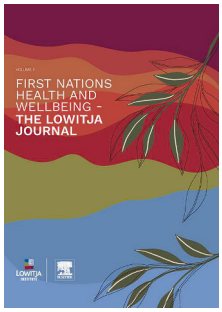

Original Research

Culturally secure methods for assessing social and emotional wellbeing in an Australian Aboriginal equine-assisted learning program

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Abstract

Purpose *Yawardani Jan-ga* (Horses Helping) (YJ) is an Aboriginal-specific, culturally secure equine-assisted learning (EAL) program in the Kimberley region of Western Australia (WA). It was collaboratively designed with local Aboriginal children and young people, Elders, service providers and content experts – including specialists in trauma-informed practice, child development and implementation science. This program addresses the complex social, emotional, spiritual and wellbeing needs (SEWB) of Aboriginal children and

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young people aged 6 to 26 years. Utilising a strengths-based learning model, participants engage with horses to develop vital life skills, such as communication, self-awareness and emotional regulation, fostering their SEWB. While EAL has been applied internationally with Aboriginal populations, its adoption in Australia is still expanding.

Methods This methodology paper outlines (a) the standardisation of the YJ EAL program's design and implementation, ensuring consistent, methodologically sound practices; and (b) a culturally secure, multimodal, multi-informant qualitative approach for collecting contextually relevant, longitudinal data on participant experiences. The methods were designed to capture the subtleties of human–horse interactions, prioritise participant narratives, and integrate strengths-based techniques resonant with Aboriginal learning preferences and cultural perspectives. These methods diverge from traditional physiological and psychological EAL assessments, offering culturally relevant and ecologically valid evaluations.

Principal conclusions The methodologies presented in the current paper are being evaluated through a longitudinal qualitative study. This pioneering Aboriginal-led initiative sets a precedent for employing culturally secure methods to gather qualitative phenomenological data in the EAL field.

Keywords: Phenomenology; Mental health; Qualitative methodology; Relational skills; Youth

Highlights

- *Yawardani Jan-ga* (Horses Helping) is an Aboriginal-led, culturally secure equine-assisted learning (EAL) program co-developed with Aboriginal children, young people, Elders and knowledge holders in the Kimberley region of Western Australia.
- This paper establishes a methodological benchmark for collecting contextually relevant, culturally secure, multimodal and informant longitudinal data on participant experiences in the program.
- They offer a distinct alternative to mainstream EAL evaluations that rely on Western physiological and psychological assessments.
- The strengths-based, relational methodologies reflect and uphold Aboriginal ways of knowing, being, and learning — ensuring alignment with community values and worldviews.

Background

Australian Aboriginal[1] children and youth (subsequently referred to as Aboriginal young people [AYP]) from the Kimberley region of Western Australia (WA) belong to one of the world's most ancient cultures. Despite disruptions caused by colonisation, Aboriginal cultural heritage continues to thrive (Butler et al. 2019). Cultural connections, integral to Aboriginal knowledge systems, strengthen familial bonds and ties to community and Country, acting as essential resources that enhance adaptability in adversity. In this context, cultural connections refer to the

[1]In this paper, the term "Aboriginal" is used to refer to the peoples of the Kimberley region. This reflects the region's demographic composition, community-endorsed terminology, and alignment with ethical research principles of cultural integrity and self-determination.

interrelated bonds of kinship, spirituality, cultural practices, language and custodianship of Country that underpin Aboriginal worldviews and function as vital resources for social and emotional wellbeing (Dudgeon et al. 2014; Gee et al. 2014). Although many AYP in the Kimberley region are supported by their families, peers and communities in times of need, a disproportionate number are not and, as a consequence, experience additional relational stress, including (but not limited to) complex grief and loss, insecure attachments to parents and other adult carers, racism and poverty (De Maio et al. 2005; Dickson et al. 2019; Fitzpatrick et al. 2015; Fitzpatrick et al. 2017; Haslam et al. 2023; Education and Health Standing Committee 2016).

Adverse life experiences can significantly impact social and emotional development, manifesting difficulties in self-regulation, learning, concentration, building trust and healthy relationships (Perry 2001; Perry 2009). Population trends indicate that inequitable exposures to adverse life events in AYP can manifest in maladaptive behaviours – such as aggression, problematic alcohol and substance use, criminal activity, self-harm and suicide – in attempts to manage their daily life circumstances (Australian Institute of Health and Welfare [AIHW] 2019a; AIHW 2019b; Bower et al. 2018; Fogliani 2019). The impact of unaddressed historical issues on the lives of Aboriginal communities in the Kimberley is pervasive and intergenerational (Dickson et al. 2019; Haslam et al. 2023; Parliament of Western Australia 2016); these include one of the highest rates of forced separation-affected households (De Maio et al. 2005) and suicide in Australia (ATSISPEP 2015; McHugh et al. 2016). Despite efforts to close the educational gap, WA's state education department figures reported schools in the Kimberley region recorded a median attendance rate of 62.9 per cent in 2022, 23.7 per cent lower than the state's average (Torre 2023). This decline is largely attributed to factors such as weather, cultural obligations, family responsibilities, health and student mobility – defined as the frequent movement of children between schools or communities, often driven by family, cultural or housing circumstances (Ridley and Thorburn 2023). Aboriginal young people are disproportionately represented in the juvenile justice system, constituting more than 75 per cent of detainees, yet comprise 6 per cent of the total youth population (Thorburn and Marshall 2017). The 2019 WA coroner's inquest into the cluster suicides of 13 Kimberley AYP highlighted the enduring effects of intergenerational trauma and poverty, criticising mainstream mental health services for inadequate support (State Coroner 2019). It advocated for culturally inclusive approaches to improve AYP's social-emotional wellbeing (SEWB) (State Coroner 2019).

Yawardani Jan-ga equine-assisted learning program for Aboriginal children and young people: A culturally secure community-co-designed service to recognise the healing of intergenerational trauma

Yawardani Jan-ga (YJ, Horses Helping) is an Aboriginal-specific, culturally secure equine-assisted learning (EAL) program co-designed over four years by and with local AYP, Elders, service providers and experts – including specialists in trauma informed practice, child development and implementation science – in the Kimberley region of WA. The YJ EAL aims to provide local AYP aged 6 to 26 years with a safe space to learn essential life and relational skills that support them in navigating and overcoming everyday challenges while enhancing their SEWB and connection to each other, their families and their culture. It adopts a co-design approach across its design, planning, implementation and evaluation

phases. This method prioritises the experiences, values and worldviews of Aboriginal peoples while fostering the integration and coordination of community resources.

