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Evaluating the Tidda Talk Program: A Culturally Relevant Approach to Assessing Social and Emotional Wellbeing in Young Aboriginal and Torres Strait Islander Women

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ABSTRACT

Issue Addressed: While culturally appropriate health programming for young Aboriginal and Torres Strait Islander people is increasing, evaluations of such initiatives remain limited by pragmatic and epistemological challenges. This study sought to address these limitations when piloting and examining the feasibility and acceptability of Tidda Talk, a social and emotional wellbeing program for young Aboriginal and Torres Strait Islander women. Specifically, the study aimed to: (1) examine the effects of Tidda Talk on participants' social and emotional wellbeing and physical activity beliefs and (2) explore the utility of a novel cultural wellness evaluation tool from a methodological perspective.

Methods: A single-arm quasi-experimental design was used engaging Aboriginal and Torres Strait Islander girls from Greater Sydney ($N = 70$). Self-report questionnaires assessed physical activity (PA) self-efficacy, PA enjoyment, psychological distress, and cultural wellness. Outcomes were analysed using paired-sample *t*-tests and descriptive statistics. The feasibility of the newly developed Cultural Wellness Index (CWI) was assessed through observational notes and analysis of missing data patterns.

Results: A small but statistically significant decline in physical activity enjoyment was observed ($p = 0.04$); however, mean scores remained in the high-level range. No significant changes were detected in other outcomes. The CWI showed moderate acceptability, with more than 10% missing data on 33% of items.

Conclusions: Changing the Tidda Talk program's delivery model, such as the exposure dose or session frequency, and additional wrap-around support for participants may be required to observe more positive outcome changes. The CWI requires slight refinement to enhance accessibility and usability.

So What? This study demonstrates how culturally grounded evaluation practices can inform and strengthen the assessment of Aboriginal and Torres Strait Islander health programs.

1 | Introduction

In recent years, there has been growing recognition of promising practices to promote the social and emotional wellbeing (SEWB) of young Aboriginal and Torres Strait Islander people [1–3]. Within this growth, there is a shift away from deficit-based narratives towards strength-based, culturally grounded, and community-led initiatives [4–6]. Increasingly, programs and policies are being called to reflect community worldviews and to be co-designed with Aboriginal and Torres

Strait Islander peoples [3, 4, 7–10]. While this shift signals meaningful progress, critical methodological and structural barriers persist in building a robust and culturally appropriate evidence base for SEWB promotion. Specifically, there remains limited empirical evidence on the effectiveness of available programs and services [11, 12]. A systematic review of Aboriginal and Torres Strait Islander health initiatives revealed that only 10% had been formally evaluated, and even fewer employed rigorous mixed-method or quantitative research designs capable of demonstrating intervention effects [11]. Barriers to effective evaluation are well-documented and include short funding cycles, difficulties with participant recruitment, limited organisational capacity, and insufficient community engagement in research design and implementation [12, 13]. As a result, the evaluation of these programs is limited by these structural and methodological constraints, meaning their effectiveness remains largely unknown, limiting the ability to scale up or embed successful initiatives in policy and practice.

A central methodological limitation lies in the tools used to assess SEWB outcomes. Standardised psychological measures commonly reflect Western understandings of mental health, often focusing on individual symptoms of distress, pathology or disorder [14]. These constructs do not align with Aboriginal and Torres Strait Islander conceptualisations of wellbeing, which emphasise a holistic, collective and relational approach to health encompassing connection to land, culture, ancestry, spirituality and community [15]. While some adapted tools exist, they are frequently retrofitted into existing frameworks and continue to operate within Western epistemological boundaries [16, 17]. Critically, few validated SEWB tools have been designed by and for Aboriginal and Torres Strait Islander communities [16–18], raising concerns about cultural relevance, validity and the ethical use of such instruments in Aboriginal and Torres Strait Islander health research [14].

