

Empowerment is the Basis for Improving Education and Employment Outcomes for Aboriginal People in Remote Australia

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In Australia, Aboriginal and Torres Strait Islander people score poorly on national mainstream indicators of wellbeing, with the lowest outcomes recorded in remote communities. As part of a 'shared space' collaboration between remote Aboriginal communities, government and scientists, the holistic Interplay Wellbeing Framework and accompanying survey were designed bringing together Aboriginal priorities of culture, empowerment and community with government priorities of education, employment and health. Quantitative survey data were collected from a cohort of 841 Aboriginal people aged 15–34 years, from four different Aboriginal communities. Aboriginal community researchers designed and administered the survey. Structural equation modelling was used to identify the strongest interrelating pathways within the framework. Optimal pathways from education to employment were explored with the concept of empowerment playing a key role. Here, education was defined by self-reported English literacy and numeracy and empowerment was defined as identity, self-efficacy and resilience. Empowerment had a strong positive impact on education ($\beta = 0.38$, $p < .001$) and strong correlation with employment ($\beta = 0.19$, $p < .001$). Education has a strong direct effect on employment ($\beta = 0.40$, $p < .001$). This suggests that education and employment strategies that foster and build on a sense of empowerment are mostly likely to succeed, providing guidance for policy and programs.

■ **Keywords:** Aboriginal and Torres Strait Islander, remote, employment, Interplay Wellbeing Framework, education

Introduction

Wellbeing is a holistic concept defined as the quality of life for an individual or societal group. These factors can be defined differently depending on purpose; and in social, culture, environment and political contexts (Organisation for Economic Co-operation and Development [OECD], 2011). Measures of wellbeing can be subjective or objective and cover the many different aspects of life that contribute to its quality including health, education, employment, economy as well as other social and cultural factors (OECD, 2011). In Australia, Aboriginal and Torres Strait Islander people score well below national averages on mainstream indicators of wellbeing, with the lowest outcomes recorded in remote communities (Steering

Committee for the Review of Government Service Provision [SCRGSP], 2014). Consequently, government policy has focused on reducing inequities across education, employment and health outcomes with little gain recorded despite significant investment (Department of Prime Minister and Cabinet [DPMC], 2017).

Social determinants including education and employment strongly influence health outcomes, particularly in underprivileged groups such as Aboriginal and Torres

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Strait Islander people (Marmot, 2011). Reduced access to power and resources are considered to be key mediators in these relationships (Marmot, 2011). According to Marmot (2011), it is fundamentally important to create the conditions that enable people to take control of their own lives and live lives they value. Education and employment are therefore both identified determinants for health, as is the need for people to have control over their own lives – defined as empowerment – however there is less empirical evidence for the latter (Marmot, 2011).

Mainstream measures of success in education include attendance, retention rates and standardised test results. These measures have been challenged in this context as they do not take into account Aboriginal and Torres Strait Islander peoples knowledge and practices, including local languages, and community aspirations (Guenther, 2015a; Osborne & Guenther, 2013; Wilson, Guenther, & Cairney, 2016). McRae-Williams (2014) notes that conventional education to employment pathways are ‘. . . inherently challenging for Aboriginal and/or Torres Strait Islander peoples in remote communities, (and) . . . (a) spirations for belonging to family, community and country which shape economic engagement can be overlooked by a system that values different goal orientations and privileges certain ways of getting there’ (p. 1).

In our previous research, aspirations for education recorded by Aboriginal people in remote communities included: to remain strong in language and culture; to be strong in two worlds (both Western and Aboriginal) and to be strong with family (Cairney & Abbott, 2014; Guenther, 2015b; Wilson, Guenther, & Cairney, 2016).

Western constructs of ‘employment’ or ‘work’ are also different to those of remote communities with growing research highlighting the need for policy makers to consider the broader concept of working for ‘livelihoods’ beyond formal paid jobs in this context (Cairney, Abbott, & Yamaguchi, 2015; Nguyen & Cairney, 2013). For example, responsibilities to culture, family, and the land – such as passing on traditional knowledge, hunting and fishing, and mediating relationships – are valued as fundamental to wellbeing and therefore prioritised over paid employment (Altman, 2009; Biddle & Swee, 2012; Cairney & Abbott, 2014). This suggests a disconnect for both mainstream definitions of wellbeing and assumptions underlying pathways between education and employment and the realities of life for Aboriginal and/or Torres Strait Islander people in remote communities. Our research suggests the need to redefine wellbeing in remote communities and for the pathway between education and employment to be better understood (Guenther, 2015a; McRae-Williams & Guenther, 2014).

