy, accessibility and safety of the following services for Tasmanian parents and their children in relation to:—

(ii) *maternal health services;* see sections below on perinatal mental health

(iii) birth trauma

The information provided by Karitane's ForWhen clients in Tasmania indicates that **postnatal birth trauma** debriefing is minimal in Tasmanian hospitals and tends to focus only on obstetric and / or neonatal issues. Overwhelmingly, Tasmanian mothers state that they are offered little, if any, opportunity to debrief on the psychological consequences of birth trauma in the days following birth, and absolutely no debriefing in the months following, nor during subsequent pregnancies. The demand for this support is high in the community, and there is little service provision for this outside of private MH providers locally or online peer support programs situated on the mainland. NSW Government has just undertaken an Inquiry into Birth Trauma NSW Ministry of Health colleagues may be able to discuss early findings and recommendations that could have broader applicability, notwithstanding the unique conditions In Tasmania.

Recommendations

- Routine offering of birth trauma debriefing resources postnatally.
- Provide referrals to organisations such as ForWhen or the Australasian Birth Trauma Association to facilitate connection with appropriate counselling services.
- Utilise CMHNs to provide birth trauma debriefing counselling.
- Upskilling of midwifery staff to provide this antenatally in subsequent pregnancies.
- Contact NSW Ministry of Health colleagues Mrs Deb Willcox Deputy Secretary who may be able to share findings, solutions or early recommendations from the NSW Inquiry

(iv) Workforce shortages

Similar to most of Australia, workforce shortages in Child and Family Health Nurses, Psychologists and Psychiatrists is impacting both child and family and perinatal mental health services. It's also creating succession planning issues for experienced managers and senior leaders in the sector. Many Child and Family services have embarked on a variety of workforce and capacity building strategies. Karitane is leading the AAPCH national workforce community of practice so that initiatives can be shared with colleagues across the country including CHaPs. Benchmarking, staff ratios, reasonable workloads, training, capacity building, university partnerships funding for Clinical Nurse Consultants, Clinical Nurse Educators, Competency Frameworks, supervision are all critical elements to achieving a skilled and competent workforce.

My Chair role in AAPCH brings me in close, regular communication with the Director of the CHaPS service so we often discuss workforce challenges/shortages and I am aware of recent initiatives in



Tasmania such as a draft Capability Framework outlining the core knowledge and skills of CFHNs from Novice to Advanced practitioners. Hopefully this will be helpful for roles, responsibilities and professional development. AAPCH colleagues are willing to share competency frameworks and innovative ideas and to compare jurisdictional issues. Many organisations have introduced Skills Assessments to ensure a confident and capable workforce and the clinical safety of parents and babies who may be at escalated risk of physical or mental health deterioriation.

Maternal, Child and Family Health Nurses Australia (MCaFHNA) set nationally recognised best practice standards although as workforce shortages have hit hard across the country new rulings around Midwives training and scope of practice have recently been changed. The Nursing and Midwifery Board of Australia (NMBA) commissioned a comprehensive exploration and review of the relevant literature and regulatory frameworks that govern and influence maternal, child and family health practitioners (nurses and midwives) and their practice in Australia. The review resulted in the *Report: Maternal, Child and Family Health Nurses and Midwives in Australia* (MCFH Report) which is currently being disseminated.

There is a very limited **workforce** in Tasmania to support the perinatal mental health needs of parents, infants, and the family unit. This is further exacerbated by funding models such as the Medicare Better Access Initiative that only rebates services provided by Registered and Clinical Psychologists, Accredited Mental Health Social Workers, and Mental Health Occupational Therapists. The availability of practitioners providing rebatable services could be readily broadened to include other practitioners, such as Credentialled Mental Health Nurses (CMHNs), who are currently able to provide limited services (three consultations) under the Non Directive Pregnancy Counselling Medicare Item Number.

Recommendations:

- Increase training for existing health care professionals to upskill in perinatal mental health
- Used a stepped-care approach to PIMH care provision, utilising specialist CMHNs, perinatal MH midwives, nurses, and registered counsellors to provider mental health support for lower acuity clients, freeing up clinical and registered psychologists, psychiatrists, and AMHSWs to manage more complex cases.
- Be open to assistance and innovations from the broader Australian parenting and health sectors
- At the Commonwealth level, encourage review of Medicare item numbers 81000, 81005, and 81010 to extend the number of consultations for non-directive pregnancy counselling services. This would open the workforce pool for organisations such as Gidget House, which require service providers to provide consultations under the Better Access Initiative.
- The NMBA is conducting briefing sessions with relevant stakeholders to provide updates on the findings of the MCFH Report from a regulatory perspective commencing in January 2024 and I recommend that Tasmania representatives attend these consultation forums to discuss the findings.

(vi) Perinatal mental health services

As the provider of the ForWhen Perinatal Mental Health Navigator Service for Tasmania for the last 3 years, Karitane shares the following observations and insights.



Families in Tasmania are very limited in their capacity to access Perinatal and Infant Mental Health (PIMH) programs in Tasmania. This capacity is affected by multiple geographical and socioeconomic factors, as well as workforce and service delivery centre shortages.

In particular the following factors are of concern:

- **1. PIMHS programs** are situated in Hobart (South), Launceston (North), and Burnie (North West). These are publicly funded, but not universally accessible for the following reasons:
 - They fall under different business groups, and therefore do not have uniform program service provision. In the South, PIMHS is part of Child and Adolescent Mental Health Services (CAMHS), while the North and Northwest fit within Adult Community Mental Health Services. This difference causes confusion for clinicians, referring agents and consumers across the state, and also increases the silo effect of these services.
 - The PIMHS programs are **outpatient** only, with limited support available with inpatient visits to women during birthing episodes (at the RHH, LGH, and NWRH).

Recommendation:

- To provide dedicated inpatient parent-infant mental health services in the major regional services, staffed by suitably skilled and qualified clinicians.
- 2. The outpatient THS PIMHS programs receive high levels of referrals. The demand frequently exceeds service supply, which means it has been necessary during stretched times to raise the inclusion criteria for those programs. This means that women who would previously have been able to access these services may be deemed ineligible for service. Alternative options for seeking help and connecting with services may not always be facilitated for women deemed ineligible.

Recommendations:

- Increase Workforce numbers in outpatient THS PIMHS programs to match demand
- Provision of continuing professional development for clinicians (e.g. nurses, midwives, allied health, counsellors) to upskill and provide quality care for families.
- Partnerships with organisations like Emerging Minds, COPE, Universities and others that are already funded to support workforce capacity building in perinatal mental health
- Consider microcredentialling of existing workforce and NGO staff to bolster workforce volume and capacity

3. Antenatal

Access to the public PIMHS program antenatally is ONLY available to women who are booked as public patients to have their babies at one of the public birthing hospitals. Private patients are only eligible to seek services postnatally.

Recommendations:

- Support pregnant women birthing outside of public facilities to seek care through PIMHS if required.
- Provide clear guidelines on THS websites regarding the referral process into public PIMHS to reduce consumer confusion.
- 4. Existing THS PIMHS programs only accept birthing mothers and infants, thereby excluding the needs of non-birthing parents, including fathers, same-sex partners, and adoptive parents. This



exclusion fails to recognise the growing body of literature that indicates the high risk of mental health concerns in non-birthing parents and reduces the capacity for a whole-of-family approach to improving mental health.

Recommendations:

- Shift the focus of perinatal mental health to recognise the increased risk for perinatal mood and anxiety disorders experienced by dads and partners.
- Provide routine mental health screening for partners (including fathers and non-birthing partners) during and after pregnancy, with the capacity for service provision for those at risk of perinatal mood and anxiety disorders.
- Provide community-based day programs for partners and families.
- Develop inpatient services that offer a whole-of-family approach that are inclusive for diverse communities
- **5. Out of pocket expenses** -while some women with private health insurance and / or have the capacity to pay out of pocket fees to access local perinatal psychology services, the availability of practitioners is extremely limited, with waiting times to book in commonly being 6-10 months.

Recommendations:

Increased use of Clinical Care Navigations programs, such as ForWhen. ForWhen Navigators have the combined knowledge of Tasmanian-based service options as well as mainland-based telehealth, peer support programs, and evidence-based digital support programs. This system of Clinical Care Navigation ensures that parents can be provided with a tailored set of service options that are appropriate, affordable, and accessible to them. Navigators support and facilitate service enrolment and provide support for families while waiting for service connection. Further, this alleviates some pressure on Tasmanian public and private services, reduces wait times for clients, and facilitates the provision of culturally appropriate services for clients with niche needs.