Compounding these issues is a broader epistemological tension. The institutional systems that govern research, such as ethics committees, funding bodies and academic journals, often prioritise methodologies grounded in Western scientific traditions. These systems tend to privilege 'objective' and quantifiable evidence, potentially marginalising traditional ways of knowing, being and doing [13, 19]. When research is conducted using frameworks that do not reflect Aboriginal and Torres Strait Islander worldviews, the outputs risk being culturally irrelevant, as it may fail to capture community values. This creates a methodological impasse: how can researchers produce culturally meaningful knowledge while working within systems designed around Western research norms?

The concept of the cultural interface [20] offers a valuable framework for navigating this tension. Positioned at the intersection of Western and Aboriginal and Torres Strait Islander knowledge systems, the cultural interface invites methodological innovation grounded in ethical reflexivity and cultural responsiveness. Rather than subordinating one paradigm to another, it encourages researchers to work productively within the tensions, creating space for methods that honour both community priorities and Westernised academic expectations. Importantly, the cultural interface remains a critical and contemporary framework for guiding Aboriginal and Torres Strait Islander health research in Australia today [21], providing a means to balance cultural integrity with the methodological requirements of current research systems.

This study contributes to this growing body of decolonising research by evaluating Tidda Talk, a community co-designed SEWB program for young Aboriginal and Torres Strait Islander women. In doing so, it addresses two key methodological gaps. First, it examines the effects of the program on participants' SEWB and physical activity beliefs using a culturally informed quantitative approach. Second, it pilots and assesses the feasibility of a newly developed SEWB assessment tool specifically designed for young Aboriginal and Torres Strait Islander women and with the community. By engaging at the cultural interface, the study offers both theoretical and practical insights into culturally safe evaluation practice, contributing to the ongoing transformation of Aboriginal and Torres Strait Islander health and wellbeing research.

2 | Materials and Methods

2.1 | Study Design

A detailed description of the study design and methodological protocol aligned to the SPIRIT 2013 statement [22] has been reported elsewhere (https://doi.org/10.17605/OSF.IO/3TH5J), with some adjustments made throughout the two-year feasibility and acceptability trial to align with community preferences and increase cultural rigour. For example, shortening the duration of the proposed program from 12 to 8 weeks to fit within the school term due to pragmatic concerns and adapting both quantitative and qualitative data collection methods to become more culturally relevant.

In brief, this study utilised a single-arm quasi-experimental design employing self-report questionnaires to comprehensively understand changes in Tidda Talk participants' attitudes, knowledge, and skills regarding physical activity and SEWB in addition to psychological distress. A single-arm design was chosen in recognition of the ethical and practical considerations inherent in Aboriginal and Torres Strait Islander community-based research. Randomisation and the use of control groups were deemed inappropriate, as withholding a culturally beneficial program from some participants would conflict with principles of reciprocity and community equity.

Self-report questionnaires were implemented at baseline, in Week 1, and repeated in Week 8 during program time as a follow-up (Table S1). Observational notes were also taken during the questionnaire implementation including average completion time, literacy support provided, commonly asked questions, and overall engagement to further understand the feasibility and acceptability of selected measures as program evaluation tools. Within the intercultural research team, cultural interface principles guided the selection of measurement tools and analytical procedures, ensuring that community health perspectives and cultural priorities were foregrounded in the evaluation process. The team comprised three Aboriginal researchers (D.M., C.F., J.W.), one Torres

Strait Islander researcher (K.C.), and two non-Indigenous researchers (M.E., C.M.C.), which facilitated a blend of Aboriginal, Torres Strait and Westernised perspectives in the research. Importantly, community input was also sought for all measures. Tools suggested by Aboriginal and Torres Strait Islander academics were tested and refined during the program's co-design workshop and pilot implementation phase, with young Aboriginal women and Aboriginal SEWB workers providing feedback on literacy, accessibility, and cultural appropriateness.

