

Community co-selection of measures to evaluate the health and wellbeing impact of Aboriginal and Torres Strait Islander community running groups

Abstract

Issue addressed: Physical activity participation can improve the physical health and social and emotional wellbeing of Aboriginal and Torres Strait Islander peoples. The evaluation of physical activity programmes can elicit a clearer understanding of where these impacts occur and to what extent. We describe applying a collaborative approach to the selection of a set of measures that can be used to examine health and wellbeing impacts of Indigenous community running groups.

Methods: Physical activity, health and wellbeing measurement tools previously used with Aboriginal and Torres Strait Islander peoples were collated. Participants in the collaborative process were nine female running group members aged 30+ years from a regional New South Wales (NSW) town. The Indigenous research method, Yarning, explored views of participating in the group on health and wellbeing and how these could be measured using those collated measurement tools.

Results: Runners described participating for holistic physical, mental and social reasons and stated the importance of the group participating together and providing social support to each other. There was broad support for the identified physical activity, lifestyle, physical health, and social and emotional wellbeing measures, with social networks and sports injuries identified as additionally relevant.

Conclusions: Co-selecting measures to evaluate a physical activity programme for Aboriginal and Torres Strait Islander participants can better inform the development of relevant future healthy lifestyle programme evaluation, revealing factors that may be missed as relevant by researchers.

So what?: This process presents an example of determining evaluation measures with Aboriginal and Torres Strait Islander participants that could be applied more broadly to evaluation design.

1 | INTRODUCTION

The importance of physical activity for health has been identified as a priority in previous research with Aboriginal and Torres Strait Islander people.¹ Previous community studies demonstrate how physical activity improves Aboriginal and Torres Strait Islander physical health and social and emotional wellbeing.²⁻⁴ Many community programmes for Aboriginal and Torres Strait Islander peoples aim to increase physical activity for health and social benefits.⁵ Yet the evaluation of physical activity and health promotion programmes could be improved through greater community involvement, to better understand the health and wellbeing effects from an Aboriginal and Torres Strait Islander perspective.⁶

Aboriginal and Torres Strait Islander concepts relevant to physical activity, health and wellbeing may not be included in existing instruments, indicating the need to develop meaningful, culturally relevant measurement tools to measure programme impact.⁷⁻⁸ Participatory action research processes are essential for all aspects of research involving Aboriginal and Torres Strait Islander peoples, but are rarely used in the development of programme evaluation measures.^{7,9} It is optimal for such processes to use Indigenous research methods like Yarning, a culturally grounded research method which is conducive to Aboriginal ways of doing things that engages conversation to share stories and exchange knowledge.¹⁰

The Indigenous Marathon Programme involves annual squads of Indigenous people aged 18-30 years are selected to train to run a marathon while living in their communities; they are also encouraged to establish, coordinate and coach local community-based running groups.¹¹ These groups are targeted for Aboriginal and

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](https://creativecommons.org/licenses/by-nc-nd/4.0/) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2022 The Authors. *Health Promotion Journal of Australia* published by John Wiley & Sons Australia, Ltd on behalf of Australian Health Promotion Association

Torres Strait Islander adults and children although non-Indigenous participants can join. Group participants typically train together three times a week and beginner participants can take part in a 12-week programme to increase their running and undertake a 5-km continuous run. This level of physical activity and programme duration has previously demonstrated chronic disease risk factor improvement among Aboriginal and Torres Strait Islander males and females.³⁻⁴

A retrospective study examined the perceptions of the impact of these programmes on the overall health and wellbeing of Aboriginal and Torres Strait Islander peoples residing on Thursday Island in the Torres Strait, Australia.¹² Perceived increases in physical activity and broader health and wellbeing improvements among participants were described and potential future physical activity, health and wellbeing measures were also tested with participants to gauge their relevance. This perceived impact could be definitively tested in a future study with more methodologically rigorous methods, chosen as part of a collaborative approach with Aboriginal and Torres Strait Islander people. This brief report describes the process of collaboratively selecting evaluation methods to examine the health and wellbeing impacts of community running programmes and to provide face and content validity of proposed measurement tools.