The YJ EAL program leverages the deep historical connection of Kimberley Aboriginal people with horses, rodeo culture and pastoral industries. It employs a strengths-based, experiential learning approach, leveraging the well-known and scientifically documented attunement of horses to intentional and unintentional human behaviour (e.g. running, shouting) and unseen physiological cues (e.g. increased heart rate, shallow breathing) to provide an optimal person-centred learning context (Hausberger et al. 2008; Kelly et al. 2021; Kirby 2016; Kirby 2021; Rodriguez et al. 2018). Skill development and learning occur through the repeated practice of relational skills gained through planned participant-selected experiential learning activities with the horse.

A trained Aboriginal equine-assisted learning (AEAL) practitioner facilitates each participant's understanding of the horse's biofeedback, reactions and body language to different activity-based situations and interactions with participants using techniques such as mentalising (Burgon 2011; Ewing et al. 2007; Kirby 2021; Kirby 2023a; Ogden et al. 2006) to create a dialogue around how the participant might feel, think or act in similar situations. Using such techniques, practitioners help participants become aware of their experience: their feelings, bodies, thoughts, beliefs, behaviours, values, needs and wants. Once participants develop self-awareness, the practitioner also assists them in reflecting on their old unhealthy behaviours and assimilating newly learned skills and behaviours into their daily lives (Burgon 2011; Ewing et al. 2007; Kirby 2021; Kirby 2023a; Ogden et al. 2006). These new learnings and skills can begin to replace old behaviours that are not benefitting them.

The YJ EAL program aligns with traditional knowledge and empirical evidence that recognises that connection with all forms of creation is essential to the healing process in Aboriginal culture (Coffin 2019; Dell et al. 2011; McAdam 2009). It is grounded in an ecopsychology approach that resonates with Aboriginal peoples' intrinsic felt emotional bond with the land (Greenway 1995; Kelly 1991; Kirby 2021; Legge 2016; Toms 2022) and does not depend on spoken language, thus reflecting Aboriginal methods of learning and expression (Kirby 2021). Moreover, as a relatively new healing modality, the Kimberley region has no established bias towards EAL, making Aboriginal communities more likely to engage with the YJ EAL service.

Making the case for multimodal and informant methodology to bridge gaps in the global equine-assisted learning evidence base

Current evidence indicates that EAL programs can effectively engage individuals who have not responded to conventional therapeutic approaches, irrespective of their chronic health conditions, age or cultural background (Cabiddu et al. 2016; Haig and Skinner 2022; Heussen and Häusler 2022; Hoagwood et al. 2017; Kang et al. 2018; Kendall et al. 2015; Lentini and Knox 2015; Malinowski et al. 2018; Stern and Chur-Hansen 2019; Sudmann 2018; Xiao et al. 2023; Zoccante et al. 2021). Internationally, EAL programs have demonstrated improvements across various relational and functional health domains, including self-awareness (Coffin 2019), emotional regulation (Bachi et al. 2012; Hemingway et al. 2019; Perkins 2018), prosocial skills (Gibbons et al. 2017; Holmes et al. 2012), self-esteem and confidence (Ewing et al. 2007; Perkins 2018; Wilson et al. 2017), mastery (Waite and Bourke 2013; Yorke 2010), as well as reduced anxiety

(Holmes et al. 2012; Wilson et al. 2017), anti-social behaviours (Coffin 2019), stress (cortisol levels), and heart rate and blood pressure (Ferlazzo et al. 2023; García-Gómez et al. 2020; Kim et al. 2018; Yorke et al. 2013). Moreover, EAL programs that have been culturally co-adapted or co-designed with First Nation (or Aboriginal) populations in the United States of America, Canada, New Zealand and Australia report beneficial outcomes, including enhanced self-acceptance, trust, respect, relationship skills and a stronger sense of belonging and connectedness to culture and spirituality (Adams et al. 2015; Coffin 2019; Dell et al. 2011a; Goodkind et al. 2012). Before the YJ EAL program manual was developed, there was a lack of standardised or manualised culturally secure EAL programs that were explicitly co-designed and validated for Australian Aboriginal communities. This gap highlights the urgent need for a rigorous methodology to strengthen the evidence base for Aboriginal EAL practices worldwide. In this paper, the term *cultural security* refers to the incorporation of Aboriginal values, beliefs and protocols into health and wellbeing service delivery in ways that move beyond cultural awareness or cultural safety to ensure that services are experienced as respectful, responsive and free from harm (Coffin 2007).

Worldwide, numerous methodological challenges hinder the accurate evaluation of the effectiveness of EAL programs on psychosocial outcomes. These challenges stem from the absence of structured treatment protocols based on solid theoretical frameworks, limited sample sizes in efficacy trials, a lack of psychometrically reliable outcome measures, and evaluations focusing only on short-term outcomes (Fuller-Lovins et al. 2023; Haig and Skinner 2022; Lee et al. 2016; Stern and Chur-Hansen 2019). To address these issues, researchers have suggested several enhancements, including (i) standardising program design and implementation; (ii) utilising ecologically valid and reliable methods for data collection, coding and reporting – including dynamic analytical approaches to capture the complexities of human–horse interactions across multiple sessions; and (iii) conducting longitudinal assessments to evaluate impacts on participants after the completion of the intervention (short-, mid- and long-term) (Anestis et al. 2014; Coffin 2019; De Santis et al. 2017; Fine et al. 2019; Fuller-Lovins et al. 2023; Haig and Skinner 2022; Hausberger et al. 2008; Hosey and Melfi 2014; Kelly et al. 2021; Rodriguez et al. 2018; Samet et al. 2023; Santaniello et al. 2020; Stern and Chur-Hansen 2019; Wilson and Netting 2012). Building on this foundation, the next section introduces a culturally secure, qualitatively-driven implementation and evaluation approach used in the YJ EAL program.

The use of qualitatively-driven implementation and evaluation approaches that privilege the lived experiences of Aboriginal stakeholders

The YJ EAL adopts a multimodal qualitative methodology that prioritises decolonised Indigenous approaches (Williams and Shipley 2023) such as phenomenology (Wojnar and Swanson 2007) and participatory action research (Baum et al. 2006). Both methodologies prioritise the voices and experiences of Aboriginal stakeholders throughout the research process, actively engaging them in identifying issues, implementing solutions and evaluating outcomes (Baum et al. 2006). Using these approaches ensures that research is deeply rooted in the realities of the local community, yielding practical and culturally appropriate responses. Moreover, qualitative methodology is more suitable for addressing the limitations of Westernised behavioural and physiological measurement techniques commonly used in mainstream EAL research programs (Aikins et al. 2005; Hausberger et al. 2008; Kelly et al. 2021; Rodriguez et al. 2018). Conventional Westernised

methods perpetuate deficit discourses, reinforce stereotypes and further marginalise already disadvantaged groups (Fogarty et al. 2018; Smith 2021; Williams and Shipley 2023; Williams 2018) while being misaligned with Aboriginal learning styles, forms of expression and worldviews (Williams and Shipley 2023).