The project has been approved by the Aboriginal Health and Medical Research Council (#1758/20), University of Technology Sydney Human Research Ethics Committee (#ETH20-5284) and the States Ethics Research Application Process (#SERAP 2022284). Participants provided informed assent prior to participating in the research project. Consent from a parent or guardian/adult acting in loco parentis was also obtained for youth under 16 years. Importantly, this research also aligns with the consolidated criteria for strengthening the reporting of health research involving Indigenous Peoples (CONSIDER) [23], detailed extensively in a separate publication [24].

2.2 | Intervention

The Tidda Talk program is an 8-week early intervention designed to enhance the SEWB of young Aboriginal and Torres Strait Islanders women aged 11–16 years. Delivered in a group-based format by two female Aboriginal community workers, the program leverages the established relationship between SEWB, physical activity, and cultural connection in its design [25, 26]. The dual component program approach consists of 45 min physical activity and 45 min psychosocial education, aligns with Aboriginal and Torres Strait Islander perspectives on SEWB, which emphasise connections to mind, body, culture, ancestry and community whilst offering a youth-friendly soft-entry method into SEWB promotion. Table S1 illustrates a typical program schedule with further programming specifics more comprehensively detailed in the program's feasibility and acceptability study [27].

Seven programs were delivered across Greater Sydney in New South Wales Australia on Thawaral, Darug and Eora Country from February 2023 till June 2024. Each program took place at either a participating school's ($N = 6$) or an Aboriginal community health organisation's facility ($N = 1$).

2.3 | Governance

This study and the larger Tidda Talk feasibility and acceptability trial are led and governed by Aboriginal and Torres Strait Islander peoples, in alignment with culturally specific ethical guidelines and principles such as self-determination, respect and reciprocity. Figure S1 depicts the governance structure, highlighting all key stakeholders involved in promoting cultural safety, community priorities and a strengths-based approach throughout the design, implementation and evaluation of the Tidda Talk program. Further details regarding specific roles and responsibilities are detailed in the project's co-design article [24].

2.4 | Participants and Recruitment

Participants included a purposeful sample of young Aboriginal and Torres Strait Islander women aged between 11 years living in Greater Sydney, who did not have any existing conditions that contraindicated participation in moderate intensity physical activity, such as musculoskeletal, cardiovascular, neurological and/or psychiatric disorder or illness. The sample was recruited through Aboriginal Liaison Officers, Heads of Student Wellbeing and Youth Workers at Aboriginal community-controlled organisations and local schools. A priority was placed on selecting individuals with identified behavioural challenges, issues with home life or suffering from any mental health-related concerns such as anxiety or depression.

2.5 | Self-Report Questionnaire Instruments

2.5.1 | Demographics

Baseline demographic information was collected from all participants, including age, grade, number of siblings, and area of residence. Participants were asked about their current physical activity participation inside and outside of school (Yes/No). Those who responded 'Yes' to outside school physical activity were asked to indicate the type(s) from individual activities, team sports, or leisure activities. For in-school activity, participants indicated whether this occurred through school sport and/or other physical activity opportunities. Socioeconomic status was also categorised by area of residence utilising the Index of Relative Socio-economic Advantage and Disadvantage [28].

2.5.2 | Physical Activity Self-Efficacy

An 8-item scale was used to measure physical activity self-efficacy. The items were taken from a modified simpler version [29] of the previously validated instrument by Motl, Dishman [30]. Each item used a Likert scale ranging from 1 ('Disagree a lot') to 5 ('Agree a lot'), with high scores indicating high physical activity self-efficacy.

2.5.3 | Physical Activity Enjoyment

A 5-point Likert scale [29] was used to measure physical activity enjoyment ranging from 1 ('Disagree a lot') to 5 ('Agree a lot'). All 7 items were negatively worded; however, for the purposes of consistency across data reporting, scores were reversed so that high scores represent high physical activity enjoyment. The minimum score was 5 and maximum 35. These seven items were taken from a modified 16-item version [31] of Physical Activity Enjoyment Scale (PACES) [32].

