

Reducing recurrence of bacterial skin infections in Aboriginal children in rural communities: new ways of thinking, new ways of working

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Abstract. Reports from health workers, school staff and community members in rural NSW suggested that bacterial skin infections are a significant health issue for Aboriginal children and their families, affecting quality of life and contributing to poor school attendance. Current NSW treatment guidelines do not incorporate important sociocultural factors or ways of living in Aboriginal communities. The aim of this qualitative study was to gain a deeper understanding of the experience of parents and carers of Aboriginal children affected by skin infections and of other community members, health workers and school staff, and what actions have been considered successful or unsuccessful in reducing the recurrence of infection. This study used a Participatory Action Research methodology. Interviews and focus groups were conducted with 38 health workers and managers, school staff, community members and parents and carers. Themes that emerged included: (i) skin infections have become normalised; (ii) skin infections are, in part, a consequence of transgenerational trauma; (iii) skin infections are interwoven with social determinants; (iv) families have survived but more could thrive; and (v) something can and should be done about the problem. The findings of this study will inform the development of more effective and acceptable options to reduce skin infections in Aboriginal children.

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Introduction

Australia, Canada, the United States and New Zealand report a high prevalence of pyoderma among some Indigenous populations (Andrews *et al.* 2009b). Pyoderma is not notifiable in most jurisdictions in Australia and hence there are no reliable data describing incidence and prevalence. High rates have been recorded in remote Indigenous (Aboriginal hereafter) communities in the Northern Territory and Western Australia (Bailie *et al.* 2005; Andrews *et al.* 2009a; Heyes *et al.* 2011). Causative organisms include group A β haemolytic Streptococci and more recently, *Staphylococcus aureus* (Mancini 2000; Valery *et al.* 2008; Palit and Inamadar 2010). Factors contributing to colonisation and invasion of the skin include warm and humid conditions, inadequate personal and environmental hygiene, living in crowded dwellings, pre-existing inflammatory dermatoses, skin injuries and previous antimicrobial drug treatment (Mancini 2000; Hedrick 2003; Marquardt 2014). The bacteria causing skin infections are communicable, transmitted by skin–skin contact, contact with contaminated objects or

close contact with nasal carriers (Spurling *et al.* 2009). Early diagnosis and treatment is recommended, as delays may lead to nephritis, carditis, arthritis, septicaemia, antibiotic resistance and recurrence of the infection (Hedrick 2003).

Current NSW treatment guidelines do not incorporate sociocultural factors or ways of living in Aboriginal communities as important components of the methods used to reduce the incidence or prevalence of skin infections (NSW Health 2016). Anecdotal reports from healthcare providers and community members in rural NSW suggest that bacterial skin infections are an important health issue for children and their families, have a significant effect on health, quality of life and contribute to poor school attendance. Together with this anecdotal evidence, recent focus groups with community members, health workers and school staff resulted in a request for more effective ways of tackling bacterial skin infections in Aboriginal children.

The aim of this qualitative study was to gain a deeper understanding of the experience of parents and carers of children affected by skin infections and those of other community

What is known about the topic?

- High rates of pyoderma have been recorded in remote Aboriginal communities in Australia.
- Current NSW treatment guidelines do not incorporate important sociocultural factors or ways of living in Aboriginal communities.

What does this paper add?

- Strategies that empower Aboriginal people and build on community strength, culture and connection to country are more likely to succeed than those that focus on disease alone.

members, health workers and school staff. The study also sought to describe what actions have been considered successful or unsuccessful in reducing the recurrence of infection. The findings of this study will inform the development and trial of more effective and acceptable options to reduce skin infections in Aboriginal children.

Methods

This study used a Participatory Action Research (PAR) methodology in four communities, based on an action cycle that recognises community perspectives; planning, acting, observing and reflecting. Sharing reflections with participants and communities enabled new data to be sought and incorporated in the research process (Crane and O'Regan 2010) (Fig. 1).