Interplay Wellbeing Framework

As a holistic representation, the Interplay Wellbeing Framework was developed through an active collaboration between remote Aboriginal communities,



FIGURE 1

(Colour online) The Interplay Wellbeing Framework.

governments and researchers as part of a ‘shared space’ approach to represent Aboriginal values in a quantifiable framework to inform policy (Abbott & Cairney, 2014; Cairney et al., 2017). This framework and an accompanying survey were developed and validated – both scientifically and culturally – as a holistic monitoring system and knowledge base to guide the improvement of wellbeing in remote communities nationally (Cairney, Abbott, & Yamaguchi, 2015, 2017). The framework combines government priorities of education, employment and health with Aboriginal-identified priorities of culture, empowerment and community, in a holistic model of wellbeing (see Figure 1; Cairney et al., 2017).

As an approach to statistical analysis that is capable of accommodating the holistic nature of wellbeing, structural equation modelling was applied to cohort survey data (described below) to both statistically validate the framework and survey (Cairney et al., 2017) and to identify key interrelationships or pathways within the framework (Cairney et al., 2017; Wilson, Quinn, Abbott, & Cairney, 2017). Initial analysis identified that empowerment correlated highly with education and employment (Cairney et al., 2017).

In this paper, we use the Interplay Wellbeing Framework and survey data to further understand this interrelationship between empowerment, education and employment and to specifically understand what drives the pathway and positive outcomes across the government priority areas of education and employment for Aboriginal people in remote Australia (Cairney, Abbott, & Yamaguchi, 2015, 2017; Cairney & Abbott,

2014; Nguyen & Cairney, 2013). Self-reported survey items define empowerment, education and employment. For example, empowerment is made up of survey items relating to resilience, identity and self-efficacy. Education is made up of items relating to English literacy and numeracy and employment is made up of items relating to paid work, voluntary work and training.

Methods

Setting

This research is a component of a broader 'Interplay Project'; that explores the interplay between culture, community, empowerment, education, employment, health and wellbeing. As part of the Cooperative Research Centre for Remote Economic Participation (CRC-REP) managed by Ninti One Ltd., the Interplay project recognises unique cultural and social factors are relevant to Aboriginal and Torres Strait Islander people living in remote Australia that are not easily represented in existing western models of government service delivery. As part of this approach, 42 Aboriginal Community Researchers (ACRs) were recruited, trained and employed to contribute to research design and data collection. The shared space model is both ground-up (or 'grass roots') and top-down, ensuring strong links between science, community development and policy impact (Cairney & Abbott, 2014). By bridging community and government priorities, the Interplay project is building an evidence base to inform policy and practice towards improved wellbeing in remote communities (Cairney & Abbott, 2014).

During project development, an extensive national 'grass-roots' consultation process was conducted with remote Aboriginal communities nationally over 3 years from 2011 to 2013, with 242 people engaged through 17 workshops and a series of meetings, interviews and community visits (Abbott & Cairney, 2014). This widespread community consultation informed the design of an Interplay Wellbeing Framework and data collection tools (Abbott & Cairney, 2014). Importantly, a thematic analysis of these qualitative data identified that – despite significant cultural diversity – three core priorities were consistent for Aboriginal people from remote communities nationally. These were: culture, empowerment and community. Project development and methodology is described in detail elsewhere (Cairney, Abbott, & Yamaguchi, 2015, 2017). Validation of the framework and survey is reported separately, as is qualitative data collected through focus groups (Cairney et al., 2017; McRae-Williams et al., 2018).

Survey

Based on both the community and government priorities, a survey was designed to collect quantitative data, part of which is reported here. The survey was designed to collect locally relevant, contextual, quantitative information on wellbeing and the factors that may potentially

influence wellbeing outcomes in remote communities (Cairney, Abbott, & Yamaguchi, 2015). Each question was extensively analysed to ensure that it held true in crosscultural settings and when translated to local languages (Cairney, Abbott, & Yamaguchi, 2015). The survey was administered by ACRs using iPads loaded with the iSurvey software. Each individual survey took approximately one hour to complete.