The original version of PACES was positively worded and scored on a range from 0 to 48. PACES scores below 24 are interpreted as lower enjoyment while being physically active. PACES scores above 24 are considered as high enjoyment while being physically active. The same threshold of 50% was applied to the modified version in this study adjusting for the difference in scoring protocol (i.e., scores less than 20 and below were deemed low and scores 20 and above were deemed high).

2.5.4 | Psychological Distress

Psychological distress was measured using the Mayi Kuwayu Kessler 5 (MK-K5) [18], a culturally modified and shortened version of the Kessler 10 [33]. The MK-K5 consists of 5 items ranging from 1 (None of the time) to 5 (All of the time); scores are then summed, with high scores indicating a high level of psychological distress. The categories and their cut-off scores used are 5–<8 for low, 8–<12 for moderate, 12–<15 for high, and 15–25 for very high psychological distress. This measurement tool has been shown to be reliable and valid within Aboriginal and Torres Strait Islander communities [18].

2.5.5 | Cultural Wellness

Social and emotional connections were assessed utilising the novel CWI, a subset of questions from the largest national longitudinal study on Aboriginal and Torres Strait Islander culture, health and wellbeing called Mayi Kuwayu [34]. Expected to be published as an independent measurement tool shortly, index questions were designed by members of the Aboriginal and Torres Strait Islander community [35] to align with cultural perspectives of SEWB. The index was designed for use with young Aboriginal and Torres Strait Islander women aged 8–16 years and consists of 18 items split across six different domains (i) Indigenous language, (ii) Connection to Country, (iii) Indigenous beliefs and knowledge, (iv) Cultural expression and continuity, (v) Family, kinship and community and (vi) Self-determination and leadership.

CWI items 2–13 were scored from 0 ('Want to but can't') to 4 ('A lot') whilst items 1 and 14–18 were coded from 1 ('Not at all') to 4 (A lot) on the same rating scale. 'Unsure' was provided as an option for items 2, 3 and 15–18 and treated as missing data and was not included in analysis, however, it was categorised separately from non-responses to allow for differentiation. Available responses from participants without any missing data (i.e., non-response or unsure) are summed together to provide a domain score with higher scores indicating higher cultural wellness. All coding and scoring were undertaken with guidance and advice of Mayi Kuwayu lead researcher Professor Ray Lovett to ensure accuracy.

It is important to note, the CWI was implemented in six out of seven Tidda Talk programs. The Strengths and Difficulties Questionnaire was originally used to measure social emotional behavioural outcomes. However, this was replaced in favour of the CWI given participant feedback regarding the extensive amount of questionnaire items and previously discussed limitations of utilising mainstream mental health tools. As such, cultural wellness has been measured for 58 participants.

2.6 | Analysis Procedures

Eight participants did not complete baseline questionnaires (T1) due to late program enrolment and were therefore removed from analysis, but continued to participate in the broader Tidda Talk study with parental consent and youth assent. Furthermore, 25 participants (22 participants for CWI programs) did not complete follow-up measures (T2) due to program drop-out (e.g., conflicting commitments, lack of school attendance); therefore, principles of intention-to-treat were applied [36]. Specifically, five rounds of multiple imputation were employed during analysis on these dropouts in addition to any other missing data, apart from CWI items which required participants to provide a response to all questions to be analysed. The imputation model included participant age and suburb of residence to improve prediction accuracy. Per-protocol analyses were also conducted for all outcomes, and findings were consistent with the imputed intention-to-treat results. A series of paired-samples *t*-tests assessed outcome changes over time from baseline to post-intervention among physical activity self-efficacy, physical activity enjoyment, psychological distress and cultural wellness domains. Figure S2 presents an overview of the above data cleaning and analysis procedures. Descriptive data characteristics are presented as means (M), frequency (F) and standard deviations (SD). Analyses were conducted using IBM's Statistical Package for Social Sciences (Version 29) [37]. Level of significance was set at $p < 0.05$. Pooled multiple imputations results were utilised for analysis purposes.

