i. Practitioners' perceptions of the ASQ-TRAK developmental screening tool for use with Aboriginal children: A preliminary survey

ii. Original manuscript

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ABSTRACT

Aim

To determine health practitioners' experience of using the culturally-adapted ASQ-TRAK and the Ages and Stages Questionnaire-3 (ASQ-3) with Australian Aboriginal families and their perception about parents' acceptability and understanding of the instruments.

Method

We surveyed a convenience sample of practitioners who had used both the ASQ-TRAK and the ASQ-3 developmental screening tools with Aboriginal children in the Northern Territory

and South Australia. We compared their experience and perception about parents' acceptability and understanding of both instruments.

Results

All 38 respondents used the ASQ-3, and 35 the ASQ-TRAK. 100% rated the ASQ-TRAK as more acceptable and easier to understand for parents; compared with 68% ($P < 0.001$) and 52.6% ($P < 0.001$) respectively for the ASQ-3. A greater proportion of respondents were satisfied using the ASQ-TRAK (100%) than the ASQ-3 (65.7%) ($P = 0.003$). A higher proportion indicated that the ASQ-TRAK was respectful (85.3% compared with ASQ-3 27.8%, $P < 0.001$), culturally relevant (70.6% compared to 16.2%, $P < 0.001$) and engaging (76.5% compared to 16.2%, $P < 0.001$).

Qualitative exploration of respondents' comments supported the quantitative findings. The ASQ-TRAK was considered more culturally appropriate, engaging and useful.

Conclusion

Our findings demonstrate that the culturally-adapted ASQ-TRAK is preferred to the ASQ-3 by health practitioners in the Australian Aboriginal context. Failing to address cultural and linguistic factors and applying measurement tools developed for one population to another, is problematic in any setting. While further research is required to explore parents' experience directly, these data provide support for the ASQ-TRAK to be used in this context.

Key words

child development; developmental surveillance; developmental screening; developmental screening tool; Australian Aboriginal; culturally competent care; cross cultural.

What is already known on this topic?

1. Structured developmental screening tools improve the early detection of developmental difficulties in young children.

2. The culturally adapted ASQ-TRAK developmental screening tool has high face-validity among practitioners, parents and early child experts.

What this paper adds:

1. Health Practitioners consider the culturally adapted ASQ-TRAK to be more acceptable and easier to understand than the ASQ-3 for Aboriginal families.
2. Health Practitioners indicate that the ASQ-TRAK was more respectful, culturally relevant and engaging than the ASQ-3.

INTRODUCTION

The lack of developmental screening and measurement tools that are culturally appropriate, reliable and valid for Australian Aboriginal populations has been a substantial gap in the early childhood area. The use of culturally inappropriate tools can be unreliable with harmful consequences, such as over- and under-identification of children with developmental challenges; services introduced late; and undermining Indigenous language and culture through an emphasis on the dominant culture and language¹. Research conducted in the Australian remote Aboriginal context confirmed that a standardised, mainstream developmental screening tool was not linguistically or culturally appropriate for this population².

To address this gap in the Australian Aboriginal context, an earlier study undertook a cross-cultural adaptation of the Ages and Stages Questionnaire (ASQ-3) developmental screening tool in the remote Australian Aboriginal setting³. The adaptation included modifying the language to very plain English; including culturally relevant examples in the questions; shortening the overall questionnaire; illustrating every question with a culturally relevant image; and ensuring the questionnaire was administered by interview, encouraging the caregiver and child to demonstrate each activity³. This involved the adaptation of seven of the 21 ASQ-3 questionnaires **were adapted** to align with the scheduled child health checks in Australia's Northern Territory (NT) at the time⁴. Findings from this study identified that the adapted **ASQ-TRAK** had high *face validity*; it was considered to be culturally acceptable and relevant to Aboriginal parents, Aboriginal Health Workers and early childhood development (ECD) experts³. Early published results from a *concurrent validity* study suggest that the ASQ-TRAK has acceptable concurrent validity statistics⁵, and further validity and reliability studies are in progress (S. Simpson, personal communication, November 2017).

