Culturally Appropriate Training for Remote Australian Aboriginal Health Workers: Evaluation of an Early Child Development Training Intervention

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**ABSTRACT:** *Objective:* This study aimed to design, implement, and evaluate training in early childhood development (ECD) and in the use of a culturally adapted developmental screening tool, for remote Australian Aboriginal Health Workers (AHWs) and other remote health practitioners. *Method:* A case-study evaluation framework was adopted. Two remote Australian Aboriginal health services were selected as case-study sites. Materials review, semistructured interviews, posttraining feedback surveys, and workplace observations contributed to the evaluation, guided by Guskey’s 5-level education evaluation model. *Results:* Remote health practitioners (including AHWs and Remote Area Nurses) and early childhood staff from the sites participated in a customized 2½ day training workshop focusing on the principles of ECD and the use of the culturally adapted Ages and Stages Questionnaire, third edition. Consistent with adult learning theories and recommendations from the literature regarding culturally appropriate professional development methods in this context, the workshop comprised interactive classroom training, role-plays, and practice coaching in the workplace, including booster training. The qualitative findings demonstrated that mode of delivery was effective and valued by participants. The workshop improved practitioners’ skills, knowledge, competence, and confidence to identify and manage developmental difficulties and promote child development, evidenced on self-report and workplace clinical observation. *Conclusion:* The findings suggest that the practical, culturally appropriate training led to positive learning outcomes in developmental practice for AHWs and other remote health practitioners. This is an important finding that has implications in other Indigenous contexts, as effective training is a critical component of any practice improvement intervention. Further research examining factors influencing practice change is required.

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Prevention and early identification of developmental difficulties is recognized as a public health priority across all nations.1–3 A high proportion of childhood morbidity in low-, middle-, and high-income countries alike is due to developmental delays, disorders, or disabilities. Developmental monitoring, including regular developmental screening, with the purpose of early identification of a possible delay, is widely recommended.4

Prevention and early identification of developmental difficulties is recognized as a public health priority across all nations.1–3 A high proportion of childhood morbidity in low-, middle-, and high-income countries alike is due to developmental delays, disorders, or disabilities. Developmental monitoring, including regular developmental screening, with the purpose of early identification of a possible delay, is widely recommended.4 It is well recognized that health practitioners play an important role in providing developmental services to children in all settings.4,5 Increasingly, child development is being addressed during health care encounters in low- and middle-income countries.6 In remote Aboriginal* communities of the Northern Territory (NT) of Australia, performing developmental checks is the responsibility of health practitioners. The Healthy Under 5 Kids (HU5Ks) program is a schedule of 10 “well-child” health checks provided to all Aboriginal children less than 5 years of age living in remote NT Aboriginal communities. At 7 of the 10 HU5Ks checks (2, 6, 12, 18, 24, 36, and 48 mo) children are scheduled to have a developmental check delivered by remote health practitioners.7

Most remote health centers in the NT are staffed by a combination of Remote Area Nurses (RANs) and Aboriginal Health Workers (AHWs), with visiting medical staff, who are together responsible for all primary health-care...
services. A medical record audit study conducted in 2 remote Aboriginal health centers in the NT identified that while the majority of child health checks were conducted by nurses, a third were completed by AHWs. Although they may not represent the majority of remote health practitioners, AHWs make up the majority of Aboriginal health professionals and are identified as playing a crucial role in the provision of remote primary health services in the NT. In addition to their clinical skills, AHWs in the NT function as interpreters and as cultural brokers with local knowledge, experience, and community connectedness. It is a widely held view that better health outcomes are possible when health services include Aboriginal staff.

Although AHWs in the NT are expected to deliver developmental services, they are not necessarily adequately skilled to provide these checks. An AHW training package exists, which is a set of nationally endorsed standards and qualifications used to recognize and assess the skills and knowledge for Aboriginal and/or Torres Strait Islander Primary Health Care Workers. Trainees must complete a number of core and elective units in order to receive their Certificate IV qualification. The training package does not currently include any units, core or elective, that deal with early childhood development (ECD), and in 2011, less than 5% of AHWs had completed the online HU5Ks education package (L. Nuttall, written communication, November 2011). While the majority of developmental checks are being conducted by RANs in the NT, the proportion of RANs with child health qualifications continues to diminish and fewer than 50% had completed the HU5Ks education package in 2011 (L. Nuttall, written correspondence, November 2011).