2 | METHODS

Firstly, the researchers collated physical activity, health and wellbeing measures sourced from scientific and grey literature previously used in research projects with Aboriginal and Torres Strait Islander peoples by searching the comprehensive Australian Indigenous HealthInfoNet Bibliography for the health topic 'physical activity'.⁵

Subsequently, in December 2019, purposeful recruitment for the Yarning circle took place during a regular group training session of one of the local community-based running groups, with the assistance of the Aboriginal group co-ordinator. The researchers had commenced a partnership with the group after meeting at a fun run event in September 2019. A week ahead of formal recruitment, the group co-ordinator explained to group participants that they would be invited to take part in the research. Two researchers (RM & AW; one of whom is Aboriginal) were introduced to the group, and an explanation of the project was provided, and participants were invited to take part in the Yarning circle, held immediately after the group training session. All group members agreed to participate. The Yarning circle explored participant views of the effects of the group on health and wellbeing and how these could be measured and provided space to discuss examples of evaluation tools, both direct and self-report, for their relevance in evaluating Aboriginal and Torres Strait Islander health and wellbeing.

2.1 | Data analysis and interpretation

This initial Yarning group was audio-recorded and transcribed verbatim by a professional transcription service. Transcripts were initially reviewed by Aboriginal and non-Indigenous researchers. A grounded theory approach¹³ was used to identify key themes, with supporting quotes. Subsequently, researchers developed a draft suite of evaluation measures to present back to the participant Yarning circle group. In March 2020, the two researchers conducted a follow-up Yarning circle with the same participants to present the initial Yarning transcripts for 'member checking'¹³ and to seek their further views and feedback to finalise the measures and determine their suitability.

3 | RESULTS

Existing relevant measurement tools were categorised into three domains: 1. social and emotional wellbeing, 2. physical activity and other lifestyle behaviours, 3. physical health, including clinical measures.

The Yarning circle participants were nine female members of the community running group (five self-identified as Aboriginal and/or Torres Strait Islander) aged 30 years and over (age-range 30-68 years). Runners described how they participate for holistic physical, mental and social reasons and explained the importance of the group participating together and providing social support to each other. There was broad support for the proposed physical activity, healthy lifestyle, physical health, and social and emotional wellbeing measures presented by the researchers, with social networks and sports injuries identified as additionally relevant for the evaluation. The participants also described their use of objective health data (such as via health apps) to monitor change over time. The researchers presented potential social networks quantitative tools at the follow-up Yarning circle¹⁴ that were considered suitable by participants, with sports injuries and other challenges to be captured in qualitative research. **Figure 1** depicts the four main themes from the initial Yarning circle, with most example quotes from Aboriginal and Torres Strait Islander participants.

The collaboratively selected evaluation measures that were considered suitable by participants are presented in **Table 1**. Measures include self-report quantitative questionnaires to measure social and emotional wellbeing, physical activity and other lifestyle behaviours, along with anthropometric and point-of-care blood tests measures to evaluate physical health variables. The measures include social networks questions as a fourth domain, as well as sociodemographic data on sex, age, education. Yarning circles will be used to examine the barriers, enablers, benefits, challenges and other participation experiences in the future evaluation.

FIGURE 1 Yarning circle themes

Theme 1: Runners participate for broad health and wellbeing reasons related to physical***health***

“Showing my grandchildren, my daughter and my family that this is the way to go. If you want to keep fit and healthy, keep exercising. I love running, so that’s my exercise” (Aboriginal and Torres Strait Islander participant, 60+ years)

“I feel stronger. My clothes that don’t really fit are fitting, so that’s an encouragement for me to keep going.” (Aboriginal and Torres Strait Islander participant, 40 - 50 years)

“That would be interesting; I wouldn’t mind doing something like that, just to see how – it’s like a fitness test, isn’t it?” (Aboriginal and Torres Strait Islander participant, 40 - 50 years)

Theme 2: Importance of the group for participating together and providing social support

“I’ve got into the group and I loved it. I just stayed with it. I just kept running and running. I said, “No, I’m not going to give up. I’m going to go until ...Until I can’t go anymore.” (Aboriginal and Torres Strait Islander participant, 60+ years)

“I probably stayed too because my husband was sick and it was like my stress relief and I felt it was a good support group as well.” (Aboriginal and Torres Strait Islander participant, 40 - 50 years)