Acceptability of the CWI was assessed through examination of missing data across each item. Missing data of less than 10% was considered desirable [38] in alignment with other studies utilising Mayi Kuwayu study questionnaire subsets [39]. In addition, feasibility measures recorded within observational notes including completion time, number of participants requiring literacy support and questions asked were collated and presented as frequency (F) and means (M).

3 | Results

3.1 | Adherence

Program attendance data revealed that 63 out of 94 Tidda Talk participants (67%) attended 50% or more Tidda Talk sessions, with 39 out of 94 (38%) attending 80% or more. The average overall program compliance rate was 6 out of 8 (75%) sessions.

3.2 | Sample

The study sample consisted of 70 consenting participants, with a mean age of 13.69 years (SD = 1.04). All participants identified as Aboriginal and no Torres Strait Islander. The majority of the participants ($N = 40$) resided in areas classified as moderate to very low disadvantaged areas. Table 1 provides further details of participant characteristics.

TABLE 1 | Participant demographics.

Variable	Participants % (*n*)
Age	
11–13	52.9 (37)
14–16	47.1 (33)
Grade	
6–7	0.3 (21)
8–10	0.7 (49)
Siblings	
0	8.6 (6)
1–2	52.8 (37)
3–4	21.4 (15)
5+	17.1 (12)
Physical activity outside of school[a,b]	
Individual	19.8 (17)
Team sports	27.9 (24)
Leisure	20.9 (18)
None	31.4 (27)
Physical activity in school[b]	
Individual	13.3 (10)
Team sports	33.3 (25)
Other	20.0 (15)
None	33.3 (25)
Socioeconomic status	
1 Most disadvantaged	28.1 (16)
2	14.0 (8)
3	28.1 (16)
4	7.0 (4)
5 Most advantaged	22.8 (13)

[a]$N = 2$ non-respondents.
[b]Participants could answer more than once.

3.3 | Outcome Data

At T1, low levels of psychological distress were reported by 9 participants (13.2%), moderate by 18 participants (26.5%), high by 14 participants (20.6%), and very high by 24 participants (35.3%), with 2 responses missing (2.9%). Whilst at T2, low distress was reported by 10 participants (14.7%), moderate by 17 participants (25.0%), high by 11 participants (16.2%) and very high by 28 participants (41.2%), with 1 response missing (1.5%).

For physical activity enjoyment, T1 data showed that high enjoyment was reported by 56 participants (82.4%), low enjoyment by 10 participants (14.7%), and data were missing for 4 participants (5.9%). In T2 data, high enjoyment was reported by 57 participants (83.8%), low enjoyment by 10 participants (14.7%) and data were missing for 3 participants (4.4%).

Although some favourable trends were noted within the data, there were no significant differences found from T1 to T2 for physical activity self-efficacy, psychological distress, or cultural wellness domains, and small effect sizes were observed across all variables (as indicated by Cohen's d; see Table 2). However, there was a statistically significant difference with a small effect size ($d = 0.24$) for physical activity enjoyment ($t(69) = 2.04$, $p \leq 0.04$), which declined from T1 ($M = 25.83$, $SD = \pm 6.09$).

3.4 | Feasibility and Acceptability of the CWI

For the average group size of 10 it took participants 19 min to complete the CWI. Literacy support was provided at 2 out of 6 (33%) programs with 4 out of 58 (6.9%) participants requiring assistance. A total of five questions were asked throughout this stage of data collection, primarily related to clarification of culturally specific terms ($N = 4$). Specific questions are displayed in Table 3.