6. Mother (Parent Baby) unit

The closure of **St Helen's Private Hospital** and its 8 MBU beds in 2023 has left a significant gap in perinatal mental health inpatient services in Tasmania. It is recognized that the THS has had to respond in a very short time frame to provide the interim solution of 2-3 beds on K6 at the Royal Hobart Hospital. In the longer term, however, a more comprehensive suite of services is needed.

Recommendations:

- Expand service provision to be parent-infant, not just mother-baby.
- Provide services in the North and / or North West of the state.

- Build a service that is separate to the acute hospital setting. The RHH is not an appropriate environment for the long-term provision of such a service. Options such as a unit at the St John's Park development in New Town, for example, could be considered.

Consider community-based day programs established at services such as CHaPS or CFLCs around the state, providing group support for parents experiencing perinatal mood and anxiety disorders. Karitane would be pleased to be considered as a delivery partner.



Current limited staff and access to a service, variation in entry criteria, wait list concerns for health professionals and families.

Service flow blockages can occur at the GP with wait times and limited Medicare rebates hindering timely Mental health care planning.

Patient experience: feedback shared to the ForWhen service states that "I am unable to find what I need and I'm confused as to where is the correct place to ask for help, I think it's going to cost me too much anyway "

Recommendation:

- A clear health clinical pathway where mental health clinicians, allied health professionals could make direct referrals to mental health services and streamline referral service blockages with communication to key primary care services of the planning .
- For example: ForWhen PIMH service provide PIMH expertise and support to health professionals and unwell clients though assessments could streamline the pathway by making direct referrals and refer directly to mental health services to assist families to access PIMH service in a timely way

(vii) Paediatric services for children aged 0-5 years

Children with neurodevelopmental disorders (NDDs) have five times higher risk of mental health comorbidities; these mental health comorbidities necessitate lifetime mental health service use, Emergency Department presentations and hospitalisations, specialist care and use of psychotropic medication. However, they often do not receive timely assessment and intervention as we currently do not have a way of predicting risk in order to target intervention and supports.

The ability to identify child developmental and mental health risk early starting from pregnancy and providing tiered services from birth based on risk, embedded within the existing resources and services of the Child and Family Health system is optimal. Karitane is engaged in several research projects to:

- Objective 1 Identify early: Determine the most significant bio-psycho-social risk factors and provide targeted monitoring of high-risk pregnancies in order to prevent or mitigate the risk of adverse child neurodevelopmental outcomes.
- Objective 2 Intervene effectively: Assess the effectiveness of a co-designed, integrated, and personalised health care with wraparound social care at scale in the first 1000 days (from pregnancy to 2 years).
- Objective 3 Increase capacity: Increase capacity among clinicians to promote strength-based approaches to improve child and family outcomes and in research-related activities.
- **Objective 4 Integrate knowledge:** Integrate new knowledge through a knowledge translation framework to develop a blueprint for translation of evidence into policy and practice.

The need for evidence-based programs for very young children with behavioural difficulties



Parent-Child Interaction Therapy—Toddler (PCIT-T) is an adaptation of the standard PCIT program, designed specifically for parents and toddlers aged 12-24 months. Like standard PCIT, PCIT-T uses live coaching during parent-toddler play sessions, with a focus on enhancing parenting skills, parenting sensitivity and parent-toddler attachment relationship quality, with an ultimate aim of promoting child social, emotional and mental wellbeing.

Behavioural difficulties in young children often lead to a poor developmental trajectory consisting of ongoing and increasingly significant mental health concerns across the lifetime. This can place tremendous stress and financial burden upon the affected individual, his or her family, and the larger community.

Parent-Child Interaction Therapy (PCIT) is one of the most effective early treatment approaches for early disruptive behaviour concerns for children with moderate-severe disruptive behaviours. There is a large body of evidence demonstrating long-lasting positive parent and child psychological outcomes, and substantial cost savings to the larger community.

I-PCIT (virtual delivery) can form part of a stepped model of care for children across Tasmania and will support the delivery of the goals of the <u>National Children's Mental Health & Wellbeing Strategy</u>, <u>National Action Plan for the Health of Children and Young People 2020-2030</u>, and the "<u>Head to Health Hubs</u>" for children, by providing clear, connected and coordinated pathways of care for children with more complex care needs.

Empirical research now demonstrates that outcomes for internet-based PCIT (I-PCIT) meet, and in some cases, exceed those of clinic-based PCIT. The digital health delivery of PCIT through the I-PCIT adaptation thus now serves to decrease health disparities due to accessibility difficulties between urban and rural families in Australia and has been able to be delivered successfully to families in lockdown during the various waves of the COVID pandemic.

Karitane has pioneered PCIT efforts in NSW since 2005 with the establishment of Australia's first community-based PCIT clinic, and by training dozens of therapists, publishing numerous empirical PCIT research papers, and presenting at international conferences. With support from NSW Health, Karitane established Australia's first I-PCIT clinic for families from rural and remote NSW. Evaluations indicate large treatment effects and high levels of consumer satisfaction, highlighting the potential impact of a larger scale treatment dissemination effort.

Evidence for PCIT-T

Evidence to support the efficacy of individual PCIT-T as an intervention strategy for early-onset behavioural problems has been positive.

- Kohlhoff and Morgan (2014) retrospectively reviewed the outcomes of 29 cases treated with PCIT-T. They reported that toddlers who received PCIT-T showed statistically and clinically significant improvements in child behaviour and that their parents reported feeling less depressed from pre- to post-treatment.
- Kohlhoff et al. (2021) conducted a randomised controlled trial (RCT, n=66) to test outcomes of PCIT-T versus a wait-list control condition. Results showed that parent-child dyads who received PCIT-T had significantly greater gains in terms of increases in positive parenting skills, decreases in negative parenting behaviours, enhanced emotional availability, including sensitivity, and reduced child externalising behaviour. When the sample was followed up 4



months after the completion of PCIT-T treatment, parent and child gains were maintained (Kohlhoff et al., 2020).

Kohlhoff et al (unpublished – manuscript in preparation) conducted a pilot study in 2018-2019 testing I-PCIT-T as an 8-week online program for 15 high-risk families ((e.g., maternal mental ill-health, young parents, low socioeconomic status). Results showed significant changes in parenting skills, parenting sensitivity, parenting self-efficacy, infant attachment, and child behavioural outcomes. A qualitative analysis of interviews with participating parents suggested a high level of consumer satisfaction with the program, and with the online delivery format.

Recommend

- Design a stepped model of care for young children with disruptive behaviours
- Develop processes to identify child developmental and mental health risk early starting from pregnancy and providing tiered services from birth based on risk embedded within the existing resources and services of the Child and Family Health system is optimal
- Consider implementation/health prevention for young children with disruptive behaviours using Parent Child Interaction therapy for toddlers (from 12 months) able to be delivered virtually also with impactful academic clinical outcomes

(viii) The Child Health and Parenting Service (CHaPS).

An opportunity exists for CHaPS and THS to form strategic partnerships with service providers who could enable and support implementation of Tasmania's first comprehensive, long-term, state-wide Child and Youth Wellbeing Strategy, **'It Takes a Tasmanian Village'**, focusing on the first 1000 days of life, and including a key action for CHaPS to implement a **Sustained Nurse Home Visiting Program** to provide support to families with complex needs.

This support could take the form of service provision e.g. for highly specialised services such as Virtual Residential Unit; Virtual Parent Child Interaction Therapy, greater engagement with ForWhen Perinatal Mental Health navigator services, Digital transformation such as digital screening of outcomes, digital triage systems, e-Hubs, Developmental screening tools -Watch Me Grow and outcomes measuring implementation.

This could also include workforce capacity building for perinatal mental health, infant and child mental health, Family Partnership, PCIT training for Child and Family Health Nurses and Psychologists and other enablers.

As part of the AAPCH network, CHaPS can consult peers on workforce matters, benchmarking, resource development, models of care, policies and processes, service redesign, consumer led care, co-design and many other matters we deal with in common across similar service provides in Australia & New Zealand.

Recommend

Exploration of further integration and dealing with any barriers to working effectively with Child and Family Learning Centres, GPs, PHNs, NGOs and other service providers



to ensure we use all resources in the child and family health ecosystem in Tasmania for optimal productivity and impact

Pathway to Perinatal Mental Health N/NW

ForWhen would be delighted to participate in the Statewide Mental Health Services (SMHS) and to the development of an improved integrated approach for the more efficient and effective management of PNMH issues in the North and Northwest regions of Tasmania. As the aim of the collaboration is to strengthen cohesion between and across services in understanding the perinatal mental health continuum and to develop an identified pathway from universal to targeted service provision, the model is very aligned to ForWhen's involvement.