Education and training is required for AHWs to develop essential skills and capabilities to be able to respond better to the needs of their community. RANs are key partners to AHWs in remote health services, and it is well known that these partnerships are essential for optimal provision of care. RANs require access to training in the area of ECD, not only because they provide much of the care in the remote context, but also to support the vital AHW-RAN working relationship.

This study aimed to address the significant gap in skills and training by (1) designing a culturally appropriate training program in ECD and in the use of a culturally adapted developmental screening tool for remote Australian Aboriginal Health Workers and other remote health practitioners and (2) evaluating the implementation of the program.

METHODS

Setting

The training was undertaken in 2 “very remote” communities in the Northern Territory (NT) of Australia. The communities are similar in size, with just less than 1000 people, of which approximately 85% are of Aboriginal and Torres Strait Islander descent. These communities are generally representative of other remote Aboriginal communities that experience significant socioeconomic disadvantage. Both communities have a primary health care center staffed with Aboriginal Health Workers (AHWs), Remote Area Nurses (RANs), and visiting medical staff.

Design

A case-study design was adopted as the preferred method to accommodate unexpected situations that might arise in the real-world, complex remote community setting. While experimental designs may establish whether a program is effective, they are limited in their ability to explain the process. This is particularly so when the systematic uptake of knowledge from developmental science is to be applied in settings where scant information is available about local customs and practices. Case studies can examine “how and why” the intervention worked or did not work. Although this was only a “2-case” case study, this is preferable over a single-case design, increasing the likelihood of a quality case study and adding confidence to the findings. The units of analysis (the “cases”) were the remote health centers in the context of a remote Aboriginal community in the NT. The health centers were examined as the main unit of analysis with the AWH group as the embedded units.

Participants

Nonprobability samples of AHWs and other remote staff were selected to participate in training, employing purposive sampling methods to gain information-rich sources. Information-rich sources offer greater understanding and insights into the phenomenon being studied than empirical generalizations.

Aboriginal Health Workers

There were a total of 10 AHWs in the 2 communities, all of whom were invited to participate in the study. A key objective of the study was specifically to explore AHWs’ experiences and perceptions; as such, “critical-case sampling” was performed. This sampling technique involves cases or sources that are crucial for the project.

Other Participants

In addition to the AHWs, a number of other remote health staff were invited to participate in the training, including RANs and Aboriginal community-based workers from the health center; child health nurses supporting the health center, and health service managers. Aboriginal early education staff were also invited to participate at the suggestion of the health center staff.

Development of the Talking about Raising Aboriginal Kids (TRAK) Training Program

We developed the Talking about Raising Aboriginal Kids (TRAK) training program content and process based on: a training needs analysis; literature review of culturally sensitive training; consultations with early childhood experts with a long history of training in children’s services and early childhood education in the remote Aboriginal context; and the Healthy Under 5 Kids
The content of the TRAK training included 5 main topics: (1) principles of growth and development; (2) risk factors to child development and early brain development; (3) developmental milestones; (4) the principles of developmental monitoring; and (5) using the adapted developmental screening tool, the Ages and Stages Questionnaire (ASQ)-TRAK.21 The TRAK training was a face-to-face workshop involving practical workplace coaching compared with the HU5Ks training, a 20-hour online education package. While the TRAK training’s focus was early childhood development (ECD) and provided specific instruction on a structured developmental screening tool, the HU5Ks education package covers all aspects of child health in the remote Aboriginal context.

The TRAK training focused on the needs of the AHWs, as key staff identified in this context. However, it was developed for a mixed group, which also included the participants described above because consultation with the communities identified them as staff who would be involved in the future implementation of developmental services.