Some health services across Australia that have implemented the ASQ-3 have now begun using the ASQ-TRAK questionnaires with Aboriginal families^{6, 7}. Early adopters in the Northern Territory (NT) have been the Office of Disability Top End Remote (OoD-TER) and Children's Development Team (CDT); services which provide support to children with developmental difficulties and disabilities. Allied health practitioners (AHP) from both services use the screens to better understand the needs of Aboriginal infants and young children referred for early intervention, and to engage and develop relationships with families. In South Australia, the Child and Family Health Service (CaFHS) centres responsible for universal early developmental screening using the ASQ-3, have been trialling the ASQ-TRAK since April 2017 in four sites, including Anangu Pitjantjatjara Yankunytjatjara (APY) lands, Port Augusta, Morphett Vale and Port Adelaide. **Although the ASQ-TRAK was adapted for use in remote Aboriginal communities, there was consensus among CaFHS staff that the mainstream ASQ-3 was not appropriate for urban Aboriginal families. Hence, the trial has included rural and urban centres as well.** In all sites in the NT and SA, the two instruments are being used concurrently.

While there is evidence that Aboriginal staff and Aboriginal families have found the ASQ-TRAK culturally appropriate and relevant, we have no data from practitioners who have used both the ASQ-3 and the ASQ-TRAK in the Australian Aboriginal context. There is now a group of health practitioners in the NT and SA who have experience using both instruments and could provide valuable insights into whether there is a difference in acceptability and relevance (the 'face validity') of the ASQ-3 and the ASQ-TRAK.

To aim of this study is to determine health practitioners' experience of using the ASQ-TRAK and the ASQ-3 with Australian Aboriginal families and their perception about parents' acceptability and understanding of the two instruments.

METHODS

Study sites and participants

The study was conducted in collaboration with the NT Office of Disability-Top End Remote (OoD-TER), the Children's Development Team (CDT) in the Top End, and the CaFHS in SA. All OoD-TER AHP who work across urban and remote regions in the northern part of the NT of Australia were invited to participate. These AHP support children with developmental delay, children and adults with diagnosed disabilities as well as aged care. In view of the population of young children in the NT being so small (there are less than 5,000 Aboriginal children under 5 years of age living across all of the NT⁸), contact with paediatric clients is variable. Almost half (49%) of the NT Aboriginal and Torres Strait Islander population lives in rural or remote areas and four of the top five Indigenous regions where Aboriginal and Torres Strait Islander people speak an Indigenous language at home are in the NT²⁶.

An additional two CDT staff who provide a service to transient Aboriginal families living between remote communities and Darwin, and to the Aboriginal Community Controlled Health Service in Darwin were also invited to participate.

The four CaFHS sites where the ASQ-TRAK is being trialled were involved in the study; the APY lands (remote), Port Augusta (rural) and the two urban sites, Morphett Vale and Port Adelaide. The sites were chosen by CaFHS as representative of the diversity of Aboriginal families across SA. In the APY lands almost 72% of people identify as Aboriginal and/or Torres Strait Islander and over 90% of households speak an Aboriginal language²⁷. While in Morphett Vale, 1.9% of people identify as Aboriginal and/or Torres Strait Islander and no families reported speaking any Aboriginal languages on the 2016 census²⁸. In these centres, the ASQ-TRAK is administered by Aboriginal Cultural Consultants (ACC), child health nurses and/or early childhood intervention consultants (ECIC), as part of a universal developmental screening program. All staff involved in administering the ASQ-TRAK in these trial sites were invited to participate.

Methods

All NT AHP were invited to participate by email with a link to an anonymous electronic survey. The email provided information about participating in the study and answering the survey implied consent. The survey was conducted over two-time periods, in January 2017 and in May 2018.

The SA CaFHS staff were sent the survey as an attachment via email in November 2017. The paper surveys were returned anonymously to the SA study coordinators and the data were entered into the electronic survey.