Theme 3: Runners participate for reasons related to social and emotional health

“It’s just helped me. I’ve got three kids as well and it keeps me going as well, because if I don’t run, it all builds up and I’ll explode. So, it’s better to go for a run – even my husband used to say, “You need to go for a run,” because he could tell” (Aboriginal and Torres Strait Islander participant, 40 - 50 years)

“The reason I exercise is for mental health, which is why it interests me. When I’m in a rut, my anxiety is really high... So, I don’t know how you can do that, maybe through an app or ... maybe questionnaires, like how you’ve been feeling this week” (30 – 40 years, non-Indigenous)

Theme 4: Importance of measuring injury and social interactions

“Injuries, yes... I’ve got a knee injury. But we look after it; we make sure we get some physio. I get a massage.” (Aboriginal and Torres Strait Islander participant, 60+ years)

“I measure my own mental health in my interactions with other people and none of those questions have anything to do with your interactions with other people. I find it interesting” (30 – 40 years, non-Indigenous)

TABLE 1 Measures to evaluate Indigenous community running groups, including examples of prior use with Aboriginal and Torres Strait Islander people

What is being measured	Tool/method	Age group	Type	Prior use with Aboriginal and Torres Strait Islander populations
Holistic impact	Yarning ¹⁰	Adults (all)	Qualitative	Yes ¹⁰
DOMAIN 1: Social and emotional wellbeing				
Mental wellbeing	WHO wellbeing index ¹⁵	Adults (all)	Self-report	Yes ¹²
Quality of life	Self-rated health (SF-1) ¹⁶			Yes ^{12,17}
DOMAIN 2: Physical activity and other lifestyle behaviours				
Cardio-respiratory fitness	Multi-stage run (beep test) ¹⁸	Adults (all)	Objective	Yes ¹²
Physical activity	Active Australia Survey (AAS) ¹⁹		Interviewer-administered and self-report	Yes ^{12,20}
Fruit, vegetable, takeaway food intake	NSW Health survey: nutrition ²¹		Self-report	Yes ^{12,21}
Current smoking	NSW Health survey: smoking ²¹			
Alcohol consumption	NSW Health survey: alcohol ²¹			
DOMAIN 3: Physical health				
Body mass index (BMI)	Height & weight	Adults (all)	Objective biomarkers	Yes ^{3-4,22}
Central obesity	Waist circumference			
Blood pressure	Systolic and diastolic			
Cholesterol fractions	Point-of-care blood test			
Glycated haemoglobin A1c (HbA1c)				
DOMAIN 4: Social connections				
Social Support	Abbreviated Duke Social Support Scale	Older adults (45 years+)	Self-report	Yes 45 & Up sub-study ²⁰
Social networks	Lubben social network scale ¹⁴			Not known

4 | DISCUSSION AND CONCLUSION

We have described the process of collaboratively selecting the evaluation measures for a physical activity programme for Aboriginal and Torres Strait Islander people with an existing participant group, through understanding their perceived benefits of participating and how these benefits can be measured. The group described participating for physical, mental and social reasons which is consistent with holistic Indigenous worldviews of wellbeing,⁸ and previous evidence of the benefits of physical activity participation for Aboriginal and Torres Strait Islander peoples.^{2,23} Participants described the importance of group participation and providing social support to each other, consistent with evidence for Aboriginal and Torres Strait Islander group-based physical activity programmes in improving health and quality of life,²³ and association between social support and physical activity.²⁰ While the group included non-Indigenous members, most of the supporting quotes from Aboriginal and Torres Strait Islander participants, to privilege their voices.

Using participatory action research processes⁹ and Indigenous research methods,¹⁰ we identified meaningful measures to evaluate the 12-week pre-post impact of the Indigenous community running groups. There was support for the proposed physical activity and lifestyle behaviours, physical health and social and emotional wellbeing measures in the Yarning circle. While each resulting measure has been previously used with Aboriginal and Torres Strait Islander research participants in Australia or Indigenous peoples internationally, there is sparsity of tools that have been specifically developed or selected with Aboriginal and Torres Strait Islander peoples. Previous use alone does not necessarily infer suitability, so direct, local community input, giving both an Aboriginal and Torres Strait Islander worldview and local cultural relevance, is essential. We were also able to incorporate participant suggestions to include the measurement of injuries and social interaction through additional measures,^{14,20} as well as the importance of proposed inclusion of qualitative yarning methods to capture additional participation context.