The training workshop followed a structured learning plan and training manual. It included 2 days of classroom teaching and a half day practice coaching session, undertaken in the workplace in community. Under the supervision of the first author, this practice coaching provided individual face-to-face coaching in the administration of the ASQ-TRAK. Three months after the workshop, we offered a workplace booster session to the AHWs and RANs only, as they were identified as the staff who would implement the ASQ-TRAK in the health center (Fig. 1). The booster began with an individual face-to-face recap session to review the elements of the developmental screen. The first author supervised participants administering the ASQ-TRAK and provided coaching during the consultation and feedback afterward.

Drawing on adult learning literature and a thorough examination of the evidence for strategies to enhance culturally appropriate training, the training respected and built on the existing skills and knowledge of the participants. The first author facilitated all training workshops with a research assistant and provided all practice coaching. Although we approached Aboriginal leaders in both communities to cofacilitate the training, the women nominated were unavailable. Nevertheless, as leaders in the community their input was sought, consistent with the spirit of knowledge exchange.

**Measures**

**Evaluation of the TRAK Training**

It was important to know whether the program was implemented as intended before determining whether training was successful or not. Thus, the evaluation assessed the reach, dose, and fidelity of the implementation of the TRAK training, as key process evaluation components.22 Reach is defined as the extent to which the intended target group participates in an intervention, dose as the amount of the intervention delivered, and fidelity as the quality of the implementation of the program.

In addition to assessing the overall implementation, the initial training outcomes were also evaluated. The training evaluation plan for this study was guided by a 5-level model developed for the evaluation of professional development programs in education.23 The Guskey model proposes that training evaluations address 5 outcome levels: reactions, learning, behavior change, organizational support and change, and organizational impact. Each level builds on those that come before. Concentrating on behavior change or overall impact alone risks overlooking the important lower levels of evaluation.

Therefore, this study focused on the first 2 levels. Level 1, participant reaction, measures how participants in the training react to it; the extent to which they find the training to be of adequate quality, relevance, and usefulness. Kirkpatrick and Kirkpatrick refer to this as a measure of customer satisfaction. It is typically measured by evaluation or feedback forms or interview.

Level 2, participant learning, is defined as the extent to which participants improve knowledge and/or skill and change attitudes as a result of the training program. This level acknowledges that participants must effectively learn the intended information for the program to create the intended change. Learning is typically measured using surveys, knowledge tests, performance tests, role-plays, or self-rating. Kirkpatrick and Kirkpatrick recommend performance tests to evaluate increase in skills.

**ASQ-TRAK**

The Ages and Stages Questionnaire, third edition (ASQ-3) is a developmental screening tool that has been validated in a large, diverse standardization sample in the United States and has been found to have acceptable psychometric properties. An earlier study undertook a cross-cultural adaptation of the ASQ-3 for use with remote-dwelling Australian Aboriginal children, in the 2 settings of this study. The adapted ASQ-3—the ASQ-TRAK—was found to have high face validity and to be culturally acceptable and relevant to parents and AHWs and early childhood development experts. The ASQ-
TRAK was the developmental screening instrument in which the participants were trained.

**Training Feedback Surveys**

The survey consisted of 11 items, rated along a 5-point Likert scale, and 3 open-ended questions. The items assessed the quality, relevance, and usefulness of training. The open-ended questions invited comments and recommendations for improving training.

**Data Collection**

After training in the tool, the first author, a pediatrician, conducted semistructured interviews with participants. Interview schedules were used for all interviews, which were audio recorded. Interviews were undertaken to obtain AHWS’ and RANs’ perspectives of the relevance and usefulness of the training. We also allowed time and space to explore themes that were relevant but arose outside of the interview schedule. Interviews ranged in duration from 45 to 76 minutes and took place at informants’ workplace or at a setting of their choice.

We collected observational data during practice coaching sessions, while AHWS and other participants administered the ASQ-TRAK to children (n = 24) accessing the health service for HU5Ks health checks. This provided important qualitative data on the skills acquired to administer the ASQ-TRAK, including preparing, explaining and scoring the ASQ-TRAK, and providing feedback to caregivers. Detailed descriptive field notes were taken daily during data collection.