Survey

The survey was developed by the authors and included 3 demographic questions, 11 items rated along a 5- or 7-point scale and 3 open-ended questions. The items explored practitioners' perceptions and experience of using both the ASQ-3 and the ASQ-TRAK with Aboriginal children and families, including: "in your opinion, how easy to understand is the ASQ-3/ASQ-TRAK for Aboriginal families?", "...how acceptable do Aboriginal families find the ASQ-3/ASQ-TRAK?", "...how satisfied are you with the ASQ-3/ASQ-TRAK for use with Aboriginal families?". Respondents were invited to comment on what they liked most and what they found most challenging about using the instruments.

An initial version of the survey was first piloted with three AHP and was modified to remove any ambiguity and improve clarity.

Analysis

After exporting the Survey Monkey Microsoft Excel data file, we used Minitab 17 statistical software⁹ to analyse quantitative data. Items rated on 5- or 7-point scales were recoded to binary variables. Exact 95% confidence intervals for single proportions were calculated using the Clopper-Pearson method. McNemar's test was used to calculate *P*-values for a comparison of correlated proportions. 95% confidence intervals for differences of proportions were based on Method 4 from Lloyd (1990). All estimates of simple proportions and differences of proportions are reported on the percentage scale.

Qualitative data were subjected to thematic analysis. Comments were open coded and initial codes were incorporated into higher order themes. The themes were refined and labelled, as the data were reviewed.

Ethics

Ethics approval was obtained from Human Research Ethics Committees of the University of Melbourne (1646876) and of the Northern Territory Department of Health and Menzies School of Health Research (2016-2597). Ethics approval was also obtained from the

Aboriginal Health Research Ethics Committee (04-16-702) of the Aboriginal Health Council of South Australia, and from the Women's and Children's Health Network Human Research Ethics Committee (HREC/16/WCH185)

RESULTS

Sample Characteristics

(Table 1 here)

We received 38 responses to the survey, however, without certainty about the total number of AHP who use the instruments in the NT, it is not possible to calculate a response rate. In the SA sites, there was 100% response rate. Of those who did respond, 35 (92%) had used both instruments. Most respondents (71%) had worked in their roles for over 2 years. Practitioners used the ASQ-3 on a weekly basis (32%), more frequently than the ASQ-TRAK (23%). Of those respondents who used the ASQ-TRAK, most (68%) used it 'monthly' or 'every few months'.

(Fig 1 here)

All practitioners who had used both instruments rated the ASQ-TRAK as acceptable and easier to understand for parents (Fig 1.). 100% of staff indicated that the ASQ-TRAK was (somewhat/very/extremely) acceptable compared with 68.4% for the ASQ-3 ($P < 0.001$). Likewise, 100% considered that parents found the ASQ-TRAK (somewhat/very/extremely) easy to understand compared with only 52.6% for the ASQ-3 ($P < 0.001$) (see Table 2). Estimates of the differences of percentages, with 95% confidence intervals, are provided for all positive perceptions in Table 2.

(Table 2 here)

Respondents were asked about their satisfaction and confidence using the two instruments with Aboriginal families. Figure 2 illustrates that there was little substantive or statistical difference (6%) in respondents' confidence using the instruments. However, more practitioners were satisfied using the ASQ-TRAK (97.1%) compared with the ASQ-3 (65.7%) ($P = 0.003$) (see Table 2).

(Fig 2 here)

Respondents were asked to rate the ASQ-TRAK and ASQ-3 on the factors listed in Table 3 using a 7-point scale. The seven categories were reduced to two: "to a fairly great extent or more" and "to a moderate extent or less". We report the percentage with positive experience, corresponding to "to a fairly great extent or more". No factors were rated in favour of the ASQ-3. All factors revealed a statistically significant advantage for the ASQ-TRAK (Table 3). The differences were largest and over 50% for the ASQ-TRAK as more respectful (85.3% compared to ASQ-3 27.8%, $P < 0.001$), culturally relevant (70.6% compared to 16.2%, $P < 0.001$) and engaging (76.5% compared to 16.2%, $P < 0.001$) than the ASQ-3. For the other factors, the advantage for the ASQ-TRAK was between 24% and 49%. Table 3 provides the estimates for the differences in percentages and the 95% confidence intervals. (Fig 3 here)

(Table 3 here)

Qualitative Findings

The qualitative findings were grouped into three main themes: Cultural relevance; Utility; and Engagement.