This suite of measures will be combined for the first time in the impact evaluation, planned for during 2022, with 20 Aboriginal and Torres Strait Islander adult running group participants. The groups will be determined in collaboration with local communities. We recommend further community stakeholder engagement to determine the measures' local relevance and suitability, noting the present community group was small, female only and included non-Indigenous participants. This recommendation applies both to the planned impact evaluation as well as for other culturally specific Aboriginal and Torres Strait Islander research. Future yarning with males is recommended prior to evaluation with female and male participants. Data will be collected by trained Aboriginal and Torres Strait Islander community research assistants, building community capacity, as recommended for self-determination and community control of research.²⁴ The 12-week pre-post impact evaluation will provide evidence to inform a potential nationwide evaluation, which may be used to guide future programme planning and implementation of both the existing Indigenous community running groups

and other healthy lifestyle programmes that engage Aboriginal and Torres Strait Islander peoples.⁵

This Brief Report provides a model of participatory research to determine evaluation measures with Aboriginal and Torres Strait Islander participants that could be applied more broadly.¹⁰ Such an approach has been used to develop mixed methods and experimental design methodologies that have been described as optimal for Aboriginal and Torres Strait Islander health programme evaluation.²⁵ While research with, and for, Aboriginal and Torres Strait Islander peoples increasingly uses collaborative methods to develop strategies and programmes,^{2,5} there are fewer examples of using participatory processes to determine research or evaluation measures.⁷ Our approach contributes to the limited evidence base of determining community evaluation measures in collaboration with Aboriginal and Torres Strait Islander peoples.

KEYWORDS

Aboriginal and Torres Strait Islanders, chronic disease, community based intervention, physical activity, participatory action research

ACKNOWLEDGEMENTS

The authors would like to thank and acknowledge the Queanbeyan Deadly Runners group participants. Open access publishing facilitated by University of New South Wales, as part of the Wiley - University of New South Wales agreement via the Council of Australian University Librarians.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ETHICS

Ethical approval was received from the Aboriginal Health and Medical Research Council (AH&MRC) Ethics Committee (1569/19) and noted by the University of New South Wales Human Research Ethics Committee.

FUNDING INFORMATION

This research was supported by funding from the UNSW Ageing Futures Institute.

Rona Macniven^{1,2} 
 Kim Delbaere^{1,2,3} 
 Ebony Lewis^{1,3,4} 
 Kylie Radford^{2,3,4} 
 Karla Canuto^{5,6} 
 Michelle Dickson⁷ 
 Justin Richards⁸ 
 Josephine Gwynn^{9,10} 
 Adrienne Withall^{1,2} 

¹School of Population Health, UNSW Faculty of Medicine and Health, University of New South Wales, Kensington, New South Wales, Australia

²Ageing Futures Institute, University of New South Wales, Kensington, New South Wales, Australia

- ³Neuroscience Research Australia, Randwick, New South Wales, Australia
- ⁴School of Psychology, Faculty of Science, University of New South Wales, Sydney, New South Wales, Australia
- ⁵Rural and Remote Health, College of Medicine and Public Health, Flinders University, Darwin, Northern Territory, Australia
- ⁶Aboriginal Health Equity, South Australia Health and Medical Research Institute, Adelaide, South Australia, Australia
- ⁷Sydney School of Public Health, Faculty of Medicine and Health, The University of Sydney, Sydney, New South Wales, Australia
- ⁸Faculty of Health, Te Herenga Waka - Victoria University Wellington, Wellington, New Zealand
- ⁹Sydney School of Health Sciences, Faculty of Medicine and Health, The University of Sydney, Sydney, New South Wales, Australia
- ¹⁰Poche Centre for Indigenous Health, Faculty of Medicine and Health, The University of Sydney, Sydney, New South Wales, Australia

Correspondence

Rona Macniven, School of Population Health, UNSW Faculty of Medicine and Health, University of New South Wales, Kensington, NSW, Australia.
Email: r.macniven@unsw.edu.au