The PAR approach is collaborative, driven and owned jointly by community members and a multidisciplinary team of researchers. It is increasingly recognised as a culturally appropriate methodology for health research in Aboriginal communities, as it recognises both the community's expert knowledge about the subject and the researcher's methodological skills (Crane and O'Regan 2010; Evans *et al.* 2014). It promotes ongoing consultation, capacity building and community empowerment (Massey *et al.* 2011; Kelly *et al.* 2012; Miller

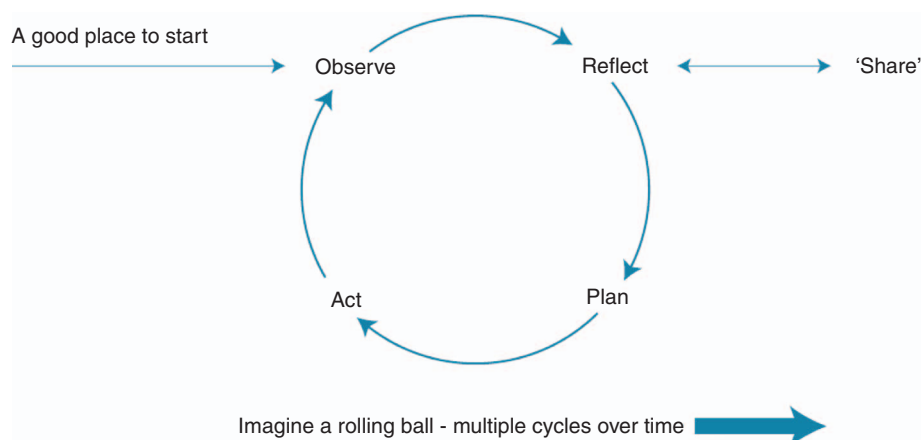
et al. 2015). Consultation with community members took place before, during and after the study (Box 1).

The research team included Aboriginal researchers with skills in communicable disease, public health, environmental health and health promotion. Researchers were well-placed to draw on their skills, knowledge and professional and kinship connections with participating communities. The Aboriginal researchers were generally well known and respected in participating communities, generating confidence in the process and outcomes. Other researchers had clinical skills and experience in primary healthcare settings, health service delivery and policy development. A refresher workshop on conducting qualitative research with Aboriginal people and communities was conducted with members of the research team.

Community members including parents and carers of children affected by skin infections were invited to participate in focus groups in their community. Health workers and teachers were invited to attend focus groups at their workplace. Health service managers and school principals were invited to individual interviews at their workplace. Questions were open-ended and interviews semi-structured. The project was promoted through the networks of an advisory group. A flyer was used to inform potential participants about the project and provide them with the opportunity to participate.

Researchers directly invited service managers. Service managers identified service providers (school staff and health workers) and invited them to participate. Service providers identified and invited community members to participate. All potential participants received a Participant Information Statement, a consent form and a list of questions that would be asked. Participation was voluntary and individuals could withdraw at any time. Written consent was obtained on the day of the interview or focus group.

Participants were asked to describe their experience with children's skin infections, which strategies had worked and which had not. They were asked about traditional remedies and what elements should be part of a new, effective and culturally appropriate approach to managing skin infections in children. Managers were asked about collaboration with other services



This cycle of inquiry is repeated until the conclusion of action research.

Fig. 1. The basic participatory action research cycle (Crane and O'Regan 2010).

Box 1. Community consultation process

Prior to this study;

- Received anecdotal reports of the burden of skin infections from health workers and school staff in several communities.
- Conducted informal focus groups to gather information and community views.
- Established a research team including several Aboriginal researchers.
- Consulted with the local Aboriginal Community Controlled Health Services (ACCHS).

During the study;

- Established an advisory group including some members from the initial focus group, community health workers, school Principals, community liaison officers and managers.
- Established regular planning meetings (teleconferences) with advisory group members seeking advice, informing members of progress and issues, addressing concerns.
- Undertook an initial planning visit by the research team to communities and participating organisations (health centres and schools).
- Undertook a second planning visit as above, including a community lunch in two settings, to consult with community members about the upcoming Healthy Skin Project, seek advice and provide information.
- Four visits to communities to conduct interviews and focus groups.
- Use of flyers, the school newsletter, Facebook and other means to communicate the project aims and opportunity to participate.
- Worked closely with recognised community leaders, liaison and education officers, nurses and school Principals and the ACCHS.

After the study;

- Returned to communities to provide feedback and listen, according to the Participatory Action Research method.
- Provided written feedback to all participants with opportunity to comment.
- Highlighted results in regular teleconferences.
- Revised results after several rounds of feedback and listening.
- Continuing to work with communities on the next phase of the project, developing more effective, culturally appropriate treatment models.

and policy issues relevant to effective management of skin infections.

Interviews and focus groups were conducted by at least two researchers, with at least one being an Aboriginal person. In keeping with cultural protocol, some interviews were conducted only by researchers who were Aboriginal. Interviews were digitally recorded and notes were taken as well. Recordings were transcribed and analysed manually by the research team, with emergent themes documented. Initial findings were presented to the participants for comment, with clarifications made and further data collected and analysed. The final results were presented to the communities, health services and schools involved for their feedback and endorsement.