Participants

From 2014 to 2015, surveys were collected from 917 Aboriginal and Torres Strait Islander people aged 15–34 years. A total of 73 participants were excluded based on their age >34 years, and a further 3 for other selection criteria. The final cohort comprised 841 participants (mean age = 25.2 years, SD 5.3; 352 Males, 489 Females). Participants were classified as either remote (46%) or very remote (54%) based on community location (Australian Institute of Health and Welfare (AIHW), 2004). The ACRs selected participants based on a number of sampling strategies, including age, Aboriginality, availability, door knocking and random sampling. Great effort was taken to ensure that all kinship and language groups were represented from each community. This age range was selected as that closest to when individuals undergo the life course transition from education through to employment; these ensured meaningful outcomes were delivered within the project's 6-year life-cycle (Cairney, Abbott, & Yamaguchi, 2015).

Community selection was based on a combination of sampling methods, established relationships with partner organisations within communities and community self-selection (Cairney, Abbott, & Yamaguchi, 2015). Initially, eight community groups approached the research team and expressed interest to be involved in the study (Cairney, Abbott, & Yamaguchi, 2015). This was later consolidated to four communities that participated in the research (Cairney, Abbott, & Yamaguchi, 2015). This process of self-selection established a strong sense of ownership and empowerment for the community groups, who therefore initiated the research in their communities and were then heavily involved in its development (Cairney, Abbott, & Yamaguchi, 2015). Final participating communities represented diversity across geography, culture, language, population size and characteristics of infrastructure and service delivery (see Table 1).

Ethics

Ethical clearances were obtained from the Human Research Ethics Committee (HREC) of the Northern Territory Department of Health and Menzies School of Health Research, and from the Western Australian Aboriginal Health Ethics Committee. Additional approvals and support were received from local health and education boards, government data-linkage services, land councils

TABLE 1

Community Characteristics

Community	1	2	3	4
Population (N)	2000	850	1150	12,000
Population 15–24	450	230	80	1440
Population 24–34	330	130	50	1920
Percentage of Aboriginal and Torres Strait Islander people	94	76	50	28
Number of participants surveyed	141	104	51	545
Remoteness (n)	Very remote	Very remote	Very remote	Remote
Distance from nearest capital	500km from Darwin	650km from Darwin	1000km Perth	300km from Darwin
Primary language	Yolngu	Yolngu	Martu/English	English
Region	Island, East Arnhem, NT	East Arnhem, NT	Midwest, WA	Katherine Region, NT

Data based on Australian Bureau of Statistics (ABS) 2011, 2016.

Based on Indigenous Location (ILO) by Indigenous Status (INGP) and Age (AGEP), 2011; Source: ABS unpublished data; N = population count; n = minimum sample sizes for each cohort.

TABLE 2

Domains and Survey Items Taken from the Interplay Survey Tool

Domain	Survey item
Empowerment	<i>How much is this true for you?</i> Make changes in your life when you need to (self-efficacy) Feel strong about who you are (identity) Move on from bad experiences (resilience)
Education	<i>Can you do the following?</i> Speak english Read english Write english Understand numbers Add and subtract Fill out forms
Employment	<i>How much time do you spend on these?</i> Paid work Voluntary work Study/education

Each domain is made up of its corresponding survey items answered by participants on a 5-point Likert Scale.

and local partner organisations. Written informed consent was given by all participants.

Measures

Survey items that loaded together statistically form a 'domain'. The three domains that combined to provide a 'best fit' interrelationship, based on structural equation modelling approach outlined below, included empowerment, education and employment. Table 2 shows the domains and their corresponding survey items. Survey items were modelled with a 5-point Likert scale from 0 (Not at all), 2 (Sometimes), to 4 (Lots) (Cairney, Abbott, & Yamaguchi, 2015). Higher scores indicate higher levels of the domain.