By training local Aboriginal community members as EAL practitioners and researchers to deliver the program within their communities, YJ EAL aims to embed culture throughout its service and develop a future workforce of frontline practitioners who are well prepared to meet the SEWB needs of local AYP in ways that are culturally secure and conducive to building trust. This strategic approach is designed to bridge the gaps contributing to Kimberley AYP's disengagement from mainstream health and social services. Identified barriers include shame and stigma around help-seeking, inadequate understanding of Western medical-based approaches, apprehension about diagnostic outcomes, fears of child removal upon seeking mental health support issues, different cultural beliefs, and a lack of culturally secure mental health services that respect and incorporate Aboriginal ways of knowing, being and doing (Carlin et al. 2019; Dudgeon et al. 2016; Dudgeon and Kelly 2014; Gupta et al. 2020; Hunter 2014; Tatz 2005; Westerman 2010).

The YJ EAL program strives to function as an inclusive, non-stigmatising health promotion, prevention and early intervention service that a diverse range of AYP can access. Early in program consultation, community members emphasised that YJ EAL needed to be for all AYP; if it was only accessible to 'bad kids', participants may be stigmatised. Furthermore, Elders noted that even AYP who appear to be 'doing well' were still at risk of suicide, needing support with coping and relational skills. In response, the inclusion criteria were broadened to encompass all AYP aged 6 to 26 years, including those with specific needs and those aspiring to develop leadership and capacity-building skills. Two distinct program streams were established to cater to meet the needs of the two different cohorts.

In this methodology paper, the authors:

- describe the standardisation process of the YJ EAL program's design and implementation, ensuring that practices are consistent and grounded in established methodologies;
- detail the culturally secure, multimodal, multi-informant qualitative data collection methodology employed in the program to gather contextually valid longitudinal data on participants' experiences throughout the duration of the program (Sessions 1–10).

Materials and methods

Cultural consultation and ethical approval

The Aboriginal-led YJ EAL team collaborated with Elders, Aboriginal community leaders and local organisations to secure a relationship and determine the level of acceptability and support for implementing and evaluating the program. This process facilitated the development of a recruitment strategy that adhered to community protocols and emphasised respect for cultural sovereignty, fostering trust and credibility within the community. Communication was designed to be clear, respectful and culturally resonant.

Additionally, all YJ staff underwent training in cultural engagement, to guarantee respectful interactions with participants strengthening the project's dedication to cultural security. Staff also completed standardised training in ethical research conduct to maintain

consistency in obtaining consent and managing data collection, storage and processing. The program emphasised sex-sensitive matching, ensuring that male practitioners work with male participants and female practitioners work with female participants wherever feasible. This approach aimed to uphold comfort and cultural norms.

Ethical approval for implementation and evaluation of the YJ EAL project was obtained from several organisations, including: the WA Aboriginal Health Ethics Committee [Reference: 926]; the Kimberley Aboriginal Health Planning Forum, Research and Evaluation Subcommittee [Reference: 2019-007]; the Department of Education, Government of WA [Reference: D20/0184973]; Catholic Education WA [Reference: RP2019/36]; and the WA Police Force [Reference: T539]. Murdoch University's Animal Ethics Committee granted approval for the use of horses in the research [Permit No. T3404/22]. The protocol was also prospectively registered with the Australian New Zealand Clinical Trials Registry [ACTRN12619001675112; Universal Trial Number: U1111-1241-7349] and can be accessed via free press (Coffin et al. 2024).

Setting and design

The Kimberley region of WA is one of the most remote and geographically dispersed regions in Australia, characterised by vast distances, harsh climatic conditions and limited infrastructure (Figure 1). It is home to a high proportion of Aboriginal peoples, many of whom reside in small and isolated communities where access to health, education and social services is constrained (Western Australia Primary Health Alliance [WAPHA] 2022). Since 2021, YJ EAL has progressively been implemented across multiple sites in WA's Kimberley region, including Broome, Halls Creek and Derby (Figure 1).

Figure 1: Map of Western Australia. Reprinted from https://www.kimberleyaustralia.com/map-western-australia.html under a CC BY license, with permission from Kimberley Australia website, original copyright 2006-2024 Birgit Bradtke

A staggered rollout approach and longitudinal qualitative evaluation design have been used (Grossoehme and Lipstein 2016). Data collection occurs at multiple time points: pre-intervention (via referral documentation), during the intervention (after sessions 5 and 10) and post-intervention (at 3, 6 and 12 months) (Figure 2). The intervention provides participants access to the YJ EAL program.

Intervention description

The YJ EAL program applies a cultural perspective to the Equine Psychotherapy Institute of Australia's