A total of 6 out of 18 (33.3%) CWI items [2, 3, 15–18] had missing scores of more than 10% assessment indicating poor acceptability. Out of these items, 4 [15–18] had missing scores of greater than 10% at both T1 and T2. Items came from the 'Indigenous language', 'Family, kinship and community' and 'Self-determination and leadership' domains. Where available 'unsure' responses were primary contributors to missing data rather than 'non-responses', specifically items: 2, 3, 15, 16, 17 and 18. Frequency of responses for all CWI items are displayed in Table S2.

4 | Discussion

The Tidda Talk program was designed to foster SEWB in young Aboriginal and Torres Strait Islander women through an integrative and holistic approach, emphasising physical activity, psychosocial education and cultural connection. The program achieved strong participant engagement, with an average attendance rate of 75%, reflecting its cultural relevance and community acceptance. Statistical analysis revealed no significant changes across most measures (i.e., physical activity self-efficacy, psychological distress, or cultural wellness); however, the study's findings offer valuable insights for future program implementation and underscore the complex psychosocial landscape that these young women navigate. Furthermore, assessment of the CWI revealed it to be an acceptable culturally relevant measure to assess SEWB outcomes; however, some comprehension and methodological challenges were evident.

A statistically significant decrease in physical activity enjoyment was observed, albeit with a small effect size. This change may reflect factors specific to the intervention period or external influences such as broader school climate, family support and seasonal weather changes [40, 41]. For instance, girls' enjoyment of physical activity is shaped by the social and physical environments surrounding them, including school culture, peer relationships, and perceived family support, which can either enhance or inhibit motivation to be active [40]. Similarly, seasonal variations and weather conditions

TABLE 2 | Results of *t*-tests and descriptive statistics for outcome variables.

	Baseline		Post intervention		*t* (Two-sided *t*-test)	*d* (Cohens *d*)	*p*
Outcome variable	**M (CI = 95%)**	**SD**	**M (CI = 95%)**	**SD**			
Physical activity enjoyment ($N = 70$)	25.83 (24.39–27.27)	6.09	24.69 (23.05–26.33)	6.92	2.04	−0.24 (−0.49–0.00)	0.04*
Physical activity self-efficacy ($N = 70$)	29.90 (28.54–31.25)	5.53	29.65 (28.21–31.09)	5.96	0.52	−0.06 (−0.18–0.06)	0.61
Psychological distress ($N = 70$)	12.59 (11.46–13.71)	4.52	12.98 (11.78–14.17)	4.85	−0.85	0.10 (0.00–0.20)	0.40
Cultural wellness							
Indigenous Language ($n = 24$)	5.38 (4.18–6.57)	2.84	6.25 (4.91–7.59)	3.17	−1.44	0.30 (−0.12–0.72)	0.16
Connection to Country ($n = 36$)	1.78 (1.34–2.21)	1.29	2.00 (1.63–2.37)	1.10	−1.02	0.17 (−0.17–0.51)	0.31
Indigenous beliefs and knowledge ($n = 33$)	7.76 (6.56–8.95)	3.36	8.24 (6.92–9.56)	3.72	−0.70	0.12 (−0.23–0.48)	0.46
Cultural expression and continuity ($n = 34$)	9.09 (7.90–10.27)	3.40	10.06 (8.87–11.25)	3.41	−1.72	0.30 (−0.05–0.64)	0.95
Family, kinship and community ($n = 27$)	9.11 (8.24–9.98)	2.21	8.63 (7.63–9.63)	2.53	0.94	−0.18 (−0.58–0.21)	0.35
Self-determination and leadership ($n = 19$)	4.84 (3.92–5.77)	1.92	4.89 (3.92–5.87)	2.02	−0.22	0.03 (−0.46–0.51)	0.91

*Indicates significant main effects ($p \leq 0.05$).

TABLE 3 | CWI feasibility and acceptability indicators.