Karitane is happy and has offered to support CHaPS in any way, formally or informally with the steering committee that has been established to look at future focused service models to address barriers to service engagement and increase scope to provide high quality care.

Recommendation

- Karitane is happy and has offered to support CHaPS and THS in any way, formally or informally with the steering committee that has been established to look at future focused service models to address barriers to service engagement and increase scope to provide high quality care.
- ForWhen Navigator or National Director would be delighted to participate in the Statewide Mental Health Services (SMHS) and to the development of an improved integrated approach for the more efficient and effective management of PNMH issues in the North and Northwest regions of Tasmania

(b) To examine disparities in the availability of services, staffing and outcomes between:

(i) Tasmania and other Australian states and territories;

- There is a lack of current data, activity and outcomes benchmarking across the sector. This is something that Karitane is currently working on with the Health Roundtable to establish a Child and Family Health Roundtable where productivity, benchmarking, efficacy and innovation can be explored together through a national lens. I would be happy to provide updates to CHaPS and THS as this work matures
- CHaPS has advised AAPCH peers in late 2023 of their Workload Management Project to support the finalisation of a Workload Management Tool (WMT), in order to calculate nursing staffing levels against client care requirements. Karitane would be pleased to support any benchmarking around staffing ratios and workloads as this continues to be a topic of national interest. We would also welcome any updates on the tool if there is a possibility of adopting or adapting it for peer organisations







It would be valuable to speak with the Victorian Health Department who conducted a Deloitte study to ascertain how many inpatient residential beds they would open in the state.



Consider th	ne ratio
of beds to births, locations given the geography, equity of access, workforce availabili and competency (clinical governance risks); training, supervision, education, accred	ty, skil itation,
financial investment in infrastructure, lead time, consumer input and expectations and	so on
·	

The emergence of Virtual Residential Units and Virtual Residential Parenting Services delivered in NSW and Queensland are of interest and worth further exploration in Tasmania. Whilst trained staff are still required in similar ratios staff can work from remote locations. I attach a very new publication pending (January 2024) in the BMJ conducted by A/Prof Jane Kohlhoff from Karitane/UNSW which compares inpatient residential unit to virtual residential unit. We have been quite surprised by the Virtual Residential Unit scores being better than the in-person unit score and this may see a significant shift in the models of care design of the future.

"Parents who received the virtual program reported improvements from admission to discharge, and from admission to 6-week follow-up, in a range of areas including parenting self-efficacy, empathy, mentalisation, hostility, helplessness, stress, and infant sleep resistance (ps<.05). At 6-weeks, they also reported improvements in emotion and understanding related to their child (p <.05). In contrast to expectation, outcomes at discharge and 6-weeks were not superior in the in-person group. In fact, at 6-weeks, parents who attended the virtual residential group reported significantly lower levels of parenting hostility and greater levels of parenting confidence compared to those in the in-person group (ps<.05). (Kohlhoff et al 2024)

 Tasmania has excellent infrastructure and opportunity to expand existing secondary services with better integration of health services (CHaPS) and NGO partnerships in the Child and Family Learning Centres. Stronger integration of health, social services and education is desirable for families, cost effective and demonstrating clinical efficacy.



• The infrastructure and overhead costs of investing in individual service providers is under review and there have been two DSS inquiries into funding for NGOs and Charities just before Christmas 2023. Collocation, collaboration and integration across the child and family ecosystem is also a better client experience.

This is an emerging model of care across the rest of Australia and of interest to the Commonwealth Government as part of the National Early Years Strategy. Minister Ann Aly recently launched the National Child and Family Hub Network at Karitane in November 2023. Tasmania seems to have a head start with the CFLCs. <u>Child and Family Hubs - National Child & Family Hubs Network</u>

- Families in need of secondary and tertiary supports typically face multiple challenges, and require a range of supports. These challenges are often interwoven, with health concerns impacting on education, and social factors influencing health, etc. Siloed approaches in health, education and social services can impede service access. An integrated approach will result in better access for families, with greater awareness of available services and improved visibility across the ecosystem for all involved. Integrated Child and Family Hubs have two critical roles:
 - improving access to a range of health, education, and social services using a family centred approach; and
 - providing opportunities to build parental capacity and for families to create social connections. The social function of a hub means that there is a natural and safe place for families with young children to meet and connect with other parents and children in their community. We endorse the Network's vision:

"Families are able to walk through a Child and Family Hub's welcoming front door and receive the right care and support for the child and family at the right time, leading to improved and equitable health and development outcomes".

Child and Family Health nurses and perinatal mental health clinicians should be embedded in these hubs.

Virtual integrated care models will further enhance access and system navigation for families and service providers where place-based hubs and workforces do not exist or as an adjunct to place-based initiatives where some, but not all expertise is available

(ii) Tasmanians living in rural, regional and metropolitan areas;

- Including Virtual Integrated Care models will further enhance access and system navigation for families and service providers where place-based hubs and workforces do not exist or as an adjunct to place-based initiatives where some, but not all expertise is available
- Consider outreach and Mobile Integrated Care Service these should be multidisciplinary not singular services. A "one-stop shop" integrated mobile service that offers various services that are not available in so of the more remote/rural areas of lower socioeconomic e.g. tailored Young parent programs or First Nations.
- Capitalise on any mobile services that are currently in existence and incentivise partnerships and collaborations



(iii) Tasmanians experiencing socio-economic disadvantage; and to make recommendations on actions that can be taken by the State Government to ensure reproductive, maternal and paediatric health and perinatal mental health services meet the needs of Tasmanian parents, families and children.

- Tasmanian families are more socially isolated, lacking in supports and financially stressed than at any time in the history and the need for early intervention services has never been higher.
- Partner with organisations like Karitane to establish a dedicated State-wide service with hubs in the North/North-West and South which include mixed outpatient and inpatient services. Providing GP and nursing led secondary support of families with liaison available from paediatric and psychiatric services if required. They could be integrated/ located within the CFLCs and align well with the National Child and Family Hub network model These services would operate as secondary referral centres from CHaPS, GP, Parenting Centre and acute hospital referrers. Their function would be to provide early intervention support to families. This would reduce future load on hospital and mental health services and ensure positive support of families for the first two years of an infant's life.

Opportunities for Tasmania

It is now well accepted that the Early Years sector is vital to the health and wellbeing of children and families. The sector spans multiple traditionally siloed policy areas, including health, education, social and community services, Aboriginal affairs, mental health, and more. We propose that government reform agendas and policy, service commissioning include ways of working that cut across policy areas, to deliver a more integrated and family-centred sector.

Stepped care

- Early Years services should be available along a stepped continuum of care, with universal, proportionate universal, secondary and tertiary services available.
- Effective triage and navigation should be incorporated into every part of the system, so that families in need of additional more intensive services (secondary & tertiary) can be identified and supported to access those services.
- This should include integrated multidisciplinary and interdisciplinary teams, enabling access to a wide variety of supports, with good data sharing so that families do not need to continuously re-tell their story to each provider.
- Stepped care should include soft entry points through universal and self-referral services, including child and family "walk-in" hubs supporting reduced stigma in seeking and accessing help, and enabling service delivery to harder-to-reach families. Tasmania's CFLC seem well placed to assume this role.

Hybrid models of care

- Virtual and hybrid models of care delivered by trained and competent clinicians present an enormous opportunity to increase service accessibility and effectiveness in Tasmania
- There is a continuing perception that virtual care is a second-tier service. Evidence shows that this is not the case. When delivered with appropriate clinical models of care, virtual care delivers outcomes on par with or sometimes exceeding in-person services (see pull-out box: exemplar models). Hybrid models of care enhance flexibility and choice for families.



- The COVID-19 pandemic saw a rapid and fragmented introduction to virtual services across the sector. There is now urgent need to consolidate learnings and improve practice (clinical, governance, data management) to realise gains, meet family expectations, and prevent slippage back to outdated practice.
- A piecemeal approach risks further fragmenting the system, making system navigation harder for families and exacerbating existing access disparity.
- Families must be centred in the introduction and consolidation of new hybrid and virtual models of care. The emphasis must be on enhancing the client experience, not solely on service provider efficiency.
- There is opportunity to invest in development of appropriate clinical and governance models of hybrid models of care across the sector, building on existing successful models, to ensure quality outcomes for families.