Cultural relevance. Respondents commented that the ASQ-3 was not culturally appropriate. They described that many items were not relevant because the child had not had been

exposed to the activity. This made the ASQ-3 challenging to use. In contrast, respondents found that the ASQ-TRAK was culturally appropriate. The adapted items were considered to be more representative of Aboriginal people and thus more acceptable to families. One respondent commented on the universality of the adapted ASQ-TRAK:

“[ASQ-TRAK] uses everyday items that all children are familiar with regardless of culture, geographic location and socioeconomic status”

Many respondents described the ASQ-3 positively, as a low cost, reliable screening tool. These respondents described the ASQ-TRAK as having the same qualities, however, as being more appropriate for the context:

“[ASQ-3 is] low cost, easy to implement, good global screen to triage referrals...[ASQ-TRAK is] same but more appropriate for context”

For one respondent, although the ASQ-3 had been adapted, it remained a Western instrument with many items still considered irrelevant for the population.

Utility. The ASQ-3 was described as being difficult to understand for families. Respondents commented that this led to responses that did not accurately reflect the child’s ability, or to items being omitted:

“The ASQ-3 contains a number of concepts and activities that are completely foreign to remote families and difficult to explain. Consequently, we end up skipping a few items...”

One respondent felt strongly that the improved understanding of the ASQ-TRAK meant that “the ASQ-TRAK data is usually more accurate than the ASQ-3”.

Respondents described that both tools were simple and easy to use and included practical, activity based questions. However, some qualified that the ASQ-TRAK was more useful because it was simplified and culturally appropriate. Some of the modifications, including the illustrations that accompany the ASQ-TRAK and clear domain descriptions, were considered to aid families to “follow along”. The illustrated flip-charts were described as “particularly useful when completing the questionnaire through an interpreter”.

Respondents were generally very positive about the ASQ-TRAK, describing it as “fabulous”, “great”, “a fantastic tool in the context”:

“The ASQ-TRAK is a huge improvement on the ASQ-3 for Aboriginal families...”

The limited availability of ASQ-TRAK questionnaires for all ages was identified as an issue. There were requests for further ages to be adapted:

“The only criticism I have about the ASQ-TRAK is the limited age ranges that are currently available. I often have to revert back to using the ASQ-3 with Aboriginal families because the ASQ-TRAK does not cover the child's age, even though the ASQ-TRAK would be the much preferred tool for such families.”

Engagement. Respondents reported that it was more difficult to engage parents in the screening process when using the ASQ-3 compared to the ASQ-TRAK. Families were more likely to be actively involved in the screening process with the ASQ-TRAK because they were able to understand and follow the questions and illustrations:

“When they see we are presenting something in a language they understand, engagement in the assessment is hugely noticeable - getting caregivers and family

members telling stories or extended responses to questions, rather than a one word answer 'yes' (because that's what they think you want to hear)."

A number of respondents commented that caregivers were more likely to tell stories about their child's ability when the ASQ-TRAK was used. Respondents described "positive interactions" with families and reported it was an "empowering" experience for parents when using the ASQ-TRAK.

Both tools were described as being able to demonstrate the next skill that might be anticipated, however, the ASQ-TRAK was judged more engaging because of the language. In one region, the ASQ-TRAK was available in the local Aboriginal language and some respondents reported that this was a significant factor for engaging families.

DISCUSSION

We aimed to determine the face-validity of the ASQ-TRAK, among health practitioners in the NT and SA, by comparing it with the ASQ-3. Our findings indicate that more practitioners who have used both the ASQ-3 and ASQ-TRAK with Aboriginal families regard the ASQ-TRAK as acceptable and easier to understand for families, and find it satisfactory to use. We also found that practitioners consider the ASQ-TRAK to be significantly more respectful, engaging and culturally relevant than the ASQ-3. The qualitative findings suggest that while the ASQ-3 is a practical, easy to use instrument, the ASQ-TRAK is preferred for use in this population. It was considered more culturally appropriate, engaging and useful.