Program	Participants	Completion time all participants[a,b] (minutes)	Participants requiring literacy support	Questions asked and associated items (*n*)
1	7	18	1	None
2	10	19	0	Item 14: What does mob mean? (1)
3	9	20	0	None
4	14	18	0	None
5	5	16	0	Item 4: What does Country mean? (1)
6	13	25	3	Item 4: What does Country mean (2)? Item 15–17: What happens if I don't know any other Aboriginal or Torres Strait Islander members in my local community apart from my family? (1)
Mean	10	19		

[a]Baseline survey completion time only.
[b]Completion time excludes late arrivals.

can substantially affect participation and enjoyment of outdoor physical activity, particularly among adolescents [41]. Nonetheless, the majority of participants reported consistently high levels of physical activity enjoyment and self-efficacy from baseline to post-program with many participants already engaged in physical activities both in school and within their communities. These findings highlight a solid foundation of physical activity within this group, providing an encouraging base to build upon in future interventions.

Psychological distress scores remained steady, underscoring the significant mental health challenges faced by Aboriginal and Torres Strait Islander youth across Australia. National health statistics indicate that approximately 33% of Aboriginal and Torres Strait Islander youth experience high to very high psychological distress [42], while our study found the majority of participants reported high to very high psychological distress at both baseline (55.9%) and post-program assessments (57.4%). This highlights even more severe mental health challenges within the sample compared to national averages. This, however, is to be expected given the focus on recruiting individuals with behavioural, mental health or home-life challenges.

Given the short-term nature of this program, it is unsurprising that no significant reduction in distress levels was observed. Psychological distress is influenced by enduring, multifaceted stressors [43], therefore, substantial improvements may require a more extended or intensive version of the Tidda Talk program. While no evaluated wellbeing or mental health programs for Aboriginal and Torres Strait Islander youth have yet demonstrated significant changes in distress [44], broader youth-focused initiatives have shown improvements when delivered over longer durations. For instance, Glaser et al. found decreased psychological distress following a 12-week physical activity and mentoring program [45] highlighting the value of consistent engagement and social support in achieving mental health improvements. Accordingly, the Tidda Talk program should be refined to increase its duration and/or session frequency (e.g., reverting to the initially proposed 12-week program or undertaking multiple sessions per week) to support sustained engagement and potential wellbeing gains. The specific format and length, however, should be determined collaboratively with communities and stakeholders to further ensure acceptability and practical feasibility.

In the present study, numerous participants reported personal challenges during the program period, including family or friend bereavement, parental separation, abuse and interactions with the out of home care system, all of which are known to negatively impact mental health and SEWB [46]. These external factors may have contributed to persistently high psychological distress levels, suggesting that individual experiences outside of the program could overshadow short-term intervention effects. Embedding this program within other wrap-around services for Aboriginal and Torres Strait Islander youth, such as counselling, family support services and Aboriginal Community-Controlled Health Organisations, may provide a more comprehensive approach that addresses their broader needs. Future iterations of the Tidda Talk program should aim to optimise these linkages through guest speakers, referral pathways, and partnerships with local health and wellbeing organisations. The above proposed refinements, along with testing the program's scalability, should be the focus of future research through larger-scale evaluations. Further exploration of how Tidda Talk benefits young Aboriginal and Torres Strait Islander women with differing levels of distress and social contexts will also be essential for understanding what works, for whom, and when, advancing both the program and broader policy and practice in youth SEWB. To further assess SEWB outcomes and program impact, the CWI was utilised as a culturally relevant tool with the ability to combine 'academic priorities' alongside community health perspectives. Overall, the CWI can be considered a feasible method of assessing SEWB among young Aboriginal and Torres Strait Islander women, with 66% of items deemed acceptable. However, items within the 'Indigenous language,' 'Family, kinship and community,' and 'Self-determination and leadership' domains were consistently rated as less acceptable, indicating limitations in the measurement tool. Some of these challenges may reflect participants' young age, as certain concepts, particularly those requiring deeper cultural, linguistic, or leadership experience, may be difficult for adolescents to interpret or personally relate to. Regarding comprehension limitations, the type of clarifying questions posed during data collection revealed that some items required knowledge of culturally specific terminology (i.e., Country, mob), which not all young women possessed. Young people and families who have experienced disconnection from culture, such as individuals in out of home care or descendants of Stolen Generation, may find this particularly challenging [47].