Exemplar models of virtual and hybrid services

Internet Parent-Child Interaction Therapy (I-PCIT) - Karitane

Parent-Child Interaction Therapy (PCIT) is a highly effective evidence-based therapy, traditionally delivered in a clinic setting for young children aged 18months- 4years with disruptive behaviours. A core feature is live clinician coaching of parent interactions with their children, using a 2-way mirror and earpiece. I-PCIT is delivered via videocall using consumer-grade technology. Studies show that outcomes attained via I-PCIT sometimes exceed those attained in clinic-based PCIT, likely because the therapy is delivered directly into the home. I-PCIT sessions also require no travel, meaning sessions are more consistently accessible, less disruptive and more convenient for many families across a dispersed geographical area.

Virtual Residential Unit (Karitane)

Residential stays are an effective tertiary parenting support service offered across Australia. In response to the COVID-19 pandemic, residential units were closed. Karitane developed the Virtual Residential Unit, a wrap-around intensive support service delivered to families via videocalls. The NSW Government subsequently invested and enhanced this model of care for NSW families and now the Virtual Residential Parenting Service operates across NSW with NSW Ministry of Health, Karitane and Tresillian partnering on the design, delivery and further evaluation of this model.

Stronger integration of health, social services and education – Integrated Child and Family Hubs & Navigator models

- Families in need of secondary and tertiary supports typically face multiple challenges, and require a range of supports. These challenges are often interwoven, with health concerns impacting on education, and social factors influencing health, etc.
- o Siloed approaches in health, education and social services can impede service access.
- An integrated approach will result in better access for families, with greater awareness of available services and improved visibility across the ecosystem for all involved.
- Including Virtual integrated care models will enhance access and system navigation for families and service providers where place-based hubs and workforces do not exist or as an adjunct to place-based initiatives where some, but not all expertise is available
- Karitane has participated in the National Child and Family Hubs Network submission and is fully aligned with the recommendations contained within that separate submission.
- Specifically, we support Integrated Child and Family Hubs that will provide a 'one stop shop', where families can access a range of supports that improve child development as well as child and family health and wellbeing. Integrated Child and Family Hubs have two critical roles.



improving access to a range of health, education, and social services using a family centred approach; and providing opportunities to build parental capacity and for families to create social connections. The social function of a hub means that there is a natural and safe place for families with young children to meet and connect with other parents and children in their community. We endorse the Network's vision:

"Families are able to walk through a Child and Family Hub's welcoming front door and receive the right care and support for the child and family at the right time, leading to improved and equitable health and development outcomes".

Equitable, diverse, inclusive and welcoming

- All services in the early years must be welcoming for all families.
- First Nations families must have cultural safety to ensure service relevance and effectiveness. Services must be authentically co-designed with First Nations communities.
- Effective services must be inclusive of Cultural and Linguistically Diverse families, LGBTQIA+ families, families with disability, rainbow families, etc.
- The needs of rural and regional families must be considered, especially when this intersects with other types of diversity.
- Fathers and partners have a key role to play in parenting. Support services must be open to and inclusive of partners, and to fathers who are primary carers.

Sustainable funding

- Funding models for the Early Years Sector should enable all families to access the services they need, regardless of where they live. Current funding arrangements are often based on geographic lines, and some families cannot access services because of where they live, including online and virtual services.
- Funding must include allocations for administration, evaluation and service development costs. Too often, staff are expected to work in an under-resourced way that is detrimental to their wellbeing and to the sustainability of the services they deliver (see for example, *Paying What It Takes,* Social Ventures Australia, 2022).
- Secure funding offers more secure jobs for staff, which improves workforce attraction and retention, and thereby improves overall service sustainability, and builds trust with communities.
- More consistency in reporting and administrative requirements for funding would greatly enhance efficiency in administration.

Evidence-based

- Proportionate funding should be available for research, evaluation, and research translation both within organisations and across university partnerships, and also support innovation that is evidence informed.
- Proven models with strong results should be supported to scale with clear mechanisms, pathways and frameworks for how this can be approached and/or considered and achieved. There is current ambiguity as to who to speak with, and how to showcase exemplar bodies of work for government consideration.
- University and academic partnerships support a strong evidence-base for services, enabling strategic prototyping of innovative services, such as Teacher Child Interaction Therapy (TCIT), Parent Child Interaction Therapy (PCIT), Volunteer Family Connect (VFC), and others.

Trained and capable workforce

- Ongoing workforce capacity building is needed across the sector.
- Micro-credentialling through university partners has strong potential to address skill-gaps across the sector, including for the non-medical workforce. For example, a micro-credential in



perinatal infant mental health could support an NGO case worker to attain better outcomes for their clients and grow the workforce volume and capability

- Highly specialised work may be tendered out where it is more effective/efficient to use an external highly trained workforce rather than to try and skill up small cohorts of staff where staff turnover can impact retention of skilled staff.
- Family Partnership Training should be delivered across the Early Years Sector, resulting in a consistent way of engaging with families.
- Consistent competency assessments for all staff are needed to ensure learned skills are applied appropriately when interacting with families.
- Cultural safety training is needed for all staff for both First Nations and CALD communities. This should be a requirement to receive funding.

Co-designed with Parents & Families

- Services should be authentically co-designed, with recognition of power imbalances and what different parties bring to the partnership. This will help to deliver service designs that are family-centred, rather than provider-centred.
- Funding could also be made available for co-design and service design, as this work is often currently undertaken unfunded and haphazardly.
- A centralised repository of co-designed consultations should be established. Many organisations separately set up consumer groups and co-design consultations, and communities, especially First Nations communities, young parent cohorts, CALD groups risk being over consulted by a plethora of well-meaning organisations in the same community. Where feasible, co-design should be undertaken for whole communities in a collaborative shared model with all providers in that area.
- The Government could establish a pool of nationally available Consumer Engagement groups as "go to" resources, with consumers remunerated for their consultation time.

Eliminating access disparities, including:

- Access disparity based on funding arrangements, including for virtual services.
- Access disparity based on travel and communications infrastructure, including improving rural and remote telecommunications infrastructure, and recognising the barriers of travel to access secondary and tertiary services.
- Access disparity based on cultural and emotional safety, ensuring all families are treated well and feel safe and cared for.

Eliminating waitlists through better primary and universal service delivery through:

- Better use of triage with clear consistent pathways for service access and referrals
- **Ensuring access based on clear criteria** so that families who are better served by less intensive services are not artificially escalated to more intensive services.
- **Enhanced funding for secondary services** to prevent escalation and reduce the need for tertiary services. Admission Avoidance and reduce ED presentations
- Better use of universal online parenting programs making use of evidence-based principles such as preventative PCIT, ensuring comprehensive prevention models of care. Maximise collaboration and partnerships to work across the system and reduce duplication between community health and NGO providers
- More sophisticated needs analysis based on demographics, including more infrastructure in regional hubs.



Strategy Enablers for the Tasmanian to consider

Overall improvements to the sector require strong collaboration and partnership. Based on its specific role in the sector, there are some opportunities for the Tasmanian Government to make direct improvements.

- More cohesion across siloed policy areas recognising that stronger collaboration within the sector is sometimes impeded by siloed policy and funding arrangements. A shared framework of effective collaboration led by the THS could deliver much needed cohesion. Effective Commonwealth/State roles and responsibilities that are well articulated with clearer reform and funding demarcations.
- Mapping of programs and availability this is a complex task that must be resourced, centralised (or shared to reduce inefficiency and duplication of effort) and would enable more systematic understanding of need and service gaps. The diversity of services and programs available is not well understood across the system. The non-health services need to be fully mapped, consolidate and review any mapping activities which have been conducted recently or are underway, prioritising C4C, DSS, DoHA, Health and NGO services, and building on work carried out through the PHN network. This will help to ensure new initiatives dovetail/do not conflict and enable excellent practice to be identified, recognised and replicated.
- Measuring outcomes

Outcomes must be measured across individuals, organisations and sector/community wide, with good data governance practices to enable confidence in the data. Good outcome frameworks can be applied across providers – for example, a new outcome framework will be operational across all seven Early Parenting Centre providers in Victoria. This approach is aligned to the Value Based Health Care (VBHC) principles.

Thank you for creating an opportunity to contribute. I look forward to hearing the outcome of the Inquiry and Report.