Statistical Analysis

Data analysis was conducted using the statistics package SPSS and Analysis of Moment Structures (AMOS) version 23. Initially, exploratory factor analysis (EFA) using maximum likelihood extraction with promax rotation was conducted. Survey items were allocated to domains according to their pattern matrix factor loadings. Items that did not load well or that decreased reliability beyond an unacceptable level were deleted. Bivariate Pearson's correlations were calculated between each pair of domains and a Structural Equation Model (SEM) was created to examine hypothesised relationships between these domains. The SEM was validated by checking a variety of Model Fit Indices, including chi-square, CMIN, GFI, PCFI, PCLOSE, SRMA and RMSEA. The lower and upper Confidence Intervals (CI) reported are 95% and a *p*-value (two-tailed) less than 0.05 is deemed to be statistically significant. Covariances between survey items loading on the same domains were used to improve model fit, and residuals were examined via standardised residual covariances. The final model included a consistent mediated effect. Gender, Age, Language and Remoteness were all controlled as well as tested as Confounding Factors, when examining the final model.

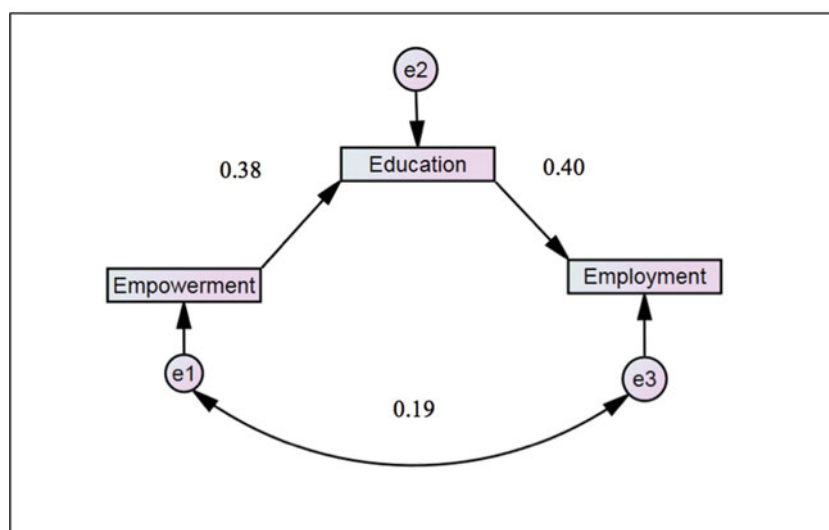
Results

Descriptive Frequencies

Table 3 presents the means, standard deviations, and correlations of the study domains. Univariate skewness values ranged from -1.21 to 0.64 and univariate kurtosis values ranged from -0.87 to 0.85, confirming that the domains show reasonable spread (Kline, 2011).

Bivariate Relationships

Bivariate Pearson correlations were calculated with each domain to examine the association between them. All the

**FIGURE 2**

(Colour online) SEM showing bivariate correlations. $\chi^2/df = 2.47$, CFI = 0.99, RMSEA = 0.04, Pclose = 0.89. $P < .001$ e = error.

TABLE 3

Descriptive Frequencies ($N = 841$)

Domain	Mean	SD	Kurt	Skew
1. Empowerment	2.29	0.58	0.85	-1.21
2. Education	2.55	0.82	-0.28	-0.87
3. Employment	1.37	1.01	-0.83	0.64

SD: Standard Deviations, Kurt: Kurtosis, Skew: Skewness.

correlations were statically significant ($p < .001$). The results from the SEM showed that empowerment and employment were covaried ($\beta = 0.19$, 95% CI 0.11, 0.27) and empowerment has a direct effect on education ($\beta = 0.38$, 95% CI 0.28, 0.46). The direct effect between education and employment ($\beta = 0.40$, 95% CI 0.33, 0.47) was also highly significant. The indirect effect from empowerment, via education, to employment was highly significant ($\beta = 0.15$ 95% CI 0.11, 0.20).

Figure 2 shows the structural equation model presenting the strongest statistical pathways. The model had good fit statistics, $\chi^2/df = 2.47$, CFI = 0.99 and RMSEA = 0.04, Pclose = 0.89. The model showed 'consistent mediation' in that the mediation effects on the dependent domain and independent domain had the same signs, and all path were significant (MacKinnon, Krull, & Lockwood, 2000; Tzelgov & Henik, 1991).

Robustness

In order to examine the robustness of our results we checked for exposure-mediator and mediator-outcome model for confounders, using: age, gender, remoteness and number of languages spoken. No evidence of confounding by other variables was found.