To protect privacy and cultural knowledge, participating communities and traditional remedies have not been identified and all data has been de-identified. Ethics approval for the study was obtained from the Hunter New England Human Research Ethics Committee (HNEHREC 15/11/18/4.02), the Aboriginal Health and Medical Research Council, NSW (AH&MRC 1139/15) and the State Education Research Applications Process (SERAP 2015559).

Results and discussion

We conducted 13 individual interviews and nine focus groups with a total of 38 participants (Table 1). Most participants were female (33/38). Almost half of participants were Aboriginal. Interviews took place in community and work place settings at times convenient to participants, between and March and May 2016.

Table 1. Number of focus groups and interviews in four communities, with number of participants

Participant group	Format	Number of interviews and focus groups	Number of participants
Health service managers	Individual interview	2	2
Health service providers	Focus group	3	8
	Individual interview	2	2
School Principal	Individual interview	2	2
School staff	Focus group	5	15
	Individual interview	6	6
Community members	Focus groups	1	2
	Individual interview	1	1
Total		22	38

Initially participants described the effect of skin infections on children and these are summarised below.

There seems to be almost always someone with a boil or scabies or infected sore. Just like Staph infections... there'd be very little time that we wouldn't have at least one child with something and it's usually a lot of children [Non-Aboriginal School Administration Staff].

The effect on children was substantial, and was described by one Aboriginal school principal as 'Physical, emotional, social and academic'. Participants noted that children experienced significant pain, stigma, social exclusion, absenteeism and poor concentration at school.

They're quarantined from school if they've got lesions... their learning falls, then they come into the routine of not going to school' [ACCHS manager].

Many expressed frustration as they witnessed the children's suffering, '... the child's in that much pain... the poor kids are suffering. No need for it' [Aboriginal Education Officer]. Cross-infection and reinfection was observed, and families were often frustrated by the persistence of skin infections and the difficulty in treating them successfully:

People get very frustrated that they [children] have them. Some develop a Staph infection and it spreads like a fire... various treatments work for a while... then it'll start up again [Non-Aboriginal RN, Focus group].

Themes then emerged: (i) skin infections have become normalised; (ii) skin infections are, in part, a consequence of transgenerational trauma; (iii) skin infections are interwoven with social determinants; (iv) families have survived but more could thrive; and (v) something can and should be done about the problem. These are discussed below.

Skin infections have become normalised

Many participants commented on the fact that skin infections have become a normal part of life, a constant underlying problem, often overshadowed by larger issues of chronic disease and social problems, and that this may explain, in part, why children did not always receive prompt and comprehensive treatment.

Having sores and being unwell is commonplace. It's normal. We have to start with the young ones and say you don't have to have these sores. We have to change their mindset... it's the greatest barrier [Aboriginal Nurse Practitioner].

Assisting children to ask for help with their skin sores may be achieved through empowerment and advocacy approaches. School-based empowerment programs for Aboriginal children in northern Queensland were shown to increase self-esteem, confidence, assertiveness and problem-solving abilities (Tsey *et al.* 2005). This approach may be useful in engaging children to ask for treatment of their skin sores. Education of children and their families can include that skin infections are not normal, that there are associated risks of renal and cardiac disease and that treatment is available. Several participants remarked that education programs need to be fun, interactive, using demonstration and imitation. Other participants commented that solutions need to acknowledge Aboriginal ways of knowing, be culturally appropriate and acceptable and have the flexibility to meet the needs of individual communities. Recent evidence has found that successful social and emotional wellbeing programs for young people embrace a holistic definition of health, provide engaging, enjoyable experiences that connect to culture and celebrate small achievements (Blignault *et al.* 2016).

Skin infections are, in part, a consequence of transgenerational trauma

Many participants reflected on the pervasive trauma their communities were struggling with and how that made it difficult to engage with parents and the community. Some expressed

frustration with parents who did not take their children to the clinic for treatment of skin infections. After probing into the reasons behind this, some reflected that it was not for lack of caring but due to the many other complex problems families were facing.

People are trying to deal with their own trauma and trauma in the community, stuff that's happened to themselves and dealing with loss and family and whole community. [Skin infections are] not a priority, at least not at this stage... the biggest problem I have is engagement [Aboriginal Liaison Officer].

To develop and maintain trust, respect and compassion in relationships with children, families and the community, service providers need to understand and acknowledge contextual factors. These include the broader effect of colonisation, displacement from traditional lands, loss of cultural practices, government policies and practices including forced removal of children from families and institutionalisation. Untreated, transgenerational trauma results in physical, mental, emotional, spiritual and social distress for individuals and communities. Symptoms include substance abuse, violence, incarceration and fragmented kin networks (Atkinson 2013).