It is widely agreed that developmental screening instruments designed in Western countries are not necessarily valid for children throughout the world¹⁰. The use of these tools in Indigenous contexts is not culturally appropriate and is likely to lead to inaccurate results that are unhelpful and may be harmful^{2, 11, 12}. Respondents in our study shared these concerns; they reported that ad-hoc modifications were often made, such as omitting items from the ASQ-3 due to parents' difficulty understanding, leading respondents to question

the ASQ-3 accuracy. Ad-hoc adaptation of mainstream instruments resulting in test bias has been discussed by other researchers exploring the use of mental health assessment and screening tools in the Australian Aboriginal context¹³. Omitting questions or rephrasing items may result in over- or under-identification of developmental difficulties and questions the test validity. Instead, respondents perceived parental understanding was much greater with the ASQ-TRAK and felt confident that the ASQ-TRAK more accurately reflected the child's ability than the ASQ-3. Respondents commented that the culturally relevant illustrations improved understanding and helped parents "follow along". This is consistent with previous research, which has reported that illustrations improve communication with Aboriginal Australians^{14, 15}.

Our findings support previous research that cultural adaptation of screening instruments improves acceptability and utility of tools for the Australian Aboriginal context. Williamson et al¹⁶ examined the acceptability of the Strengths and Difficulties Questionnaire (SDQ) with urban Aboriginal families in NSW. The SDQ is a child behaviour screening instrument, considered suitable for the Australian population. The study argued that while the content of the SDQ was acceptable overall, the instrument's cultural appropriateness would be improved with modifications, including altering wording and the method of administration¹⁶. Another study that explored the acceptability of an adapted screening instrument for perinatal depression and anxiety - the Kimberley Mum's Mood Scale (KMMS) - for use with Aboriginal women, found it more readily accepted by clinicians than the widely used Edinburgh Postnatal Depression Scale (EPDS)¹⁷.

More practitioners in this study considered the ASQ-TRAK to readily engage Aboriginal families than the ASQ-3. This is an important finding as engagement is crucial to the success of the developmental screening process. Engagement has been found to promote relationships between parents and practitioners across a range of settings^{18, 19}. It is vital to ensuring early detection of children at risk of developmental difficulties and to promoting

positive early childhood development^{20, 21}. A review of developmental screening in primary care settings highlights the value of parent-provider partnerships in improving the process of detecting developmental difficulties²². In a study exploring parents' perceptions of developmental screening processes, Nelson et al found that engaging parents in their child's development facilitates parents expressing their concerns and promotes learning, which in itself becomes therapeutic²¹.

Our findings demonstrate that the ASQ-TRAK was not only more often rated as engaging, but also more often respectful of families, culturally relevant and easy to use compared with the ASQ-3. In remote resource-constrained settings, the uptake of developmental screening tools that are the most useful, culturally appropriate and relevant deserve consideration to optimise the effectiveness of our efforts. It is also an imperative that we do not continue to deliver health services that exacerbate the inequities between Aboriginal and non-Aboriginal Australian health outcomes, by failing to provide culturally competent and respectful care²³⁻²⁵. Making the ASQ-TRAK available in remote regions that provide services to Australian Aboriginal families has the potential to improve access to and the accuracy of developmental screening^{18, 19, 24}.

Limitations

Although the overall sample size might be considered small in some contexts, the focus of the study is in the comparisons between instruments based on the responses of the same individuals. Therefore, the risk of response bias is less relevant as we do not expect the estimates of difference between instruments to be affected by response rate. Our sample size was small. However, Moreover, while the ASQ-TRAK is being adopted in more services, it must be noted that the instruments are being used concurrently in very few sites, therefore the number of possible respondents is small. Another limitation is the lack of parents' perceptions. This would have been beneficial (Smith, 2017), however, written surveys are of limited value in communities where literacy issues are high. While interviews offer a more acceptable data collection method, this has resource implications and was

beyond the scope of this study. Furthermore, many Aboriginal communities are considered “over researched” and it can be difficult to obtain agreement from community elders and health service research steering committees to conduct parent interviews, which are considered burdensome.