<END>



Title: A prospective evaluation of parent and child outcomes following admission a 'virtual' early parenting residential program

Running Head: Virtual early parenting residential program evaluation

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Abstract

Objectives. Australian early parenting residential services provide interventions for families experiencing complex early parenting issues. Many services have recently shifted to virtual care models but the clinical effectiveness of such programs is currently unknown. This study sought to test outcomes of a 'virtual' early parenting residential program, and to compare these with those of an in-person program. Design. Prospective cohort study; self-report questionnaires on admission, at discharge, and 6-weeks follow-up. Setting. An early parenting residential unit in Sydney, Australia. Participants. Consecutive series of parentchild dyads admitted to the unit virtually (n=56) or in person (n=44) between August 2021 and January 2022. Interventions. Participants in both groups received a 4-night/5-day intervention program involving access to 24-hour support from a multi-disciplinary team of health professionals. The in-person program was delivered at a residential unit; the virtual program involved provision of support via video calls, phone calls, SMS, and emails. **Primary and Secondary outcome measures.** Infant sleep, parenting self-efficacy (primary outcomes); parenting empathy, emotion, hostility, helplessness, mentalisation, and stress (secondary outcomes). Results. Parents who received the virtual program reported improvements from admission to discharge, and from admission to 6-week follow-up, in a range of areas including parenting self-efficacy, empathy, mentalisation, hostility, helplessness, stress, and infant sleep resistance (ps<.05). At 6-weeks, they also reported improvements in emotion and understanding related to their child (p < .05). In contrast to expectation, outcomes at discharge and 6-weeks were not superior in the in-person group. In fact, at 6-weeks, parents who attended the virtual residential group reported significantly lower levels of parenting hostility and greater levels of parenting confidence compared to those in the in-person group (ps < .05).

Conclusions. Virtual early parenting residential interventions may be effective in bringing positive changes for families, and there is no evidence to suggest that outcomes are inferior to those of in-person programs.

Strengths and Limitations

- The major strength of this study was the prospective design, with a 6-week postdischarge assessment
- Another study strength was the inclusion of multiple relevant outcome measures
- 3. A major study limitation was the lack of a non-treated control group and failure to use a randomised controlled study design
- Additional limitations included lack of longer-term follow-up data, and reliance on self-report measures

Introduction

Infant sleep disturbance (e.g., difficulties settling to sleep and frequent night-time waking) and feeding difficulties occur commonly in the early months of life [1, 2]. These difficulties can be the cause of significant fatigue and distress for many parents [3, 4], and when left untreated, can lead to negative child outcomes including toddler behavioural difficulties [5], anxiety/emotional difficulties in middle childhood [6], and stress and mental health challenges for parents [7-9].

In Australia, early parenting Residential Units (RU) provide support for families struggling with complex issues including infant sleep issues [10]. While families who attend Australian early parenting RUs typically present with child- or parenting-focussed concerns, many also face a range of psychosocial challenges such as poor mental health, lack of social support, domestic violence, relationship issues, birth trauma, and social disadvantage [9-12]. Early parenting RUs are delivered across Australia by a range of different service providers (https://aapch.com.au) and while programs differ with respect to program length and individual program elements, common to all is the provision of 24-hour practical support for parenting self-efficacy, sensitive responsiveness to child cues, and practical skills for supporting infant sleep, settling and feeding. The programs are predominantly nurse-led (Midwives, Child and Family Health Nurses) but within the context of a multi-disciplinary team including Allied Health and Medical staff.

Evidence collected over the past two decades suggests that Australian RU programs lead to significant improvements in a range of areas including parenting confidence, infant sleep and feeding, and parental stress and mental wellbeing [4, 10, 13-16]. Qualitative data further highlight the consumer acceptability of the programs, and positive clinical outcomes [17, 18]. To date, however, data about outcomes of Australian early parenting RUs has related entirely to in-person service delivery. With the onset of the COVID-19 pandemic in 2020, and the associated government mandated social distancing requirements, in-person early parenting residential unit services were ceased for periods of time at many sites. As was the case with health services around the world [19], many Australian early parenting RUs began to offer telehealth ('virtual') RU services during this time. Karitane, an early parenting service provider in New South Wales (NSW), launched a 'Virtual Residential Unit' program within 5-weeks of the onset of the pandemic. The virtual RU offered families a five-day, four-night RU experience from their own homes. Parents connected with virtual RU clinicians via video calls, phone calls, SMS, and emails. They received up to three "virtual home visits" per day from RU nurses, accessed online parenting groups and play sessions, and consulted with Karitane's team of allied health and medical professionals (e.g., paediatrician, general practitioner, psychologist, social worker, etc) as required. As social distancing requirements and stay at home orders ceased, Karitane continued to offer a blended RU service involving a mix of in-person and virtual services. The blended model meant that families could still access the program when they were not able to physically attend the Karitane early parenting RU site due to Covid-19-related issues; it also provided them with the option to choose the in-person or virtual RU service, depending on personal preference and/or practical issues in their daily life (e.g., travel distance, partner work commitments and other children to look after).

To date, while there has not been any randomised controlled trials to test effectiveness of in-person early parenting RU programs, several open-trial studies have documented positive program outcomes [4, 13-16]. In contrast, no studies have examined outcomes of virtual RU programs, and so effectiveness of this new approach is currently unknown. The current exploratory pilot study therefore had two major aims. The first aim was to explore outcomes associated with the VRU program. Specifically, we hypothesised that at discharge and 6-weeks follow-up, families who engaged in the VRU would show i) greater levels of parenting self-efficacy, empathy and emotional understanding about the child, and reflective functioning, ii) lower levels of parental hostility, helplessness, and stress, and iii) lower levels of child sleep resistance (hypothesis 1). The second aim was to explore differences in the outcomes of the in-person and virtual RU programs. Given that the VRU comprised less faceto-face hours (i.e., families were not onsite with access to health professionals 24 hours per day) and involved no in-person contact with care providers, we hypothesised that at discharge and 6-weeks follow-up, outcomes on the domains listed above would be superior to those of the VRU (hypothesis 2).

Method

Participants

Participants were 100 English-speaking mothers whose children were admitted to the Karitane Residential early parenting RU program during a 6-month period (Aug 2021 – Jan 2022). Of the 100 participants, 44 attended the in-person RU program and 56 attended the VRU.

Intervention description

In -person RU. The Karitane RU program is a 4-night/5-day residential program delivered by a multidisciplinary team of child and family health nurses and midwives (CFHN/Ms), allied health professionals (social workers, psychologists) and visiting medical staff (paediatrician, general practitioner, psychiatrist). Families self-refer to the program or are referred by a health professional, and then undergo a phone-based pre-admission interview with a health professional in which presenting concerns and risks are assessed. Families are admitted to the RU on a Monday and are discharged 4-nights later (on Friday morning). On the Monday, within an hour of arrival, parents engage in an 'admission

interview' with a Child and Family Health Nurse (CFHN). The admission interview comprises a discussion of presenting concerns (typically, unsettled infant behaviour, infant sleep disturbance, feeding, toddler behaviour management), and a comprehensive psychosocial assessment including assessment of parental obstetric and medical history, child developmental and medical history, family mental health history, domestic and family violence screening, and other relevant family risk factors (e.g., current stressors, social isolation, financial issues) and strengths (e.g., support networks). The team then uses this information to develop, in partnership with the family, an individualised treatment plan for enactment during the 4-night stay. The facility at which this study was conducted had room for 10 families to be admitted each week. Each family stayed in a double room with an ensuite bathroom and an adjoining nursery, and families had the opportunity to engage with one another throughout the week in common loungeroom and dining spaces, inside playroom and outside playground areas, and a weekly 'pram walk' around the local community. During the admission, parents had access to 24-hour hands-on parenting support and guidance from the team of CFHNs/Midwives. Practical infant care strategies and caregiving skills were taught one-on-one through conversations and 'in-the-moment' demonstrations, for example, during infant bedtime and feeding times, or when the infant woke and needed resettling. Across all facets of the intervention, there was a focus on enhancing parents' awareness of, and responsiveness to, infant cues, and on providing care that was warm, consistent, safe, and nurturing. For infant sleep, which was the primary reason for admission for the majority of families, a variety of strategies were applied according to a 'step ladder' of support, with parents being encouraged to give their child the 'support they need but not more than they require' (Figure 1). For some infants and in some situations, this support involved soothing words and quiet singing at the door of the nursey; for others it required more hands-on soothing including gentle touch, rocking, or cuddles. Central to the approach was an

emphasis on caregiving techniques that promoted feelings of safety and calmness in the infant/child, and that were flexible and responsive to child cues and needs, while also maintaining awareness of parents' coping capacities and emotional needs. Provision of education around normal child development, and support around parental coping was also woven into all conversations. With a goal of building partnerships with parents, RU staff worked within a 'Family Partnership' model [20]. As the week progressed, staff-to-parent ratios decreased to encourage parental independence and capacity to implement new strategies without support. Prior to discharge (Thursday afternoon or Friday morning), parents engaged in a 'discharge interview' with a CFHN/M. During this interview, parents were given an opportunity to reflect with the nurse about progress made over the course of the admission and discuss any remaining issues with which they required support. Through collaborative discussion, a discharge plan was developed.