Depression or grief or apathy, all of those issues that impact on other people. I think that's why there's not a great lot of capacity here. This community is still a very traumatised community. There's a lot of trauma: the trans-generational stuff... [Non-Aboriginal RN].

A strong connection to kinship, country, culture and self-determination has been reported to provide protection against transgenerational trauma and its symptoms (Colquhoun and Dockery 2012; Australian Indigenous HealthInfoNet 2016). Racism persists in our institutional frameworks, and in our social fabrics; 'It's the underlying factors accompanying racism that really impact on us' [Aboriginal Health Researcher] and, although there may be degrees of awareness of this among service providers, many mainstream services are not culturally safe or appropriate for Aboriginal peoples.

Skin infections are interwoven with social determinants

Most participants identified crowded living conditions with inadequate bathing facilities, lack of towels, bed linen, soap and laundry facilities as significant barriers, 'Not all of our families own washing machines' [Aboriginal School Principal]. This makes it difficult for parents to ensure adequate personal and environmental hygiene.

You might have two or three families still in one home and they're all trying to use the same little bathroom, the same toilet, the same facilities. The general sewerage system isn't sufficient to cope with it [Non-Aboriginal RN, focus group].

With a number of people living in one house, it can get shared around very quickly either through clothes, sleeping habits, showering, using towels [Non-Aboriginal Teacher, focus group].

Many participants mentioned the environment outside the home as a possible cause of skin infections in children;

There was soggy, swampy paddocks around the mission and that's where kids are going to walk in there and play in it and whatever [Aboriginal Liaison Officer, School].

One nurse reflected on her education, which included environmental health awareness;

We learnt about sewerage and septic and plumbing ... nobody learns about it today. We were taught about keeping your houses clean and keeping your yards clean ... don't start me [on the contemporary changes to education of nurses] [ACCHS Manager].

Transport to the nearest town to purchase soap, medications and other recommended items was often unavailable, and costly when it was; 'It's the transport ... it's the overcrowding' [Aboriginal Health Service Manager].

The social determinants of health for Aboriginal people include socioeconomic status, employment, poverty, housing, education, racism, trauma, stressful and adverse life events and access to community resources (Australian Institute of Health and Welfare 2014). These factors are interwoven and cannot be considered in isolation. More effective management of bacterial skin infections in Aboriginal children will need to incorporate factors beyond housing, such as poor social, economic and environmental conditions that appear to be directly associated with skin infections (Bailie *et al.* 2012).

Families have survived but more could thrive

Despite the challenges and struggles within the communities, some participants expressed a view that families have survived, that communities were strong, resilient and proud of their Aboriginal history and culture;

As an Aboriginal woman I was raised to nurture, to care, take responsibility and to be resilient. You had to stand up and be strong and provide for your children. ... [Aboriginal RN, focus group].

I'm strong. I'll never give up. But I could use some help [Aboriginal RN, focus group].

Some participants suggested providing practical help to families, especially to mothers who were often tasked with household tasks and child rearing;

We're going to help you put all your sheets in the washing machine. I'll help you hang them out because I know you've got little kids. I asked a mother already, 'would you allow me to come in and help you move the mattresses out in the sun?' She said yes because I can't lift them on my own [Aboriginal RN, focus group].

Home is where the most support would be needed because that's where the breakdown is, at home with the parents. It's not because they don't care, it's just because they don't have the resources there [Aboriginal School Attendance Mentor, focus group].

Another described a community-based women's group who helped families with larger projects such as cleaning the whole house;

There's a women's group here that are empowered, [they are] the strong women in this community that are at everything. It's just like doing a clean-up of the mission [Aboriginal Health Education Officer, focus group].

There is a welcome shift in thinking about Aboriginal people's experiences, away from deficits to a strengths-based approach, which focuses on abilities and on improving wellbeing. The National Aboriginal and Torres Strait Islander health plan 2013–2023 states:

A strengths-based approach views situations realistically and looks for opportunities to complement and support existing strengths and capacities as opposed to a deficit-based approach, which focusses on the problems of concern [Australian Department of Health and Ageing 2013].

This approach is more likely to lead to positive outcomes when applied to complex problems (Merritt 2007), such as managing bacterial skin infections effectively.

Something can and should be done about the problem

Participants were optimistic that something can and should be done to manage bacterial skin infections in children and their families. Participants were asked what an effective and culturally appropriate and acceptable treatment approach should include, and many options were suggested (Box 2). Community members also expressed hope for the future.