Implications and Conclusion

Further research is needed to explore Aboriginal families’ and community elders’ perceptions of the ASQ-TRAK compared to the ASQ-3, to add to practitioners’ perspectives. However, the findings from this study point to the need to seriously question the practice of using mainstream developmental screening tools in the Aboriginal context. Failing to address cultural and linguistic factors and applying measurement tools developed for one population to another, is problematic in any setting. Our findings provide support for the culturally adapted ASQ-TRAK developmental screening instrument to be used in this context.

REFERENCES

1. Ball J, Janyst P. Screening and assessment of Indigenous children: Community-university partnered research findings. Policy Brief presented at the Early Years Policy Forum. Vancouver: 2008.
2. D'Aprano A, Carapetis J, Andrews R. Trial of a developmental screening tool in remote Australian Aboriginal communities: a cautionary tale. *Journal of Paediatrics and Child Health*. 2011;47(1-2):12-7.
3. D'Aprano A, Silburn S, Johnston V, Robinson G, Oberklaid F, Squires J. Adaptation of the Ages and Stages Questionnaire for Remote Aboriginal Australia. *Qual Health Res*. 2016;26(5):613-25.
4. McKinnon T, Chatterji M. Beyond GAA to healthy under 5 kids in the bush: adapted from rationale for routine child health contacts draft. *Northern Territory Disease Control Bulletin*. 2008;15(4):24-6.
5. Simpson S, D'Aprano A, Tayler C, Toon Khoo S, Highfold R. Validation of a culturally adapted developmental screening tool for Australian Aboriginal children: Early findings and next steps. *Early Hum Dev*. 2016;103:91-5.
6. D'Aprano A, Simpson S. ASQ-TRAK 2017. Available from: <https://asq-trak.education.unimelb.edu.au/>.
7. Johnston H. Use of ASQ and ASQ-TRAK in the Office of Disability, Top End Remote. In: D'Aprano A, editor. 2016.
8. Australian Bureau of Statistics. 2016 Census QuickStats 2016 [14 December 2017]. Available from: http://www.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/7?opendocument.
9. Minitab 17 Statistical Software. State College, PA: Minitab, Inc.; 2010
10. Fischer VJ, Morris J, Martinez J. Developmental screening tools: feasibility of use at primary healthcare level in low- and middle-income settings. *Journal of health, population, and nutrition*. 2014;32(2):314-26.
11. Vameghi R, Sajedi F, Kraskian Mojembari A, Habiollahi A, Lornezhad HR, Delavar B. Cross-Cultural Adaptation, Validation and Standardization of Ages and Stages Questionnaire (ASQ) in Iranian Children. *Iranian journal of public health*. 2013;42(5):522-8.
12. Young NL, Wabano MJ, Ritchie SD, Burke TA, Pangowish B, Corbiere RG. Assessing children's interpretations of the Aboriginal Children's Health and Well-Being Measure (ACHWM). *Health and Quality of Life Outcomes*. 2015;13(1):105.
13. Thomas A, Cairney S, Gunthorpe W, Paradies Y, Sayers S. Strong Souls: development and validation of a culturally appropriate tool for assessment of social and emotional well-being in Indigenous youth. *The Australian and New Zealand journal of psychiatry*. 2010;44(1):40-8.
14. Janca A, Lyons Z, Gaspar J. Here and Now Aboriginal Assessment (HANAA): a follow-up survey of users. *Australas Psychiatry*. 2017;25(3):288-9.
15. Lin IB, Ryder K, Coffin J, Green C, Dalgety E, Scott B, et al. Addressing Disparities in Low Back Pain Care by Developing Culturally Appropriate Information for Aboriginal Australians: "My Back on Track, My Future". *Pain medicine (Malden, Mass)*. 2017.
16. Williamson A, Redman S, Dadds M, Daniels J, D'Este C, Raphael B, et al. Acceptability of an Emotional and Behavioural Screening Tool for Children in Aboriginal Community Controlled Health Services in Urban NSW. *Australian & New Zealand Journal of Psychiatry*. 2010;44(10):894-900.