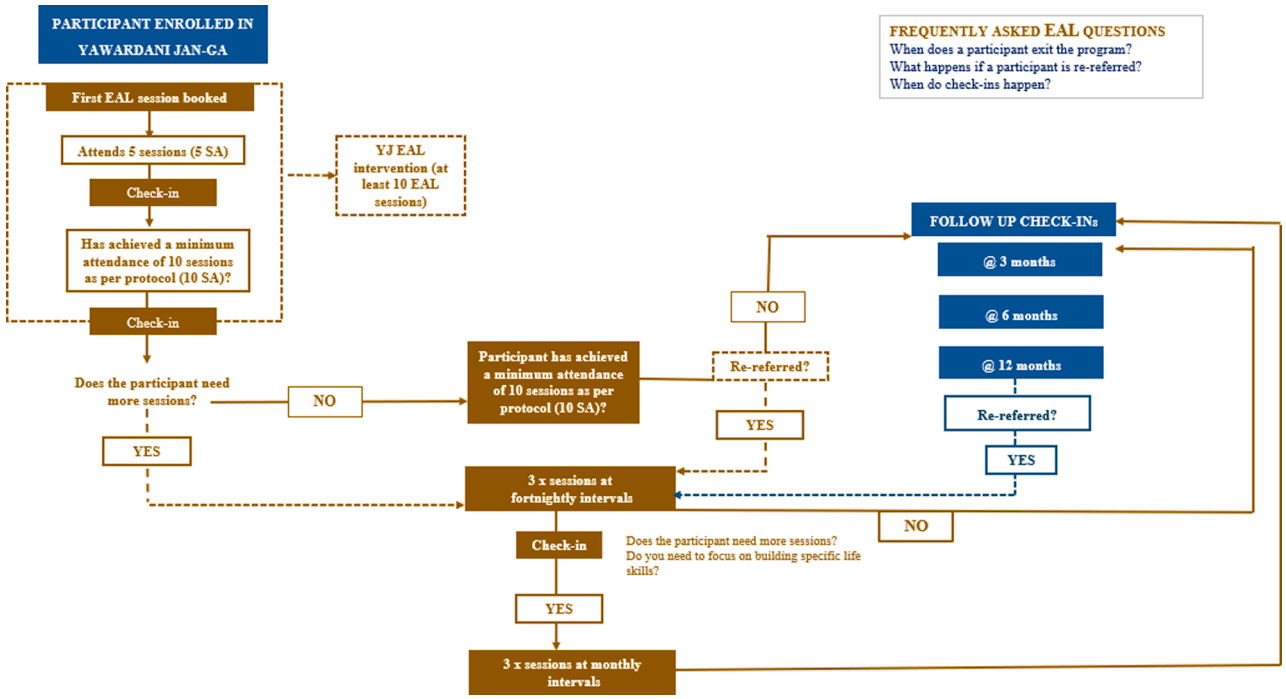

Figure 2: The open-door flow of participants and data collection schedule.

Horse Wisdom Program (Kirby 2016), blending trauma-informed and recovery-oriented care principles with Aboriginal wisdom and child development theories (Chandler and Dunlop 2015; Coffin 2007). It does not heavily rely on verbal communication, making it especially beneficial for experiential learners or individuals who prefer non-verbal methods of communication or are still developing these skills (Barca et al. 2020; Coffin 2019; Haig and Skinner 2022; Kirby 2021; Legge 2016).

Table 1 summarises session themes and activities. Each session is personalised to meet the participant's unique needs and pace of skill development (Kirby 2016), with subsequent sessions building on the achievements of the previous ones (building block approach) (Coffin 2019). Participants are given the autonomy to select their horse partner of their choice at the beginning of each session, which may differ from session to session. The duration of each session is designed to not exceed 60 minutes per week. Based on individual needs, some participants may complete the program in fewer than the typically recommended 10-session dose in mainstream EAL programs, whereas others may require more.

The theoretical underpinning of the *Yawardani Jan-ga* equine-assisted learning program

Consistent with the Horse Wisdom Program (Kirby, 2016), YJ EAL sessions focus on observing and learning from the horses' behaviour, using them as role models to cultivate greater calmness, emotional awareness, trust in relationships and the ability to manage daily stresses and challenges. This is supported by neuroscience insights from attachment theory (Bowlby 1988), the Neuro-sequential Model of Therapeutics (NMT) (Perry 2001; Perry 2009) and the

Session #	Theme	Definition of theme	Sample activity[a]
1.	Noticing	Noticing when you are becoming activated and how to regulate your nervous system using simple tools	Observe horse behaviour and herd dynamic
2.	Awareness	Awareness will give you a choice. Awareness of self, including thoughts, feelings and sensations, awareness of others and awareness of the environment. How to become present, aware and grounded. Noticing body language	Touch/groom the horse and observe how horses demonstrate self-regulation and co-regulation (support each other)
3.	Boundaries	Understanding and becoming respectful of personal space, touch and verbal boundaries. To discover what is OK and not OK. How to communicate these clearly	Lead horse using direct (voice and touch) and observe horse's response to the participant's approach, voice and touch
4.	Healthy relationships	The ingredients are necessary to engage and develop healthy relationships. Noticing and understanding oneself and noticing others, give and take, mutuality. Rupture and repair work	Move the horse in the yard using direct (voice and touch) and indirect (energetic) connection and interpret horse and own body language
5.	Helpful thoughts and behaviours	Becoming aware of self-talk, beliefs and where they come from. How thoughts affect your energy, body language and actions. Noticing helpful or unhelpful thinking	Move the horse in yard using indirect (energetic) connection only and relate horse behaviour to current thoughts
6.	Feelings as natural	Understand that feelings are information, all feelings are welcome, and learn how to express them choice-fully and healthily. Become aware of the early sensations so that you can act earlier. Surf the urge	Move horse through an obstacle course using direct (voice and touch) and indirect (energetic) connection
7.	Facing life challenges	How to deal with life and the challenges it throws at us	Build an obstacle course and lead a horse at liberty through it (obstacle represents obstacles in life)/ mounted session
8. and 9.	Paired session to consolidate skills/learnings		Working in pairs to build an obstacle course and lead horse through it. Emphasis on working together to achieve a common goal
10.	Small-group session to consolidate skills/learnings		Working in a small group (n = 4) to build an obstacle course and lead a horse through it. Emphasis on working with others to achieve a common goal

#. number. [a]Each activity meets three key elements: (1) activities are action and skill focused on building participant's sense of efficacy and capability; (2) 'mindful disengagement' (e.g. ability to step back, observe and label feelings); and (3) develops and reinforces self-regulation skills.

Table 1: Overview of the *Yawardani Jan-ga* equine-assisted learning sessions

Six Rs of Positive Development (Perry 2015). The NMT (Perry 2001; Perry 2009) guides session structure and activity content to align with neural development by prioritising the most primitive brain functions, such as regulation and sensory integration, before progressing to more complex cognitive and relational tasks using culturally secure approaches. In line with NMT (Perry 2001; Perry 2009), session activities are designed around repetitive somatosensory regulatory experiences – for instance, the repeated brushing of horses within a context that fosters relational enrichment – developing trust and positive relationships with both the horses and EAL practitioners. This approach helps make emotional responses less overwhelming and threatening, facilitating positive emotional and behavioural transformations. During each session, the Six Rs or foundational principles for fostering adaptation and recovery in trauma-informed care – relationship, repetition, regulation, respect, reward and routines – are reinforced (Perry 2015).