Virtual RU. During the time-period that this study was conducted (August 2021 – January 2022), the Karitane early parenting RU also offered a virtual RU service. During times when it was government mandated/recommended that health services cease face-to-face services due to a Covid-19 wave in the community, only the virtual RU was offered. At other times, when government restrictions were eased, both in-person and virtual programs were offered concurrently, and parents were able to choose whether they attended in-person or virtually, based on their own health needs, preferences, and availability. The in-person and virtual RU programs were provided by the same team of health professionals, from the same location. Whereas families who attended the in-person program travelled to the Centre and resided there for 4-nights, families who attended the VRU remained in their own homes. The VRU comprised the same components as described above (referral and intake process, admission interview on the Monday, access to 24-hour individualized, in-the-moment support with parenting strategies, discharge interview and planning) but all aspects of the program

were delivered via telehealth and parents engaged with the multidisciplinary health professional team through a mix of video-conferencing, text messaging, and phone calls.

[Insert Figure 1 about here]

Procedure

During the study time-period, parents admitted to the unit were approached by a Research Assistant on the first day of their admission and invited to participate in a longitudinal study. For those who attended the in-person program, this initial conversation with the Research Assistant was conducted in person; for those who attended the virtual program, it was conducted via video-conference. Parents who agreed to participate were provided with a QR code that directed them to an online participant information sheet and consent form, which they completed prior to participation in the study (all parents, irrespective of whether they attended in-person or virtually completed the consent form online). Participants then completed a set of online questionnaires at three time points: Day 1 (admission), Day 5 (discharge), and 6-weeks post-discharge. In total, 183 families were admitted to the unit during this time (n=88 who attended the in-person program and n=95who attended the VRU). Of the 183 families who were invited, 117 (63.9%) agreed to participate and of those, 100 (85.5%) completed the online questionnaires on Admission (n=44 in-person; n=56 VRU), 81 (81%) completed the questionnaires on Discharge (n=31 inperson; n=50 VRU), and 49 (53%) completed the 6-week follow-up questionnaires (n=16 inperson, n=33 VRU). Of the 51 participants who dropped out prior to completing the 6-week follow-up questionnaires, 9 were not contacted again for the discharge or 6-week follow-up because they did not complete the admission questionnaires and or left the RU program early (e.g., due to illness), 9 were not contacted for the 6-week follow-up because they did not complete the discharge questionnaires and 33 were contacted for the 6-week follow-up (phone calls and emails) but did not complete the questionnaires.

Measures

Global parenting self-efficacy was assessed using Me as a Parent (MaaP) [22], a validated, 16-item self-report scale that assesses parents' global beliefs about self-efficacy, personal agency, self-management, and self-sufficiency, thought to constitute parent self-regulation perceptions. Example items include 'I have the skills to deal with new situations with my child as they arise' and 'I can stay focused on the things I need to do as a parent even when I've had an upsetting experience'. Higher scores indicate higher levels of parenting self-efficacy. The Cronbach's alpha for the MaaP at baseline in the current sample was .73.

Task-specific parenting self-efficacy was assessed using the Karitane Parenting Confidence Scale (KPCS) [23], a validated 15-item self-report scale assessing parents' perceptions of their confidence with practical parenting tasks (e.g., 'I am confident about helping my baby to establish a good sleep routine', 'I know what to do when my baby cries'). The scale yields a total score, with higher scores indicating higher levels of parenting confidence. The Cronbach's alpha for the KPCS at baseline in the current study was .83

Empathy and emotion, hostility, caregiving helplessness, and mentalizing were assessed using the Composite Caregiving Questionnaire (CCQ) [24, 25]. The CCQ is a 42-item composite questionnaire designed to assess outcomes of attachment-based early parenting interventions, and comprising scales and subscales from relevant validated self-report questionnaires. It comprises the following measures: Tool to Measure Parenting Self Efficacy ('Empathy and Understanding' and 'Emotion and Affection' subscales) [26] to assess parents' feelings of self-efficacy about empathy and understanding of the child, and selfefficacy about emotion and affection with regard to their child; The Longitudinal Study of Australian Children (Hostile Parenting scale) to assess parental hostility towards the child [27]; the Caregiving Helplessness Questionnaire (Mother Helpless subscale) [28] to assess caregiving helplessness; and the Diamond Maternal Reflective Functioning Scale [29] to assess parental mentalizing. As a composite measure, the CCQ has demonstrated validity and reliability [25]. The Cronbach's alphas for the empathy (CCQ-emp), emotion (CCQ-emo), hostility (CCQ-H), caregiving helplessness (CCQ-CCH), and mentalizing (CCQ – M) scales at baseline in the current study were .84, .77, .87, .87, and .75, respectively.

Parenting Stress was assessed using the Parenting Stress Index – Short Form (PSI-SF) [30], a validated 36-item self-report scale designed to assess parenting stress. The PSI-SF yields scores on three sub-scales: difficult child (e.g., 'my child gets upset easily over the smallest thing'); parent distress ('I often have the feelings that I cannot handle things very well'); parent-child dysfunctional relationship (e.g., 'Most times I feel that my child likes me and wants to be close to me') and a total stress score, with higher scores indicating a greater level of dysfunction. The Cronbach's alpha for the PSI-SF-Total at baseline in the current sample was .89.

Infant sleep was assessed using the Child Habits Sleep Questionnaire – Infant version (CHSQ-I) [31], a validated 33-item parent-report questionnaire designed to assess the severity of sleep disturbance in infant aged 2 weeks to 12 months. The CHSQ-I is a validated adaption of the widely used CHSQ for older children. The CHSQ-I yields scores on four subscales: bedtime resistance (e.g., 'child falls asleep within 20 mins after going to bed', 'child needs parent in the room to fall asleep'), sleep anxiety (e.g., 'child is afraid of sleeping in the dark'), positive sleep habits ('child goes to asleep at the same time at night', 'child sleeps around the same amount each day'), and daytime sleepiness ('child takes a long time to become alert in the morning'), with higher scores indicating poorer infant sleep. The Cronbach's alphas for the bedtime resistance, sleep anxiety, positive sleep habits, and daytime sleepiness scales at baseline in the current study were .78, .77, .50, and .39, respectively. Given the low alphas for the positive sleep habits and daytime sleepiness scales,

and a decision that the items in the sleep anxiety scale were not developmentally appropriate for the younger infant age group included in this study, only the bedtime resistance was used in the current study.

Analysis

Continuous outcome variables (parenting self-efficacy - global, parenting selfefficacy – task specific, empathy and emotion, hostility, helplessness, mentalisation, parental stress; child sleep) were analysed across the three time-conditions (admission, discharge, 6week follow-up) using a linear mixed models repeated measures design with heterogenous compound symmetry covariance matrices. All analyses were conducted using the MIXED procedure in SPSS Statistics 26. Linear mixed modelling was used to prevent listwise deletion due to missing data using maximum-likelihood estimation to account for missing data. This meant that participants' observed values were included in the analysis, irrespective of whether they completed questionnaires at all time points. Analyses were thus conducted on the intent-to-treat [ITT; 32] sample, which was n = 100 (n = 44 in-person and n = 56 VRU). That is, participants were included in the analyses within their treatment condition, regardless of the number of assessments completed. Fitted models were used to calculate estimated mean scores for each continuous outcome variable, at each time point. Within this larger analytic approach, to test specifically hypothesis 1, pairwise within-group differences from admission to discharge, and from admission to 6-week follow-up for the VRU were conducted. Given the exploratory nature of the study, within-group changes for the in-person group were also examined. To test hypothesis 2, between-group differences at admission, discharge, 6-week follow-up were tested. Family-wise adjustments were made to the raw pvalues using the Bonferroni procedure, to account for multiple comparisons.