17. Marley JV, Kotz J, Engelke C, Williams M, Stephen D, Coutinho S, et al. Validity and Acceptability of Kimberley Mum's Mood Scale to Screen for Perinatal Anxiety and Depression in Remote Aboriginal Health Care Settings. *PLoS One*. 2017;12(1):e0168969.
18. Woolfenden S, Posada N, Krchnakova R, Crawford J, Gilbert J, Jursik B, et al. Equitable access to developmental surveillance and early intervention--understanding the barriers for children from culturally and linguistically diverse (CALD) backgrounds. *Health expectations : an international journal of public participation in health care and health policy*. 2015;18(6):3286-301.
19. Whitesell NR, Sarche M, Trucksess C, The Tribal Early Childhood Research Center SWYC Community of Learning. The survey of well-being of young children: Results of a feasibility study with American Indian and Alaska native communities. *Infant Mental Health Journal*. 2015;36(5):483-505.
20. Eremita M, Semancik E, Lerer T, Dworkin PH. Can We Identify Parents Who Do Not Verbally Share Concerns for Their Children's Development? *Journal of developmental and behavioral pediatrics : JDBP*. 2017;38(3):224-7.
21. Nelson BB, Chung PJ, DuPlessis HM, Flores L, Ryan GW, Kataoka SH. Strengthening families of children with developmental concerns: parent perceptions of developmental screening and services in Head Start. *Ethn Dis*. 2011;21(3 Suppl 1):S1-89-93.
22. Gellasch P. Developmental Screening in the Primary Care Setting: A Qualitative Integrative Review for Nurses. *J Pediatr Nurs*. 2016;31(2):159-71.
23. Kendall E, Barnett L. Principles for the development of Aboriginal health interventions: culturally appropriate methods through systemic empathy. *Ethnicity & health*. 2015;20(5):437-52.
24. Smith K, Fatima Y, Knight S. Are primary healthcare services culturally appropriate for Aboriginal people? Findings from a remote community. *Aust J Prim Health*. 2017.
25. Australian Health Ministers' Advisory Council's National Aboriginal and Torres Strait Islander Health Standing Committee. Cultural Respect Framework 2016-2026 for Aboriginal and Torres Strait Islander Health: A national approach to building a culturally respectful health system. In: Council AHMA, editor. 2016-2026.
26. Australian Bureau of Statistics. Census of Population and Housing: Reflecting Australia – Stories from the Census, 2016. [3 May 2019] Available from <https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/2071.0~2016~Main%20Features~Aboriginal%20and%20Torres%20Strait%20islander%20Population%20Article~12>
27. Australian Bureau of Statistics. 2016 Census QuickStats APY Lands 2016 [3 May 2019]. Available from: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/406021138?opendocument
28. Australian Bureau of Statistics. 2016 Census QuickStats Morphett Vale 2016 [3 May 2019]. Available from: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/SSC40917?opendocument

Table 1. Characteristics of responders

Characteristic	<i>n</i> = 38
Disciplinary background, <i>n</i> (%)	
Child Health Nurse	13 (34)
Occupational Therapist	10 (26)
Aboriginal Cultural Consultant	4 (11)
Physiotherapist	4 (11)
Speech Therapist	4 (11)
Early Childhood Intervention Consultant	1 (3)
Missing	2 (4)
Regions worked in [†]	
Darwin urban (NT)	13
Darwin remote (NT)	11
East Arnhem (NT)	8
Katherine urban (NT)	11
Katherine remote (NT)	10
APY Lands (SA)	2
Port Augusta (SA)	4
Morphett Vale (SA)	4

Duration of time working in roles, *n* (%)