To support participants with limited exposure to cultural concepts, providing definitions or clarifications for culturally specific terms within these items could enhance understanding and overall data quality. Additionally, providing verbal explanations and illustrative examples at the outset of data collection may further assist in addressing participants' limited familiarity. Implementing these changes would not only strengthen the CWI but also promote inclusivity and accessibility in assessing the wellbeing of young Aboriginal and Torres Strait Islander women regardless of their pre-existing cultural knowledge levels and connection to community.

From a methodological perspective, a significant factor affecting acceptability levels was the inclusion of an 'unsure' response, which was categorised as missing data. This led to a reduction in the available sample size for CWI domain assessments by up to 47%, suggesting that the tool, in its current form, may be less suitable for small-scale studies where data retention is critical. Since the CWI is a subset of questions from a national longitudinal health study [35] where excluding participants with missing data is more feasible as a cleaning strategy [48], this finding is unsurprising. To improve the CWI for future small-scale program and service evaluations, it is essential to consider alterations to some response options. Suggested changes include the removal of the 'unsure' option and enhancing consistency and alignment in response formats across all domains to allow for easier comparison and summation of responses to form a total cultural wellness score.

The strengths of this study lie in its quantitative cultural interface evaluation approach, being one of few Aboriginal and Torres Strait Islander health interventions to be assessed utilising both

culturally specific and validated questionnaires to form a culturally sensitive research methodology [11, 13]. Notably, while the cultural wellness tool used in the study has not yet been formally validated, this research plays a crucial role in improving the feasibility and acceptability of the tool as an important step prior to this. Another key strength of this study is its intervention adherence rate (75%), reflecting cultural relevance and community acceptance. Similar studies that have examined the effectiveness of group-based sport and exercise programs designed for Aboriginal and Torres Strait Islander adults have reported compliance rates ranging between 40%–70% [49]. However, limitations include the high participant research attrition rate, a consistently documented challenge in Aboriginal and Torres Strait Islander health studies [12], indicating the need for improved retention strategies. Additionally, the sample size for some outcome domains was small, reducing the statistical power of certain analyses. Future research with larger scale, powered studies is needed to verify these preliminary findings.

5 | Conclusion

While the Tidda Talk program did not yield significant changes across most measures related to culture and physical activity, this study offers valuable insights into how cultural interface principles can be practically applied to address current SEWB evaluation limitations, as well as opportunities for program design refinement (i.e., increasing length and/or frequency of program and embedding within wraparound support). In particular, the consistently high levels of physical activity enjoyment and self-efficacy observed at baseline and post-program indicate a solid foundation that could be further leveraged in future health interventions. Additionally, study findings suggest moderate acceptability of the CWI, highlighting areas for improvement to enhance its data retention and accessibility. Refining such tools will improve data quality, supporting the development and evaluation of programs aimed at promoting social and emotional wellbeing in Aboriginal and Torres Strait Islander youth.

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Ethics Statement

The project has been approved by the Aboriginal Health and Medical Research Council (#1758/20), UTS Human Research Ethics Committee (#ETH20-5284) and the State Education Research Application Process (#SERAP 2022284). All participants provided informed assent prior to participating in the research project. Consent from a parent or guardian/adult acting in loco parentis was also obtained for youth under 16 years.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section. **Figure S1:** outlines the Tidda Talk project's Aboriginal and Torres Strait Islander governance structure. **Figure S2:** provides an overview of the study's data collection and data-cleaning processes. **Table S1:** provides an example outline of the Tidda Talk program's content and structure. **Table S2:** presents the distribution of participants' responses to the novel Cultural Wellness Index.