As shown in Table 1, all session activities prioritise 'Here and Now' experiences over past behaviours, to

prompt participants to reflect on their interactions with the horses and what they may signify without drawing attention to their early life experiences (e.g. How was that for you? How did the horse react to your movements? What do you think the horse is trying to tell you?). Practitioners use the phenomenological method of inquiry, mentalising and reflective practices to help participants become more aware of physical sensations generated by their bodies and how their body reflects their feelings, thoughts, beliefs, needs and wants, and creates a safe space to experience and express emotions and thoughts (Bachi et al. 2012; Carlsson et al. 2015; Kirby 2023a).

As participants progress through the YJ EAL sessions, practitioners facilitate reflections on prior unhealthy behaviours and initiate discussions on alternative responses for the future (Johansen et al. 2016; Kirby 2023a). In line with NMT principles, as participants develop enhanced regulatory abilities and relational stability, they are gradually introduced to activities that challenge higher cognitive functions, including complex problem-solving tasks involving obstacle navigation with horses, which stimulate cortical activity and promote executive functions. Each YJ EAL session concludes with reflective discussions facilitated by the EAL practitioner, concentrating on interpreting the horses' non-verbal cues and biofeedback.

Processes to ensure integrity, rigour and fidelity in program delivery and data collection

Standardisation techniques used within YJ EAL to ensure fidelity are outlined in this section. The process of manualisation of the YJ EAL intervention was described in the protocol paper (Coffin et al. 2024). The program manuals outline the essential elements of YJ EAL, including an overview of the sessions (Table 1), session structure flow and stepwise participant progression.

Practitioner training and supervision in Yawardani Jan-ga equine-assisted learning

The YJ EAL sessions are facilitated by trained Aboriginal community members who have completed the AEAL practitioner training course endorsed by the Equine Psychotherapy Institute of Australia. Practitioner training spans 15 days and comprises 120 hours of coursework and practical application, which is delivered in three one-week blocks and in multiple ways to accommodate oral learners who may have no/limited written attainment in Australian standard English. Training materials include a comprehensive teaching curriculum, trainer and trainee manuals, and video-based content. There is a short-answer exam and practical assessment at the end of the training, with practitioners awarded a certificate-level qualification endorsed by the Equine Psychotherapy Institute of Australia. Training equips AEAL participants to take on dual roles as practitioners and researchers.

Practitioner training in Yawardani Jan-ga equine-assisted learning covers the following components:

- ***Aboriginal adaptation of the Horse Wisdom Program*** (Kirby 2016), which involves observing and learning from the horses as teacher and partner, to become more calm, aware, connected to feelings, authentic in relationships and skilful in managing everyday stresses and difficulties, just like the horses.
- ***Dialogic or 'I-Thou Horse-person-ship™'*** (Joyce and Sills 2018; Kirby 2023b) teaches an understanding of the horses' subjective experience and relationship with horses, including two-way relationships, safety and boundaries, making requests and not demands, and the path of least resistance.

- ***Practice of 'Dadirri',*** a form of deep, attentive listening to oneself, the participant, and the horse (Ungunmerr-Baumann et al. 2022). Practitioners are encouraged to practice *Dadirri* to bring awareness of where they come from, where they currently are, where they are going and where they belong. Practitioners are encouraged to use *Dadirri* to quieten the mind as it teaches about 'the quiet stillness and the waiting' (Ungunmerr-Baumann et al. 2022).
- ***Phenomenology*** is a research methodology and therapeutic approach focused on understanding individuals' subjective experiences (Colaizzi 1978; Phillips-Pula et al. 2011; Wojnar and Swanson 2007). This approach emphasises that personal experiences shape one's worldview, thoughts, emotions and behaviours. Consequently, each person's perception of the world is unique and not entirely accessible to others, as it is influenced by their history, needs and expectations. Practitioners are taught and practice how to adopt a phenomenological approach during EAL sessions by: (i) allowing AYP to experience and express their world in their own time; (ii) freeing their mind of personal perceptions and interpretations; and (iii) ensuring that 'Session Notes' are a documentation of what was offered to the AYP, what was observed and what was heard, *not* what was interpreted or inferred by the practitioner.
- ***Importance of continuous improvement***, including engaging in reflective practices and debriefing after delivering every session.

Training in research covers intervention delivery and standardised data collection

Researcher training encompasses an in-depth understanding of the research protocol, including safety and emergency protocols, ethical considerations, and the enrolment and obtaining consent processes. Additionally, the training covers methods for delivering each YJ EAL session and data collection strategies using a practice management system, customised to allow for real-time data capture using phenomenological inquiry. It also discusses managing deviations from the protocol. All EAL practitioners delivering the program undergo regular fidelity checks to ensure compliance with the program standards, as detailed in the protocol (Coffin et al. 2024), which will be further discussed in an upcoming process evaluation paper.

Yawardani Jan-ga equine-assisted learning session structure. All YJ EAL practitioners are trained to ensure that each session flows, as shown in Figure 3.

Preparation and planning: This phase involves reviewing client referral information and case notes in JaneApp, including those from the previous sessions; preparing the horses for the session; ensuring the practitioner is grounded and aware; and confirming that the environment is safe. JaneApp is an adaptable, user-friendly practice management software designed to streamline operational tasks and enable real-time data collection and management (Jane Software Inc. 2005). See the in-depth description of JaneApp in the next section.

Grounding: This phase involves facilitating a connection to self and environment by engaging participants in initial conversations and open dialogue around being calm and relaxed. A scripted approach called 'Four Steps to Regulation' is typically used, which includes:

- *Out-breath*: Encouraging participants to use their out-breadth (exhale or sigh) to release energy and begin the process of self-regulation.

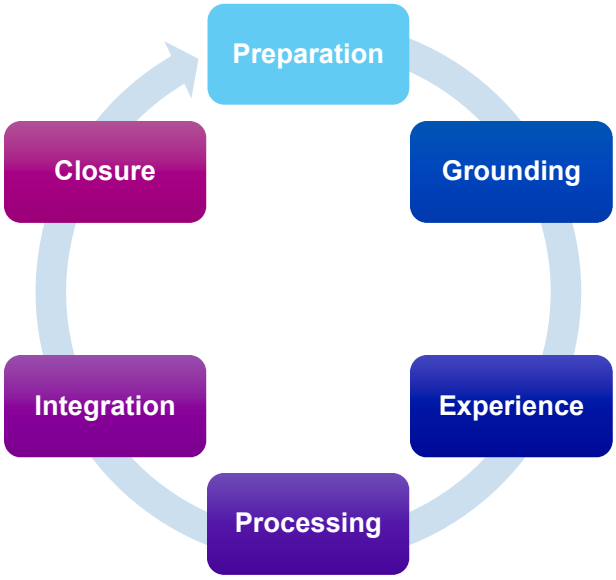

Figure 3: *Yawardani Jan-ga* equine-assisted learning flow.