Patient and Public Involvement

The outcome measures used in this study were chosen based on the reasons for admission and/or treatment goals articulated by patients who had attended the in-person program over preceding years. Patients were involved in the study was participants; results will be communicated to patients via a brief lay-summary on the Karitane webpage.

Results

Baseline differences

Demographic characteristics of the sample are shown in Table 1. There were no significant demographic differences between parents who completed all three assessments (n=48) and those who dropped out prior to the discharge assessment or the 6-week assessment (n=52), parent age, t(98) = -.41, p = .682; child age t(97) = -.66, p = .511. There were also no significant demographic differences between those in the in-person and VRU groups, except for the fact that participants in the in-person RU group were more likely to be single (Table 1). There were also no significant differences in mean admission scores on any of the study main study variables, except for child sleep resistance (p < .05), which was higher among infants who attended the in-person RU (Table 2).

[Insert Table 1 about here] [Insert Table 2 about here]

Outcomes

Table 2 presents model-predicted means for dependent variables across the three assessment time points, and results of the pairwise comparisons testing differences from admission to discharge, and admission to 6-weeks, and testing between-group comparisons at admission, discharge, and 6-weeks.

Parenting self-efficacy. For global parenting self-efficacy (MaaP), there was a significant main effect for time, F (2,134.15) = 50.88, p < .001, but the effects for group and

time x group were non-significant. Pairwise comparisons revealed that for both the VRU and in-person groups, there were significant within-group differences from admission to discharge, and from admission to 6-weeks, indicating improvements in parenting self-efficacy. There were no between-group differences at baseline, discharge, or 6-weeks. For task-specific parenting self-efficacy (KPCS) there were significant main effects for time, *F* (2, 128.39) = 1216.12, p < .001 and group, F(1,102.67) = 4.76, p < .05, but the effect for time x group was non-significant. Pairwise comparisons revealed that for both groups, there were significant within-group differences from admission to discharge, and from admission to 6-weeks, indicating both immediate and sustained improvement in parenting confidence. There was a significant between group difference in KPCS score at 6-weeks (VRU parents reported greater parenting confidence).

Empathy and Understanding. For self-efficacy about empathy and understanding regarding the child (CCQ-emp), there was a significant main effect for time, F(2,134.03) = 7.46, p < .05, but the group and group x time effects were non-significant. Pairwise comparisons revealed that for both groups there were significant within-group differences from admission to discharge indicating an improvement in empathy, but that the within-group change from admission to 6-weeks was only significant for the VRU group. There were no between-group differences at baseline, discharge, or 6-weeks.

Emotion and affection. For self-efficacy about emotion and affection with regard to the child (CCQ-emo), there significant main effect for time, F(2,133.55) = 5.32, p < .05, and group x time, F(2,133.55) = 3.43, p < .05, but the effect for group was non-significant. Pairwise comparisons revealed that for the in-person group there was a significant withingroup improvement from admission to discharge, and for the VRU group, there was a significant within-group difference from admission to 6-weeks. There were no between-group differences at baseline, discharge, or 6-weeks.

Hostility. For hostility (CCQ-H), there were significant main effects for time, F (2,133.29) = 8.59, p < .001, and group x time, F(2,133.29) = 5.27, p < .05, but the effect for group was non-significant. Pairwise comparisons revealed that for both groups there were significant within-group differences from admission to discharge indicating decreased hostility towards the child on discharge. The VRU group also showed a significant withingroup difference from admission to 6-weeks, indicating a sustained decrease in hostility. There was a significant between-group difference at 6-weeks (in person RU parents reported greater parenting hostility).

Caregiving helplessness. For caregiving helplessness (CCQ-CCH), there was a significant main effect for time, F(2,13.42) = 13.42, p < .001, but the effects for group and group x time were non-significant. Pairwise comparisons revealed that for both groups there were significant within-group differences from admission to discharge, and from admission to 6-weeks, indicating a decrease in caregiving helplessness. There were no between-group differences at baseline, discharge, or 6-weeks.

Parental mentalising. For parental mentalising (CCQ-M), there was a significant main effect for time, F(2,131.08) = 10.24, p < .001, but the effects for group and group x time were non-significant. Pairwise comparisons revealed that for both groups there were significant within-group differences from admission to discharge, indicating an improvement in mentalising. In addition, the VRU group showed a significant within-group difference from admission to 6-weeks indicating a sustained improvement in mentalising. There were no between-group differences at baseline, discharge, or 6-weeks.

Parental stress. For parental stress (PSI-SF), there was a significant main effect for time, F(2,103.44) = 13.63, p < .001, but the effects for group and group x time were non-significant. Pairwise comparisons revealed that for both groups there were significant within-

group differences from admission to discharge, and from admission to 6-weeks, suggesting decreased parenting stress. There were no between-group differences at baseline, discharge, or 6-weeks.

Child sleep. For child sleep resistance (CHSQ-I-SR), there was a significant main effect for time, F(2,124.55) = 12.58, p < .001, but the effects for group and group x time were non-significant. Pairwise comparisons revealed that for both groups there were significant within-group differences from admission to discharge, and from admission to 6-weeks, indicating decreased infant sleep resistance. There was a significant between-group difference on admission (in person RU parents reported greater child sleep resistance) but no between-group differences at discharge or 6-weeks.

Discussion

For over three decades, Australian early parenting residential units have been providing intensive support for families with complex early parenting challenges [e.g., persistent issues with sleep, settling, feeding; 10]. With the onset of the Covid-19 pandemic in 2020, most Australian early parenting RU programs shifted from in-person delivery (i.e., intervention provided at a physical units/centre, with multiple families admitted at the same time), to online/virtual service delivery models (families stayed in their own homes and received the intervention via video-conference). Until now, there has been little understanding of the effectiveness of the virtual early parenting RU approach.

The current study reports the first data relating to outcomes of an early parenting RU model, delivered virtually. There were two major findings. First, in keeping with hypothesis 1, at the end of the 5-day virtual RU program, parents reported significant increases in parenting self-efficacy (global and task-specific) and self-efficacy regarding empathy and understanding of the child, and significant decreases in parenting hostility, caregiving

helplessness, parenting stress, and infant sleep resistance. Six weeks following discharge from the program, they continued to report statistically significant improvements on these variables, and they also reported improvements in emotion and affection. Second, in opposition to hypothesis 2, there was no evidence to show that parents who attended the inperson RU program experienced better outcomes than those who attended the VRU. On the majority of the variables examined, there were no significant differences between groups, and for task-specific parenting self-efficacy and parenting hostility, outcomes were in fact better for those who had attended the VRU.

Results regarding parenting self-efficacy and parenting stress are of note. Parenting self-efficacy and parenting stress are known predictors of parenting quality, parent wellbeing, and child outcomes [33-35] and so it has long been an intervention target for early parenting RU programs and a variable of interest in outcome studies [13, 15]. It is significant, therefore, that parents in this study who received the VRU intervention reported improvements in parenting stress, and in parenting self-efficacy, both globally and in relation to the specific task-specific components of parenting a young child. In addition, they reported significantly greater levels of task-specific parenting confidence at 6-weeks compared to those who had attended the in-person program. While the reason for this latter result can only be speculated on, it is possible that learning and being supported to implement new parenting skills in the home environment is more effective than doing so in a residential health facility. This is supported by qualitative feedback from a sub-group of parents from this same sample who attended the Virtual RU [36], who commented that the VRU intervention allowed for practical skill acquisition in a real-life environment, without any need to transfer skills from the in-person RU back to the family home following the admission.

This study also contributes new knowledge about the positive impact of early parenting RU programs in areas in which change has not previously been assessed. For the

first time, this study showed that parents reported changes in empathy and emotion towards the child, increased capacity for parental mentalisation (i.e., being able to see things from the child's perspective) and decreases in their feelings of hostility towards the child and helplessness as a parent/caregiver. Improvements in these areas are of note because they are linked with the provision of sensitive, responsive caregiving, a known predictor of infant attachment security and a range of associated positive child outcomes [37-40]. It is significant that for the VRU group, positive changes on these attachment-related variables were also reported 6-weeks post-discharge. With the exception of caregiving helplessness, however, this was not the case for the in-person group. Given that the current study was exploratory in nature, and did not employ a equivalence trial design, conclusions cannot be made about whether the VRU was superior to the in-person program in terms of enhancing parental functioning in these key attachment domains. Likewise, the study can offer no specific reasons for the observed differences in outcomes between the in-person and virtual RU programs. However, as discussed above in relation to parenting self-efficacy, it is possible that receiving the intervention in the home environment, where the parenting had, and would continue to happen, provided a better place for parents to make changes. Taken together, while this study clearly showed that the virtual RU brought many positive attachment-related changes for families, future research is needed to explore whether the VRU is indeed more optimal than the in-person RU in terms of bringing changes in attachment-related variables, as well as the reasons why the change on the majority of the attachment-related variables appeared to be longer lasting among those who attended the VRU program.