Summary

In summary, the results showed that the domain empowerment predicted employment via the mediator education, and education had a strong direct effect on employment. The direct effect and indirect effects were approximately the same.

Discussion

Our analysis identifies empowerment as a fundamental building block to achieving optimal outcomes for education and employment, based on self-reporting. Empowerment was defined and measured based on survey items relating to identity, resilience and self-efficacy. Self-reported levels of English literacy were used as a proxy for education outcomes. Empowerment has a strong direct impact on education and correlates strongly with employment, with an additional mediated effect whereby building empowerment influences employment indirectly through the pathway of improving education. Direct relationships between education and employment that are commonly observed in other populations were confirmed here for this population (Dockery, 2013; Guenther & Bat, 2013; Purdie & Buckley, 2010). Our analysis suggests that successful pathways between education and employment are contingent upon their capacity to build from empowerment. These findings suggest that the ability of policy and practice in education and employment to improve outcomes depends on their capacity to genuinely empower people. That is the more programs empower people the more likely they are to succeed.

In Australia, the mainstream economic assumption is that individuals undertake postcompulsory education for reasons related to income and wealth acquisition (McRae-Williams, 2014). Aboriginal and Torres Strait Islander

people with strong connections to culture and community do not necessarily fit this model (Guenther, Osborne, & Bat, 2013). Further, Aboriginal and Torres Strait Islander people undertake significant amounts of vital, relevant and time-consuming employment in unpaid capacities – usually as part of cultural or family occupations (McRae-Williams, 2008). Although this type of employment is difficult to measure in government statistics, many Aboriginal and Torres Strait Islander people see unpaid voluntary cultural and community work as their ‘occupation’ rather than seeing themselves as ‘unemployed’ (Gelade & Stehlik, 2004). Subsequently in remote Australia in recent years, employment of Aboriginal people has declined while employment of non-Aboriginal people has increased (Guenther & McRae-Williams, 2016). Any available employment in remote Australia is generally taken by non-Aboriginal and Torres Strait Islanders (Gelade & Stehlik, 2004). Our research indicates that greater empowerment of individuals would be conducive to a reversal of this trend.

Building empowerment in Aboriginal and Torres Strait Islander communities has been previously shown to increase wellness and wellbeing outcomes (Auger, 2016; Lucero, 2014; Wexler, 2014; Tsey et al., 2007; Whiteside, Tsey, & Earles, 2011). In Australia a family empowerment program has shown an increase in wellbeing outcomes for Aboriginal Australians through building empowerment based on cultural and spiritual beliefs (Tsey et al., 2007; Whiteside, Tsey, & Earles, 2011). Empowerment constructs have been shown to help individuals and groups achieve positive growth and effectively address the social and psychological impacts of historical oppression, marginalisation and disadvantage (Haswell et al., 2010). Other researchers suggest that cultural alignment to western philosophical positions of employment will enable (empower) people to do well at education and employment (Guenther & McRae-Williams, 2014; McRae-Williams, 2014; McRae-Williams & Guenther, 2014; McRae-Williams, Guenther, Jacobsen, & Judith, 2016). Our research indicated that the connection between education and employment was actually moderated by an individual’s sense of empowerment. That is, our research confirmed the importance of an individual’s sense of empowerment as the key moderator in the relationship between education and employment.

Recognising Aboriginal values and ways of being and building on and amplifying strengths, capacities and identity, have shown to be important building blocks of learning and engagement (McRae-Williams, 2014, p.12). However, governments struggle to reconcile the values, ways of being and knowings associated with Aboriginal cultures into related policies and programs. This misunderstanding becomes a disempowering process that suppresses local Aboriginal cultures and consequently local engagement in employment (McRae-Williams, 2014). This inability or unwillingness of governments and service providers to

genuinely collaborate and engage with communities in supporting local culture and needs is a major contributor to the failure of many programs (Guenther & McRae-Williams, 2015). Engagement with local people and local cultures provides the necessary conditions to empower individuals to achieve success in education and subsequent pathways to employment (McRae-Williams et al., 2018). Our research reaffirmed the importance of collaboration and engagement in supporting empowerment towards improving education and employment in Aboriginal and Torres Strait Islander communities.