- *Inner and outer body awareness or mindfulness*: Drawing attention to their feet, feeling connected.
- *Resourcing through the five senses*: Using all senses to tune into oneself and the surrounding environment.
- *Internal awareness*: Encouraging participants to notice what is happening inside their bodies.

Experience: Practitioners provide safety guidelines, emphasising awareness, boundaries and knowledge about the horse, before inviting participants to engage in a 'horse experience' (Refer to Table 1 for a description of the horse experience).

Processing – questions and observations: After the horse experience, the practitioner engages the participant in a discussion about their experience. This involves the practitioner engaging in deep listening, reflection (on the participant's feelings, words and stories, interpreting body language, identifying themes), asking open-ended questions, and sharing observations about the horse-participant interaction using observational language (Bachi et al. 2012; Carlsson et al. 2015; Kirby 2023a).

Integration: Practitioners ask participants about what they learned from the session. They cue them to consider how they can apply their experiences to their daily lives at home, school and with friends. This phase is about fact-checking and relaying the participant's experience back to them, checking and allowing them to choose where they want to explore the experience to serve them best.

Closure: The session ends with participants expressing their thanks and bidding farewell to the horse. Participants are asked if they would like to return the following week, what decisions they could make at this moment, and which horse they might prefer to work with next.

Multimodal and multi-informant data collection during each session

Multimodal and informant data are collected in each session to capture participants' evolving learning experiences and skill acquisition. Modalities include photographs, videos, written notes, voice recordings, guided and AYP reflections on each session (Coffin et al. 2024). These data serve to:

- document the activities, strategies and experiences (opportunities) afforded to the AYP
- understand the skills being developed and their manifestation in each session to monitor progress and skills progression
- determine the optimal length and content of the EAL program for different referral conditions, such as emotional regulation challenges versus low self-esteem and confidence
- validate Aboriginal science by recognising non-verbal communication as an appropriate and

culturally secure method for collecting information on skill development in AYP.

Utilisation of a commercially available practice management system customised to enable real-time capture data collection (JaneApp)

All YJ AEAL practitioners receive training on JaneApp (Jane Software Inc. 2005). The customised YJ EAL JaneApp platform is accessible via tablet and web interfaces and has been tailored to enhance session planning and monitoring. The choice to use a commercially available software was motivated by its simplicity, making it both easy to learn and more likely to be routinely and correctly used. The team also wanted a platform that would be accessible by individuals or organisations who wish to establish their own EAL in the future.

JaneApp supports the standardisation of data collection by embedding the YJ EAL intake and data collection forms within its platform, ensuring uniformity across various practitioners, sessions and sites. This feature maintains methodological rigour and is integral for consistent documentation practices. JaneApp's documentation capabilities allow for the digital management of client records, including electronic charting and medical documentation. It has customisable templates, forms and surveys that can be adjusted to meet the specific requirements of individual sessions, promoting systematic and structured record-keeping. The central management system of JaneApp includes a dashboard that displays essential information such as upcoming appointments, client details and session notes, streamlining scheduling and enhancing management practices.

JaneApp adheres to international data protection standards such as the Health Insurance Portability and Accountability Act (HIPAA), the Personal Information Protection and Electronic Documents Act (PIPEDA) and the General Data Protection Regulation (GDPR) (Jane Software Inc. 2005). These frameworks mandate rigorous protocols for managing, storing and transmitting personal health information and are aligned with the National Health and Medical Research Council of Australia guidelines (National Health and Medical Research Council 2018a; National Health and Medical Research Council 2018b). It protects sensitive client data through encrypted and secure storage solutions that adhere to these standards. This commitment to data security protects client privacy and ensures that practitioners meet regulatory compliance requirements.

Within the YJ EAL program, each participant is assigned a unique profile on JaneApp, where all relevant data, including referral forms, consent documents and detailed session records, are centrally stored. JaneApp also facilitates the integration of practitioner notes and multimedia files, including photos and videos, allowing the capture of multimodal data within a single system. The integration of multimodal data provides a comprehensive view of each session and the achievement of the goal or outcome of the session, thereby preserving the methodological integrity of the program. It can also generate reports identifying missing notes and forms, assisting with fidelity and research documentation.

Prior to the commencement of the EAL session and, as part of their preparatory work, practitioners review notes from previous sessions in JaneApp. Practitioners use JaneApp on an iPad during the session to adhere to integrated data collection prompts. On completion of the session, practitioners complete their documentation and add the 10 most pertinent photographs from the participant's learning experience to the appropriate JaneApp session

template. In this case, 'relevant photographs' mean those the practitioner selects to best showcase the thematic elements of the session. The remaining photographs are stored in the YJ EAL program's cloud interface at Murdoch University. Appendix A provides the JaneApp template employed in the YJ EAL program for real-time session data capture.

Phenomenological approach for capturing photographs and video data in the JaneApp Interface

All YJ EAL practitioners adopt a phenomenological approach to document behavioural observations via photos and video snippets during sessions, explicitly focusing on AYP–horse interactions. This method captures nuanced behaviours and AYP emotions that might not be fully evident in practitioner notes or self-reports. This approach is consistent with Indigenous decolonising research methodologies, which maintain rights and responsibility in photos as part of data and reflective practices. It enables EAL practitioners to authentically represent each AYP's cultural contexts and experiences, free from external influence or personal biases. A forthcoming publication will detail the phenomenological data capture, encoding and analysis methods employed in the YJ EAL program.

Using a phenomenological approach to notetaking using written or audio recordings integrated into the JaneApp interface

Whenever possible, the AEAL practitioner assigned to a participant at intake supports the person's learning experiences throughout their program participation. Phenomenological notetaking in JaneApp adheres to several key principles to ensure the accuracy and depth of the data, which are vital for upholding high standards of integrity and fidelity.

- **Objective language**: Focusing on recording observable facts without subjective interpretations or assumptions.

Judgemental language	Observational language
'The participant was scared when the horse came over to them'	'I noticed you moved away as the horse came close; can you tell me about that?'
'The participant seemed happy when they were feeding the horse.'	'I noticed you had a big smile on your face while you were feeding the horse, how were you feeling?'