Finally, given that infant sleep disturbance is the primary reason that many parents seek RU intervention [10], the finding of a decrease in infant sleep resistance following the virtual RU program is positive. This result aligns with results of previous studies showing significant differences in parents' perceptions of infant sleep difficulty [41], and in objective measures of total sleep time [16] following in-person RUs. Our analysis showed that baseline child sleep resistance scores were higher among infants who attended the in-person RU than the Virtual RU. Agan, as the current study did not utilise an equivalence trial design, it is not possible to answer questions about which form of the program was superior. However, the fact that the infant sleep resistance scores in both groups were comparable at discharge and 6week follow-up suggests that both the in-person and virtual RU approaches are effective.

This study had many strengths including the prospective design with follow-up to 6weeks post-discharge, and the use of validated measures to assess a wide range of relevant variables including many attachment-informed measures that have not previously been assessed following early parenting RU interventions (e.g., parent empathy, emotion, hostility, caregiving helplessness, mentalising). There were, however, study limitations that must be acknowledged. First, while the study drew comparisons between parents/children who attended the in-person versus the virtual RU programs, participants were not randomly allocated to intervention condition. It is therefore possible that characteristics of the parents (e.g., personality factors, level of distress) or children (e.g., severity of sleep difficulties) may have had an impact on which version of the program they received. Data was also not able to be provided on the exact reason as to why each participating family attended the in-person or virtual RU program, and this may have had an impact on results. Another study limitation was the fact that the study did not include a non-treated control condition. Without this, it is impossible to know whether the observed changes, for either group, would have happened naturally with time, without RU intervention. This is an issue that has plagued all previous early parenting RU evaluation research, and one that would be important to address in future research. Additional limitations include the lack of longer-term follow-up, reliance on selfreport measures, and failure to assess outcomes related to an issue that is a presenting concern for many families, infant feeding.

Taken together, results of this exploratory pilot study provide a timely first report of outcomes of the newly implemented 'virtual' RU models of care. Results show the virtual RU intervention model to be associated with positive gains in a range of primary intervention target areas (infant sleep, parenting self-efficacy, parenting stress, parent-infant relationship quality), and to be in fact superior to the in-person model in terms of enhancing task-specific parenting self-efficacy and reducing parents' feelings of hostility towards their child. Future studies should compare outcomes of virtual versus in-person early parenting RU programs using randomised controlled trials, and utilising observational measures. Future work should also include measures of program fidelity, explore factors associated with program retention/drop-out, and investigate the perspectives and needs of the health professionals who deliver virtual RU programs. Additional important areas for analysis include relative costbenefits of virtual versus in-person early parenting RU programs, and consideration of whether the virtual and in-person models have different impacts on clients with different characteristics or presentations (i.e., 'what works for whom').

Contributorship Statement

JK conceived and designed the study, supervised data collection, conducted the analysis and interpreted the data, wrote the first draft and final versions of the manuscript. NT collected the data, contributed to the analysis and interpretation of the data, undertook critical review of the manuscript drafts, and approved the final submitted version.

Competing interests

Author JK is the Director of Research at Karitane, the organisation that delivers the clinical intervention reported on in this study.

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Data Sharing Statement

Data are available upon reasonable request.

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Table 1. Participant demographics

	In person RU	VRU	Total	In person vs VRU
Child age (M, SD)	32.73 (32.40)	28.84 (24.89)	30.55 (28.36)	t(98) =680, p = .498
Child sex male (%)	52.3	46.4	49.00	$X^2 = .337, p = .562$
Parent age (M, SD)	34.10 (5.70)	34.70 (5.17)	34.43 (5.39)	t (98) =.549, p = .584
Parent sex female (%)	97.7	100.0	99.00	$X^2 = 1.29, p = .257$
Parent Education				
Year 10 high school	0.0	3.6	2	$X^2 = 3.79, p = .435$
Year 12 high school	15.9	10.7	13	
TAFE/Trade qualification	15.9	26.8	22	
University undergraduate	25.0	23.2	24	
University postgraduate	43.2	35.7	39	
Parent ethnicity				$X^2 = 9.10, p = .168$
Caucasian	54.5	60.7	58	
Aboriginal/Torres Strait Islander	6.8	1.8	4	
European	0.0	7.1	4	
Hispanic	0.0	1.8	1	
Middle Eastern	2.3	7.1	5	
Asian	25.0	12.5	18	
Other	11.4	8.9	10	
Parent single (%)	15.9	3.6	9	$X^2 = 4.58, p = .032*$
Estimated yearly household income				e Refue
\$100,000 or less	47.7	32.1	39	$X^2 = 2.52, p = .113$
More than \$100,000	52.3	67.9	61	2016A

**p* < .05

	TDT			UDII (50)			D		
	In person KU			VRU (<i>n</i> =56)			Between group		
	(//-44)						comparisons		
Variable	Admission	Discharge	6-week	Admission	Discharge	6-week	In person vs VPU: Admission	In person vs	In person vs VPU: 6 most
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	VKU: Admission	Discharge	VKU: 0-week
							р		р
								р	
Parenting self-efficacy - global (MaaP) ¹	61.09 (7.92)	66.35 (7.03)*	65.25 (7.37)*	63.84 (7.41)	68.30 (7.58)*	67.55 (6.67)*	.068	.292	.062
Parenting self-efficacy – task specific (KPCS) ¹	35.68 (4.88)	52.06 (4.97)*	51.56 (4.46)*	36.95 (4.64)	54.25 (4.06)*	54.10 (3.88)*	.094	.103	.023*
Self-efficacy: Empathy (CCQ- emp)	50.81 (8.83)	53.52 (8.94)*	52.88 (8.55)	53.11 (8.77)	55.04 (8.35)*	56.25 (8.03)*	.187	.651	.184
Self-efficacy: Emotion (CCQ- emo)	57.90 (5.60)	59.32 (6.23)*	58.63 (5.21)	58.68 (5.67)	59.12 (5.61)	60.78 (3.62)*	.458	.542	.415
Parenting hostility (CCQ-H) ²	15.17 (8.83)	12.48 (8.01)*	16.13 (10.85)	14.44 (9.39)	12.43 (8.20)*	10.78 (5.69)*	.675	.715	.009*
Caregiving helplessness (CCQ- CCH) ²	13.33 (5.37)	11.13 (4.72)*	11.25 (4.77)*	11.75 (5.23)	10.67 (4.81)*	9.91 (3.44)*	.120	.744	.348
Parental mentalizing (CCQ-M)	48.33 (6.57)	49.87 (8.20)*	46.88 (6.22)	45.40 (7.13)	48.61 (6.97)*	48.23 (7.20)*	.050	.101	.804
Parenting Stress (PSI-SF) ²	120.68 (17.57)	125.63 (20.99)*	125.63 (20.99)*	125.13 (16.09)	132.67 (15.10)*	132.67 (15.10)*	.191	.063	.063
Child Sleep (CHSQ-I-BR) ²	29.95 (3.48)	25.47 (3.83)*	26.56 (4.40)*	27.85 (5.12)	25.55 (3.80)*	25.52 (5.09)*	.019*	.807	.524

Note. 1 = Higher scores indicate more optimal functioning; 2 = Higher scores indicate less optimal functioning; * p < .05 (comparisons with admission scores); RU = Residential Unit; VRU = Virtual Residential Unit; MaaP = Me as a Parent; KPCS = Karitane Parenting Confidence Scale; CCQ-emp = Composite Caregiving Questionnaire – self efficacy about empathy scale; CCQ-emo = Composite Caregiving Questionnaire – self-efficacy about emotion scale; CCQ-H = Composite Caregiving Questionnaire – hostility scale; CCQ-CCH = Composite Caregiving Questionnaire – caregiving helplessness scale; CCQ-M = Composite Caregiving Questionnaire – mentalisation scale; PSI-SF = Parenting Stress Index – Short Form; CSHQ-I-SR = Child Habits Sleep Questionnaire – Infant version – Bedtime resistance scale



Figure 1. The Karitane infant and toddler sleep and settling approach [21]