Feedback surveys were completed independently by all training participants immediately after completion of the workshop and were returned to a research assistant, allowing anonymity. Although deidentified, the pen and paper survey did ask the participant to nominate their position in the health service.

**Data Analysis**

All interviews were transcribed verbatim. Transcripts and field notes were coded using NVivo 10 software. We undertook thematic analysis to identify themes, which can be described as “abstract constructs” that link expressions in texts. Analysis was predominantly deductive (as themes were mainly focused around the interview schedule), but we also used an inductive approach where appropriate (as new themes outside the scope of the schedule were naturally derived from the material in the interviews as they arose).

Methods used included looking for repetitions in the text, looking for similarities and differences between statements and within and between transcripts (the “constant comparison method”), and “cutting and sorting.” The first author listened to interviews with the transcript and re-read the transcripts at least twice to enable immersion in the data. Coding was commenced on hard copies of 4 interview transcripts and then completed using the NVivo software. Initial coding aided in creating a “code-book” and as coding proceeded, a hierarchy of codes was developed and modified. As the analysis progressed, major themes (in other words, higher level or more abstract coding) emerged and a model was ultimately created in which the most important of these major themes were embedded, explaining the links and relationships. Concept mapping was used to display thematic relationships as part of the analysis process.

Ethics approval was obtained from the Human Research Ethics Committees of the NT Department of Health and Families and Menzies School of Health Research and of Central Australia.

**Findings**

In total, 19 participants took part in 4 training workshops. Community A’s health center manager was committed to every health practitioner being trained, and 3 workshops were delivered, 2 in back-to-back weeks, and the final workshop 3 months later. Community B did not enjoy the same level of support, and only 1 workshop was delivered. Of the 19 participants, 13 were Aboriginal including 7 AHWS. Across all 4 workshops, including the practical session, there was 100% attendance. Seventeen participants returned feedback surveys. We conducted posttraining semistructured interviews with 6 of the 7 AHWS who participated in the training and 4 RANs, 3 to 6 months after the training workshop.

The 11 health practitioners who took part in the original workshop were offered booster training and 3 participated, all in Community B. Two of the 5 health practitioners who participated in the initial training in Community B were on extended leave at the time the booster was scheduled. In Community A, there were 6 health practitioners who had participated in the first 2 training workshops and therefore eligible to participate in booster training when it was scheduled. Of these, 2 had left their positions in the health center, 2 were on extended family leave, one was participating in another training program, and the last was not able to participate due to staff shortages in the health center. The third training workshop in Community A was conducted 3 months after the first 2; therefore, those participants were not able to participate in the booster session. Offering an additional booster session for the third workshop was beyond the scope of the study. The same trainer delivered all 4 workshops.

**Participant Reactions**

Participants who completed the feedback survey all strongly agreed or agreed that the workshop was relevant to their work. Responses to the open-ended questions provided positive comments about the materials used, the content of the training, and the process performed, particularly the practical demonstration and role-plays.

Most respondents commented that they would change nothing about the training and overall, it was considered valuable training.
I’ve learnt heaps! Yeah...from doing it and from you. (RAN)

In interviews, AHWs also reported high satisfaction with the training, supporting the finding that participants found the training valuable:

I mean if you wanted to go over everything with a magnifying glass, you could probably always change something. But...I think it’s pretty deadly†—it worked out pretty well... (AHW)

There were no withdrawals from the training and those who attended completed 100% of the classroom training in all 4 workshops, which supports the high level of satisfaction. Furthermore, while it was a challenge to start at the designated time on the first day of the training, suggesting some resistance, all participants attended at the agreed starting time on the second. Despite some Aboriginal participants acknowledging feeling nervous or embarrassed during the practical sessions, they all completed the practical sessions and did not display avoidant behavior.