Table 2: Common judgements to avoid in notetaking

- **Direct observation**: Documenting only what is observed during sessions, avoiding inferred judgements. Table 2 lists common biases to avoid, and Table 3 outlines examples of how to observe horse–human interactions, which are included in the AEAL practitioner training material.
- **Clarity**: Ensuring that notes are sufficiently detailed so an external reader can fully understand the events as they occurred.
- **Participant interactions**: Highlighting interactions between participants and horses to accurately document the dynamics and exchanges during the session, including both positive and negative interactions.
- **Exact quotes**: Recording AYP's verbatim quotes to preserve their authentic voices.
- **Environmental details**: Include information about the horses selected, activities conducted and relevant environmental factors observed during the session.

Yawardani Jan-ga equine-assisted learning session template embedded in JaneApp for consistent data collection

Appendix A offers a detailed view of the YJ EAL session template used within JaneApp. It includes information such as the session number and date, type of session, pre-lesson horse check, safety check, planned session theme and experiences for the young person, and session observations. Table 4 outlines the semi-structured prompts integrated into JaneApp to

EXAMPLES ON HOW TO OBSERVE HUMAN-HORSE INTERACTIONS
PARTICIPANT
Facial expressions and body language
Does the participant smile, laugh, cry, fidgets, is restless, hides behinds objects, eyes making or avoiding contact with horse, tense, or soft body / shoulders / face? Naturally managing impulses and regulating emotions or need reminders?
Verbal articulation
Notice the participant's ability to verbally express thoughts, observations of the horse, feelings, and needs: asking questions? Asking for help or waiting for an offer of help?
Body posture and position
Noticing energy and purpose through body posture and position when interacting with horse(s) - demonstrating confidence? Leadership? Body orientation away or towards horse? Clear with intentions?
Behaviours
Noticing if the participant is listening with understanding, naturally being kind (with words or touch) and rewarding for good behaviour or do they need prompting?
Is the participant engaged, focused, distracted?
Are they trying again or giving up on difficult tasks?
Are they trying new strategies and problem-solving? Accepting help and feedback? Using horse wisdom and safety guideline from previous sessions?
Physical distance
Notice where the participant chooses to position themselves in relation to the horse and to the practitioner. Does the participant stand close to the horse, or remain behind the fence? Appropriate for that session, activity, experience with horse?
Movement
A participant may be either fast or slow twitch. Observe how they might touch the horse- with slow smooth motions, or fast actions?
Are they able to be still or are they constantly moving in some way? Do they close their eyes during the Grounding body scan?
HORSE
Horse interest in the participant (e.g. willingness to interact, openness towards presence, body language alert or relaxed, ears + face alert or relaxed? Does the horse show up, holds space, walks away? length of engagement)
TOGETHERNESS
Noticing the connection and trust developed over time. Holding space, tuning in, mirroring, gait synchronicity, ability to move the horse with energy.

Table 3: Examples of how to observe human-horse interactions

support consistent capture of key session observations by session flow, thereby minimising variability in data collection.

Data management and results

All session voice recordings and practitioner notes collected through JaneApp are transcribed verbatim and organised by session sequence into a Microsoft Excel spreadsheet (2024). This organisation aids in the facilitation of rigorous data analysis. Following the transcription, two research assistants independently conduct a thematic analysis of the session notes. This analytical process is guided by Braun et al (2019)'s thematic framework, which aims to identify the

Grounding

- To note if participant kept their eyes closed, stayed still and used visible or auditory outbreaths.
- Note if the participant was jittery, jumpy, did not use out-breaths, could not focus or kept eyes closed.

Experience and processing: Use observational language to detail what transpires for the participant and the equine during the session, focusing on the participant's learning journey.

What horse did the AYP work with and why?

What emotions did you observe during the activity?

- Observe how the participant interacts with you and the equine, noting both verbal and non-verbal cues.
- Display positive or negative verbal and body language, including saying, 'I'm excited/feel happy', 'I'm nervous/scared', smiling, laughing, relaxed/tense face, relaxed/tense body, crying, body shaking, interest and curiosity.

What behaviours did you observe during the activity?

- Confident body language, respectful approach, noticing horse boundaries, aware of energy, fast/loud movements, ability to try again, give up easily, trying different ways to achieve the activity, number of tries to achieve equine experience, requests support from a practitioner?

How did the horse show interest in the AYP?

- The horse stays, shows up, does not move, walks away, does not approach, and has pinned ears or the horse follows the AYP

Did the AYP and horse work well together?

- Is the horse in tune with the AYP some of the time? All the time? Some of the time? Not observed.

Integration of learning (AYP reflections)

- Ask the participant about their understanding of the session and how they might apply the session's experiences with the equine in their home or school settings.
- Document their response verbatim, focusing on their key takeaways.

Post-session safety check

Undertake visual check of horse F096 Sound (looks good) F096 Unsound (some concern) F096 Other

Planning for the next session

- Can the participant move on to another theme? Or does the participant need more time to explore the same theme used today?
- Did the AYP make any requests for the subsequent session to work with a particular horse or do a specific activity?
- Specify the session themes that the next session should focus on.

Session reflections and/or points that need further attention

Closure

- Notice words used to say goodbye. Willingness to come back next week. Participation in the next session.

Table 4: Semi-structured note-taking prompts embedded in JaneApp to capture an Aboriginal young person's (AYP) learning during each session, organised by session flow

essential components or 'active ingredients' at each session stage. The themes and subthemes extracted during the analysis are then subjected to validation through consensus checks with an expert Aboriginal gold-standard practitioner (JC), reaching a predetermined level of agreement as recommended by guidelines for evaluating the methodological quality of measurement property studies (Mokkink et al. 2010).

Discrepancies that emerge during this process are carefully addressed through detailed discussions between the two research assistants and the expert Aboriginal practitioner (JC), which are crucial for ensuring the findings' reliability and validity. Additionally, a checklist is developed to ensure consistent tracking of the evolution of participants' experiences over time. This checklist documents the active components identified at each session stage. This systematic approach enhances the reliability of the thematic analysis and strengthens the validity of the data coding process. Consequently, this ensures that the findings are robust and can confidently inform current practice and future research.

Discussion

The primary objectives of this paper were twofold: first, to describe the standardisation process of the YJ EAL program's design and implementation; and second, to delineate the culturally secure, multimodal, multi-informant, qualitative data collection methodology employed to gather contextually valid longitudinal information on participants' experiences throughout the program.