Less than 1 month	0
1-6 months	3 (8)
7-12 months	3 (8)
1-2 years	4 (11)
More than 2 years	27 (71)
Missing	1 (2)

Frequency of use of tools, *n* (%)

	ASQ-3	ASQ-TRAK
	<i>n</i> = 38	<i>n</i> = 35
Daily	2 (5)	0
Weekly	12 (32)	8 (23)
Monthly	10 (26)	11 (31)
Every few months	8 (21)	13 (37)
Once or twice only	4 (11)	2 (6)
Missing	2 (5)	1 (3)

†respondents were able to answer more than one region

Table 2. Positive perceptions⁺ of the ASQ-TRAK and ASQ-3

		ASQ-TRAK	ASQ-3	Difference of percentages	
		%	%	ASQ-TRAK minus ASQ-3	<i>P</i> *
Acceptability	Estimate	100	68.4	34.3	< 0.001
	95% CI	91.8, 100	51.3, 82.5	10.7, 52.2	
Confidence	Estimate	100	94.6	5.7	0.500
	95% CI	91.8, 100	81.8, 99.3	-10.6, 19.2	
Ease of understanding	Estimate	100	52.6	52.9	< 0.001
	95% CI	91.6, 100	35.8, 69.0	24.4, 70.2	
Satisfaction	Estimate	97.1	65.7	32.4	0.003
	95% CI	84.7, 99.9	47.8, 80.9	6.2, 56.2	

* *P*-value from McNemar's test

⁺Positive perceptions correspond to responding "somewhat/very/extremely" on relevant questions.

Note that the estimates for the individual tools are based on anyone providing an answer to one of the questions. The estimates for the differences rely on those answering for both tools.

Table 3. Positive experience⁺ of the ASQ-TRAK and ASQ-3

		ASQ-TRAK	ASQ-3	Difference of percentages	
		%	%	ASQ-TRAK minus ASQ-3	<i>p</i> *
Respectful	Estimate	85.3	27.8	56.3	<0.001
	95% CI	68.9, 95.0	14.2, 45.2	35.9, 76.6	
Practical	Estimate	76.5	31.6	44.1	<0.001
	95% CI	58.8, 89.3	17.5, 48.7	22.6, 65.6	
Engaging	Estimate	76.5	16.2	57.6	<0.001
	95% CI	58.8, 89.3	6.2, 32	37.7, 77.5	
Easy to use	Estimate	75.8	23.7	48.5	<0.001
	95% CI	57.7, 88.9	11.4, 40.2	24.7, 72.3	
Informative to staff	Estimate	70.6	37.8	33.3	0.007
	95% CI	52.5, 84.9	22.5, 55.2	10.3, 56.4	
Culturally relevant	Estimate	70.6	16.2	55.6	<0.001
	95% CI	52.5, 84.9	6.2, 32	32.6, 76.5	
Encouraging positive interaction	Estimate	67.6	21.1	47.1	<0.001
	95% CI	49.5, 82.6	9.6, 37.3	25.5, 68.7	
Promoting a partnership	Estimate	64.7	21.1	44.2	<0.001
	95% CI	46.5, 80.3	9.6, 37.3	24.5, 63.8	
Educational to parents	Estimate	58.8	31.6	23.5	0.039
	95% CI	40.7, 75.4	17.5, 48.7	2.3, 44.8	
Enjoyable for families	Estimate	47.1	13.2	32.4	0.003
	95% CI	29.8, 64.9	4.4, 28.1	11.7, 53.0	

Again, note that the estimates for the individual tools are based on anyone providing an answer to one of the questions. The estimates for the differences rely on those answering for both tools.

i. **Practitioners' perceptions of the ASQ-TRAK developmental screening tool for use with Aboriginal children: A preliminary survey**

ii. **Original manuscript**

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Fig 1. Practitioner perception of parents' acceptability and understanding of ASQ-TRAK and ASQ-3

Fig 2. Practitioner satisfaction and confidence using the ASQ-TRAK and ASQ-3.

Fig 3. Positive experience of the ASQ-TRAK and ASQ-3

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