The feedback surveys demonstrated that the training approach was equally acceptable to Aboriginal and non-Aboriginal participants. All respondents indicated that they strongly agreed or agreed that the design of the training—duration of training, level of difficulty, delivery methods and materials—was appropriate and interview data supported this finding. Notably, AHWs described the training approach as being "straightforward" and relevant. The child health–trained nurses who participated in the training considered the structure and design of the training as suitable for the Aboriginal staff because it was "geared at how they learn." There was agreement that the practical training, including the booster training, helped to reinforce learning and to build confidence:

I think the more you do things like that, you know, it’s better. It sort of sets in. (AHW)

All participants welcomed the practical sessions and were happy to be supervised in the practical session, with the exception of the youngest AHW. She described feeling nervous and did not enjoy being watched closely during the practical session. Despite this, she completed 3 checks in total, and notably none of the participants avoided this component of the training.

Informants agreed that it was worthwhile to have a mix of staff participating in the training. Although the ASQ-TRAK does not strictly require training, especially for child health–trained practitioners, the child health–trained key informants reported that it was preferable to learn the tool formally, through participating in the training with the other health center staff. AHWs also agreed that it was important that nurses and AHWs complete the training together to ensure all health center staff had a shared understanding of the purpose of the ASQ-TRAK and to increase the likelihood of staff supporting each other to complete it.

### Participant Learning

#### Improvements in Knowledge and Skill

Interviews were conducted 3 to 6 months after the training. Most AHWs, even those with young children and grandchildren, acknowledged that before training, their knowledge of typical child development and the impact of environmental factors on long-term outcomes was limited. Feedback surveys confirmed this finding.

All but one of the respondents’ feedback survey reported that they strongly agreed or agreed that after the training, they had a greater understanding of ECD policies and guidelines (such as HU5Ks) and of community services available to promote child development. Whereas before training, Community B AHWs were not able to name the HU5Ks program and were unaware that it included a developmental check, posttraining interviews they were able to discuss the program in detail.

After the training, AHWs described having the skills to communicate with parents about their child’s development. The AHWs recognized that the ASQ-TRAK can also be used to counsel caregivers on activities they can practice with their child to promote development:

It’s good to talk to mother and show her the tools, what the child can do. While we’re doing that...we can explain it to mum. This is ‘cause some mums don’t know...She might go back and do the same with the child at home...plus they can teach other parents or young mothers that don’t really understand. (AHW)

Opportunities to assess each participant’s ability were incorporated into the training. A number of activities built on knowledge from previous activities, reinforcing learning principles, and providing a demonstration of the knowledge the learner had acquired and retained. We were also able to gauge learners’ performance through observation and reflect on this at the end of training in the debriefing sessions. When discussing the scoring and implications of the scores in the classroom training, one AHW explained to the group:

Children in the grey zone are like being at the fork in a river. Children can go down one river or another. But we want children to go up the good river. Not the river with the crocodile. If they get guidance and good advice, they’ll go up that good river. (AHW)

An important indicator of learning is whether an activity completed in the classroom can be transferred to the workplace. All participants demonstrated that they were capable of transferring their learning to the workplace. They administered the ASQ-TRAK, including explaining the developmental check, scoring the ASQ-TRAK and providing feedback to caregivers.

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†‘Deadly’ is an Aboriginal English word for ‘fantastic,’ ‘great’ or ‘awesome.’
Three participants completed the booster training with the first author. Two staff had used the ASQ-TRAK since the initial training. They both demonstrated a very high level of skill in their first practice after reviewing the materials and guidelines one-on-one. The third participant did not appear as confident and needed some prompting during the coaching session. The 3 participants underwent formal assessment, using a structured observation check list. All 3 demonstrated a high level of skill, with improvements found between the practice and the assessment, but particularly in the participant who had the least experience with the tool. Almost all skills were either completed or partially completed, and the tasks that were overlooked were minor omissions. No difficulties were encountered with the scoring, interpreting, or recording.