Addressing the unique challenges encountered in interventions targeting Aboriginal communities, especially the need for cultural alignment and active community engagement, remains paramount for achieving efficacy (State Coroner 2019; Williams and Shipley 2023). As highlighted in a recent scoping review (Haig and Skinner 2022), global EAL programs serving Aboriginal populations demonstrate promising outcomes – including strengthened belonging and cultural connectedness, enhanced spirituality, reductions in antisocial behaviour and improvements in SEWB. However, these programs frequently face methodological challenges, including limited sample sizes, a lack of standardised protocols, and inadequate post-intervention evaluations employing culturally and post-colonially secure measurement approaches (Fuller-Lovins et al. 2023; Haig and Skinner 2022; Lee et al. 2016; Stern and Chur-Hansen 2019). In response, the YJ EAL program has pioneered a global-first, evidence-informed, Aboriginal-specific training package for AEAL practitioners, developed in collaboration with the Equine Psychotherapy Institute of Australia. This initiative strives to standardise and perpetuate EAL services within Aboriginal communities, simultaneously empowering local Aboriginal individuals to become practitioners who are adept at addressing their communities' SEWB needs in culturally secure ways.

This paper is the second in a series that describes the culturally secure data collection methodology employed by the YJ EAL program. It offers in-depth insights into the standardisation of data collection techniques and the theoretical and empirical foundations underpinning these culturally sensitive methods. The data are gathered with integrity and fidelity, utilising decolonising Indigenous approaches, such as phenomenology and participatory action research (Baum et al. 2006; Williams and Shipley 2023; Wojnar and Swanson 2007). Multimodal and multi-informant data include: (i) photographs focusing on the experiences and learning of AYP during the sessions using a phenomenological approach; (ii) written notes or voice recordings associated with these photographs guided by semi-structured cues; and (iii) AYP reflections on each session, invoked using semi-structured questions. All data are captured and managed in real-time through a custom-built system, JaneApp, which standardises data entry via tablet and web interfaces.

The methodologies described in this paper are designed to capture the nuances of human–horse interactions over multiple sessions and to prioritise stakeholders' lived experiences. These approaches ensure that data collection and evaluation are both culturally appropriate and ecologically valid, diverging from the conventional physiological and psychological assessments typically used in mainstream EAL programs. These strengths-based methods closely align with Aboriginal learning styles, expressive forms and worldviews.

The methodologies outlined in this paper are currently being evaluated through a longitudinal qualitative study design. This global-first, Aboriginal-led initiative aims to establish a benchmark for collecting qualitative phenomenological data in the EAL field

using culturally secure methods. The ongoing research and evaluation are vital to ensure that the YJ EAL program is an evidence-based practice. They will guide the development of similar interventions in other Aboriginal settings, thus responding to the demand for community-specific, culturally secure services advocated by Coroner Fogliani (State Coroner 2019). This endeavour underscores the authors' commitment to enhancing the integrity, applicability and future translation of EAL programs within Aboriginal communities globally.

Author contributions

J. Coffin: conceptualisation, methodology, software, validation, formal analysis, investigation, resources, data curation, writing – original draft, writing – review and editing, visualisation, supervision, project administration, funding acquisition. S. Vaz: conceptualisation, methodology, software, validation, formal analysis, investigation, resources, data curation, writing – original draft, writing – review and editing, visualisation, supervision, project administration. C. Olsson: conceptualisation, methodology, software, validation, formal analysis, investigation, resources, data curation, writing – original draft, writing – review and editing, visualisation, supervision, project administration, funding acquisition. C. Kickett-Tucker: conceptualisation, methodology, validation, formal analysis, data curation, investigation, writing – review and editing, visualisation, funding acquisition. H. Milroy: conceptualisation, methodology, validation, formal analysis, data curation, investigation, writing – review and editing, visualisation, funding acquisition. R. McPhee: conceptualisation, methodology, writing – review and editing, visualisation, funding acquisition. L. Nelson: conceptualisation, methodology, writing – review and editing, visualisation, funding acquisition. K. White: conceptualisation, methodology, validation, formal analysis, data curation, investigation, writing – original draft, writing – review and editing, visualisation, funding acquisition. D. Cross: conceptualisation, methodology, software, validation, formal analysis, investigation, resources, data curation, writing – original draft, writing – review and editing, visualisation, supervision, project administration, funding acquisition.

Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Author biographies

Professor Juli Coffin is a Nyangumarta woman from the Pilbara in WA. She is a leading Aboriginal researcher in Australia and is the founder and lead researcher of the *Yawardani Jan-ga* research project and Equine Assisted Learning program based in the Kimberley.

Professor Cheryl Kickett-Tucker's AM research is deeply rooted in her Wadjuk-Ballardong-Yued Noongar identity, which shapes her understanding of community, identity and wellbeing. As a member of the Noongar people from WA, she centres her work on addressing the unique needs of Aboriginal children and young people, emphasising social and emotional wellbeing, cultural identity, learning and language. Her research aims to bridge the gap between academic findings and grassroots Aboriginal communities, focusing on culturally respectful, community-driven approaches that empower communities to shape their own futures. Through her commitment to research translation, Professor Kickett-Tucker ensures that her work is not only academically sound but also transformative and directly applicable to real-world outcomes that positively impact Aboriginal children and young people.

Helen Milroy is from the Palyku people of the Pilbara region of WA but was born and educated on Whadjuk Noongar Boodja. She is a storyteller, artist and Professor in child and adolescent psychiatry, and has spent many years applying Indigenous knowledges to strengthen Aboriginal and Torres Strait Islander wellbeing. She sits on several state and national mental health and research advisory committees and boards, with a particular focus on Indigenous mental health, trauma and child wellbeing.

Rob McPhee is an Aboriginal leader from Derby in the West Kimberley and the Pilbara regions of WA. He is currently the Chief Executive Officer of Danila Dilba Health Service and Deputy Chairperson of the Aboriginal Medical Services Alliance NT (AMSANT). With prior leadership roles at Kimberley Aboriginal Medical Services (KAMS) and academic experience at Curtin University and UWA, Mr McPhee brings expertise in Aboriginal health, community engagement and social justice. His lived experience and leadership continue to inform his contribution to Aboriginal health research.

Lesley Nelson is a proud Noongar woman from the Balladong and Whadjuk clans and is a mother to three sons and a daughter. She has over 25 years' experience in various senior executive leadership roles within the Aboriginal health sector, the most recent being her current role as CEO of the South-West Aboriginal Medical Service.

Sharmila Vaz, Craig Olsson, Kristen White and Donna Cross are non-Indigenous Australian researchers working in varied disciplines on Whadjuk Noongar Country. As non-Indigenous researchers, they are committed to approaching discussions about Aboriginal and Torres Strait Islander wellbeing with respect, understanding and an acknowledgement of differing worldviews and biases.

Supplementary material

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