It's going to take a lot of community consultation but I think if we come at it that our families are suffering, that the kids aren't getting the education, that they're in pain, that we need to do something and we need everybody to be on board to do something at the same time, I think that might be the best bet [Aboriginal Health Service Manager].

Other participants expressed the importance of maintaining culture in the new treatment model, 'Culture makes us proud ... [we] cling to [our] cultural past, it will have an incredible appeal to community' [Aboriginal Nurse Practitioner], whereas others showed their passion for working with the community to help address the problem;

Kids are the reason we want to achieve things in life. They're the reason we get out of bed every day. They're the reason we struggle to be good people, because we want them to go on and be good people and keep our culture alive. ... [Aboriginal RN, focus group].

Limitations

As only four communities participated in this research project, the findings may not be generalisable to other rural Aboriginal communities. Trauma and fracture in communities meant community members were at times not available to participate in group discussions. However, many service providers we interviewed were also parents, grandparents or carers of children with skin infections, and we believe community views were also acquired through them. Aboriginal members of the research team conducted the interviews. Owing to kinship connections, there may have been some caution in the views expressed by

Box 2. What components should a culturally appropriate treatment model include or not include?

Any model should be flexible, tailored to meet the needs of individual communities. Strong links need to be forged among school, clinic and community, where children live, learn and play.

Cultural

- Connect with country, yarnning, story telling.
- Acknowledge culture and support cultural identity.
- Underpinned by empowerment.
- Consultation and engagement.
- Allow time, build genuine and meaningful relationships, trust and respect.
- Embrace traditional remedies (leaves of a local bush, Goanna oil for prevention, Tea Tree oil, Aloe Vera, emu fat).
- Child- and family-centred, gender-specific approaches, linking with grandmothers and women and engaging and empowering fathers.
- Identify and work with local champions.

Health services

- Clear understanding of the roles of both health and schools and where a shared space may exist.
- Easy access to culturally acceptable primary health care (location, hours, outreach, home visiting, drop-in visits).
- Provide a 'cultural strategy' for providers, to help them engage with Aboriginal clients.
- Utilise Aboriginal staff and build on roles that connect with the community (Nurses, Liaison Officer, Health Education Officers, Environmental Health Officers).
- Target 4 blocks with 24 houses each using a personalised approach.
- Include the whole family.
- Be proactive, vigilant, and provide early intervention and follow up to confirm success.
- Follow a chronic disease model with a care plan.
- Health workers advocate for children who don't have a voice.
- Use peer educators.

School based

- Clear understanding of the roles of both health and schools and where a shared space may exist.
- Health services educating and informing school staff about signs and symptoms of skin infections.
- Delivering relevant health promotion programs in schools (the empowering health program Shake a Leg, for example).
- Importance of having a school nurse either through the Department of Education or through closer involvement of existing health services.
- Utilise Aboriginal staff and build on roles that connect with the community (Aboriginal Education Officer).
- Utilise existing Aboriginal and mainstream resources to educate children about hygiene practices.
- Have a washing machine at school.

Community

- All of community buy-in.
- Include education of kids, parents and the community using demonstrations, learning through observation and imitation, parent child groups, and parenting skills.
- Challenge normalcy, skin infections are not normal and should be treated.
- Use social media.
- Needs to be sustainable.

Social determinants

- Practical support for families in need (with home hygiene, laundry).
- Affordable, practical, easy, free, free soap, basic items.
- Holistic approach that considers the Aboriginal definition and concept of health.
- Transport options to obtain medications and hygiene items.
- Use existing governance structures to collaborate with health and non-health entities.

Things that don't work

- Pamphlets.
- One-off strategies or programs.
- Lectures about having a clean home.
- Judgemental attitudes towards parenting skills.

participants. However, the Aboriginal researchers understood the deeper context and issues expressed and created a culturally safe environment. We believe more meaningful findings were obtained as a result.

Conclusions

Bacterial skin infections in Aboriginal children in rural areas pose an ongoing burden on families. Because causes of skin infections and their solutions are complex, a more holistic approach that addresses social determinants and transgenerational trauma will be required. Strategies that empower children and their families to see that skin infections are not normal and that build on community strengths, culture and connection to country are more likely to succeed than current approaches, which focus on deficits. These views will be useful in developing a new, culturally appropriate and acceptable approach to managing bacterial skin infections in Aboriginal children in rural communities in NSW.

Conflicts of interest

The authors declare that no conflicts of interest exist.

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