**Change in Attitude**

Participants were observed to be confident during administration of the ASQ-TRAK. This is consistent with the feedback surveys; 16 of the 17 respondents strongly agreed or agreed that the training increased their confidence in inquiring about development, providing simple advice, and picking up developmental problems. The interview data further supported this finding:

Yeah…It’s changed. So the change is, I feel confident. I can get the parents and kids and ask those questions… and if I find any problems in there I write it in a note. So, yeah…I feel confident with that area… (AHW)

After the training, all respondents strongly agreed or agreed that they felt able to use the ASQ-TRAK in their work. AHWs reported confidence in being able to explain to the caregivers why the ASQ-TRAK was necessary, administering the questionnaire and providing feedback about the results:

…after the training, I felt—even though I don’t usually see kids—felt more… confident about talking to them about their kids and just telling what’s normal and what’s not. (AHW)

AHWs described feeling more confident in dealing with children generally. One AHW reported quite emphatically:

[The training] made me more confident in being a mother! (AHW)

The knowledge that the ASQ-TRAK was a specifically designed developmental screening tool that had been culturally adapted also increased confidence:

…rather than asking a few stupid questions in among a check-up, you actually are asking important questions. (AHW)

The child health–trained AHW described that the training built her confidence, despite reporting there was no increase in her knowledge. It reinforced that her practice was appropriate, and she felt this emphasized the importance of her role:

Yeah, it makes me feel “oh, I am doing the right thing.” (AHW)

There were other attitude changes reported. One AHW had expressed before training that a culturally appropriate tool and training was unnecessary because Aboriginal people were capable of seeking attention if they had concerns. However, after the training, he saw the value of the tool in revealing skills the parents may not be aware of and of picking up problems that the practitioner may not detect by clinical judgment alone.

And you could see the value in [the ASQ-TRAK]... of doing it with the children. Where before I didn’t sort of thought just me looking at them and making an assessment myself… was good enough… (AHW)

The training led some participants to change their attitude to child health generally, such as expressing an interest in coordinating the child health–portfolio and assisting in delivering HU5Ks assessments.

**DISCUSSION**

This study found that the TRAK training was practical and culturally appropriate for AHWs and other practitioners in 2 remote Aboriginal communities in the Northern Territory of Australia. In both communities, participants had a positive response to the training program and materials, with generally high levels of satisfaction reported. The training was demonstrated to have a positive impact on participants’ knowledge, skills, and confidence, evaluated through feedback surveys, interviews and observations. AHWs and other participants demonstrated improvements in knowledge about early child development and services, and competence in administering the ASQ–TRAK.

The findings indicate the training methods successfully met the needs of learners with varying levels of competency, from different disciplinary backgrounds, and with varying English language and literacy proficiency. Most of the AHWs, and a number of other participants, were English as a second language (ESL) learners, which is often cited as a barrier to achieving educational outcomes in the Indigenous context.28 Despite this, the training was very well attended, an important indicator of satisfaction in any training program.29 ESL and other culturally sensitive strategies to address this need included interactive activities, small break-out groups, audio-visual materials instead of didactic teaching methods, demonstrations, and role-plays.30 Sufficient time was allocated for discussion and stories, and material was provided in “chunks” with the sessions planned so as not to overload the learner.29

Adult learning theories31 and literature exploring effective training in the remote Aboriginal context32–34.
was considered carefully, and informed the design and implementation of the TRAK training program. Moreover, the process of conducting a needs analysis identified the expectations of the learners and the deficiencies in current practice. Needs assessments are recognized as being crucial in educational processes that lead to health practice change. In this study, in addition to the information obtained, the needs analysis assisted with the engagement of the learners. Thus, the process of conducting a needs analysis identified the expectations of the learners and the deficiencies in current practice. Needs assessments are recognized as being crucial in educational processes that lead to health practice change. In this study, in addition to the information obtained, the needs analysis assisted with the engagement of the learners.

The practical component was an integral part of the TRAK training and hands-on practical training is consistent with recommendations from the literature regarding culturally appropriate professional development methods in this context. For Aboriginal learners, the process of delivery may be more important than the content of training. The participants’ feedback and interviews endorsed the practical sessions as one of the most beneficial aspects of the training and was supported by our observations. This approach is consistent with the literature on continuing medical education more broadly that highlights the value of practical sessions in enhancing the learning experience, building the learner’s confidence, and providing an opportunity for reinforcement.