Quality education is more than just literacy and numeracy – in this context, it is vital that it include community-based approaches that empower parents and communities (Guenther, Disbray, & Osborne, 2015, 2016). So long as policy makers see education and training primarily as pathways to employment, considerable tensions will prevail when set against Aboriginal and Torres Strait Islander forms of development, deeply held spiritual and cultural beliefs, and peer and kin affiliations (Interplay Wellbeing Framework, 2016; Nguyen & Cairney, 2013; Wilson, Guenther, & Cairney, 2016). Education and training systems that accommodate cultural beliefs and values provide more positive outcomes for Indigenous people, as recognised in the benefits of Aboriginal land management employment (e.g., Ranger) programs (Davies, Maru, Hueneme, Grey-Gardner, & Chings, 2010). Our research provides empirical evidence that the connection between education and employment was actually moderated by an individual’s sense of empowerment.

In order for those designing and promoting Aboriginal and Torres Strait Islander strategic policies to engage with the specific needs of remote communities, the concept of employment needs to be redefined to take into account unpaid voluntary cultural, family and community-based activities (Altman, 2009). Policy also needs to be developed within the context of collaborative processes, which engages with and draws from community leadership and ownership, thus incorporating Aboriginal and Torres Strait Islander identities, cultures, knowledge and values (Miller, 2005, p. 5). This suggests that genuine engagement with, and empowerment of, local communities and cultures are the critical foundations in the success of employment and education programs in remote communities.

Conclusion

By considering a holistic concept of wellbeing as represented by the Interplay Wellbeing Framework, this analysis has identified empowerment – defined by personal identity, resilience and self-efficacy – as the fundamental basis to foster the pathways and achieve positive outcomes in education and employment. This suggests that education and employment strategies that foster and build on a sense of individual empowerment are most likely to succeed, providing guidance for policy and programs.

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John Guenther is the Research Leader Education and Training, with Batchelor Institute of Indigenous Tertiary Education, based in Darwin, Northern Territory. Over the last 10 years John has been conducted research and evaluation projects, which have focused on remote contexts, particularly in the Northern Territory of Australia. A recurring theme in all his work is the importance of learning, whether it be for adults, young people or children. He is also interested in education systems and their impact on learning. In recent work on remote education systems, a focus has been on the importance of Aboriginal and Torres Strait Islander knowledge systems and their accompanying epistemologies, ontologies, axiologies and cosmologies. Understanding the interface between cultures in the context of schooling in remote communities has also been a key concern.

Tammy Abbott is of the Western Arrernte and Luritja/Pintupi people, was educated in Alice Springs and Victoria. Tammy came to Ninti from a career with the Australian Government Department of Human Services in the Northern Territory. She is currently working as the Senior Research Officer for Ninti One's Interplay project, which aims to strengthen and grow community-based research activity and employment of Aboriginal Community Researchers.

Stephen J. Quinn joined Swinburne University of Technology in 2016. He completed his Ph.D. in 2002 (UTAS) and worked for the Menzies Research Institute Tasmania as a consultant biostatistician from 2004 to 2010, in the area of population health and noncommunicable diseases. In 2010, he moved to Flinders University to take up a position as a Senior Consultant Biostatistician, where most of his work involved Phase 3 clinical trials in biomedical research. So far he has coauthored on around 100 peer reviewed publications, and been successful in attracting funds on 15 NHMRC, ARC and partnership grants as well as many more minor grants. Steve is experienced in all forms of multilevel mixed modelling and structural equation modelling. He also has his own statistical methodological research stream in assessing goodness-of-fit in binary regression models.

Eva McRae-Williams has worked in the Social Anthropology and Community Livelihood research space for nearly 10 years, with most of this work situated in the Northern Territory. As Principal Researcher and Lecturer, she has extensive experience as an educator, researcher and consultant.

Sheree Cairney has worked as a Neuroscientist in remote Aboriginal communities for 17 years. Her research has shed light on the transformation of brain and behaviour that happens-with petrol sniffing, alcohol and other drugs-and led to ground-breaking clinical evidence the brain can repair itself if substance abuse stops early enough. She now leads a national longitudinal study on wellbeing in remote Aboriginal communities, 'The Interplay Project'. She is an Associate Professor at the Centre for Remote Health, Flinders University in Alice Springs, and a Principle Research Leader at Ninti One Ltd.