There is substantial evidence that practice coaching (sometimes called educational outreach visits, academic detailing, or face-to-face visits) in health professionals’ workplace can be effective in improving practice. A US study evaluating pediatric developmental screening practice demonstrated that academic detailing had an impact on pediatricians’ behavior, resulting in increased screening rates. A Cochrane review on the effects of educational outreach visits on health professional practice found that even without additional interventions, such face-to-face visits can be effective in improving practice. The authors of this review noted a great deal of variation across interventions and although less common, some visits emphasized developing skills through practice. This process was thought to facilitate change in service contexts where lack of skills is a barrier to change. Practicing key skills has been identified in numerous experimental studies as a core component of effective training and identified as assisting in translation of policy into practice.

This study found that AHWs across both communities valued training with staff from varied disciplinary backgrounds. This is consistent with other studies in low- and high-income settings that concluded that to improve collaboration, all primary health care providers would benefit from similar training in child development. Offering training to all staff contributes to overcoming health professional demarcations, and there is evidence to suggest that this improves practice. Asbhy et al found that broad education to break down strict demarcation led staff to regard practice as “interprofessional” and resulted in improved health professional behavior.

Qualitative studies of barriers to staff conducting adult health checks in Aboriginal Medical Services have found lack of confidence to be a key factor. This has also been identified as a barrier to implementing screening and brief interventions for alcohol misuse in this context. Thus, an important focus of the training evaluation was to determine whether levels of confidence had improved. All AHWs, including the child health–AHW, described that the training and the use of the ASQ-TRAK led to greater confidence to inquire about child development, detect developmental problems, and provide advice to parents.

This study has demonstrated that participants effectively acquired new skills and knowledge. While participant knowledge will not independently affect change in practice, it must be acknowledged that it is an important behavioral determinant. In a survey examining practitioners’ provision of healthy lifestyle advice, Asbhy et al adopted a modified theory of planned behavior. They found that practitioners’ belief in their capability was a key determinant of their action. In addition, when lack of knowledge was combined with lack of clear roles, it reduced the behavior further. Likewise, Cane et al using an integrative theoretical framework developed for behavior change research, identified that lack of knowledge is a potential barrier to a number of health professional behaviors. An evaluation of a training program for primary health care practitioners, including AHWs, in chronic disease self-management identified that lack of knowledge was one of the principal barriers to practice change.

The major strengths of this study are the range of data collected by using multiple methods, including observation of practitioners to assess competency; the high fidelity of implementation of the training workshop aided by ensuring sufficient time for planning and delivery of the workshop; and paying close attention to the relevant literature and strategies preferred by Aboriginal learners.

The study has some possible limitations. The evaluation relied on formative assessment and did not include a knowledge test pretraining and posttraining. However, objective testing is not without its problems. First, testing in this context may not be culturally appropriate. Participants had varying levels of English language and literacy proficiency and an overly intrusive method such as a test could have threatened the engagement with the process. The time and effort involved in completion of the measures may have further negatively influenced trainees’ response to training. Second, no valid and reliable knowledge test exists therefore using a test designed for this purpose could have introduced measurement error. Furthermore, formative assessment is considered an essential part of training evaluation, and a specific feature of the training design was to incorporate opportunities to assess each participant’s ability to achieve the learning objectives.

Another possible limitation is the small number of participants who undertook booster training. The
remoteness of the communities limited the number of booster training sessions able to be delivered and the many challenges of working in the remote Aboriginal context meant that few health practitioners were able to take up the booster training offered.

While acknowledging that training alone will not improve practice, a synthesis of implementation research literature concluded that effective training is a vital, “core” component of all effective interventions. Fixsen et al assert that effective training workshops consist of presenting information, providing demonstrations and ensuring participants have the opportunity to practice key skills. Medical education commentators acknowledge that better outcomes can be expected with well-designed educational interventions and quality teaching, even with reluctant learners. In this context, the TRAK training satisfied all these factors.

Although improving knowledge and skill will not automatically improve practice, this remains an essential step in any endeavor to change behavior. Our findings suggest the TRAK training could lead to positive outcomes in developmental practice in remote Aboriginal health services and in similar settings with limited child health-trained staff. Further research is needed examining factors that will influence practitioners changing practice and improving developmental services provided to children in this context.

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