ORCID

Rona Macniven  <https://orcid.org/0000-0002-2967-7977>

Kim Delbaere  <https://orcid.org/0000-0002-5655-0234>

Ebony Lewis  <https://orcid.org/0000-0002-9260-3727>

Kylie Radford  <https://orcid.org/0000-0001-8095-5314>

Karla Canuto  <https://orcid.org/0000-0001-6184-8249>

Michelle Dickson  <https://orcid.org/0000-0003-0713-7803>

Justin Richards  <https://orcid.org/0000-0003-4584-8614>

Josephine Gwynn  <https://orcid.org/0000-0001-8760-0786>

Adrienne Withall  <https://orcid.org/0000-0001-7079-465X>

REFERENCES

- Thompson SC, Haynes E, Woods JA. Improving cardiovascular outcomes among Aboriginal Australians: lessons from research for primary care. *SAGE Open Med*. 2016;4:2050312116681224.
- Macniven R, Canuto KW, Wilson R, Bauman A, Evans J. The impact of physical activity and sport on social outcomes among Aboriginal and Torres Strait Islander people: A systematic scoping review. *Journal of Science and Medicine in Sport*. 2019.
- Mendham AE, Duffield R, Marino F, Coutts AJ. A 12-week sports-based exercise programme for inactive Indigenous Australian men improved clinical risk factors associated with type 2 diabetes mellitus. *J Sci Med Sport*. 2015;18(4):438–443.
- Canuto K, Cargo M, Li M, D'Onise K, Esterman A, McDermott R. Pragmatic randomised trial of a 12-week exercise and nutrition program for Aboriginal and Torres Strait Islander women: clinical results immediate post and 3 months follow-up. *BMC Public Health*. 2012;12:933.
- Macniven R, Elwell M, Ride K, Bauman A, Richards J. A snapshot of physical activity programs targeting Aboriginal and Torres Strait Islander people in Australia. *Health Prom J Austr*. 2017;28(3):185–206.
- Canuto KJ, Aromataris E, Burgess T, Davy C, McKivett A, Schwartzkopf K. A scoping review of Aboriginal and Torres Strait Islander health promotion programs focused on modifying chronic disease risk factors. *Health Prom J Austr*. 2021;32(1):46–74. <https://doi.org/10.1002/hpja.307>
- Esgin T, Hersh D, Rowley K, Gilroy J, Newton RU. Indigenous research methodologies: decolonizing the Australian sports sciences. *Health Prom Int*. 2018;34(6):1231–1240.
- Butler TL, Anderson K, Garvey G, Cunningham J, Ratcliffe J, Tong A. Aboriginal and Torres Strait Islander people's domains of wellbeing: a comprehensive literature review. *Soc Sci Med*. 2019;233:138–157.
- Dreise TME. *Waving Knowledges Knowledge exchange, co-design and community-based participatory research and evaluation in Aboriginal communities*. 2018. Available from: https://www.aboriginalaffairs.nsw.gov.au/media/website_pages/new-knowledge/completed-research-and-evaluation/Weaving-Knowledges-codesign-report-FINAL.pdf
- Bessarab D, Ng'andu B. Yarning about yarning as a legitimate method in indigenous research. *Int J Critic Indigenous Studies*. 2018;3(1):37–50. <https://doi.org/10.5204/ijcis.v3i1.57>
- Macniven R, de Castella R, Seriat EB, Hunt N, Bauman AE. Bright spots, physical activity investments that work: indigenous Marathon Foundation. *Br J Sports Med*. 2018;52(20):1302–1303.
- Macniven R, Plater S, Canuto K, Dickson M, Gwynn J, Bauman A et al. The “ripple effect”: health and community perceptions of the Indigenous Marathon Program on Thursday Island in the Torres Strait, Australia. *Health Prom J Austr*. 2018;29(3):304–313.
- Lincoln YS, & Guba EG. *Naturalistic inquiry*. Sage Publications; 1985.
- Lubben J, Blozik E, Gillmann G, Iliffe S, von Renteln Kruse W, Beck John C, et al. Performance of an abbreviated version of the Lubben social network scale among three European community-dwelling older adult populations. *Gerontologist*. 2006;46(4):503–513.
- Topp CW, Østergaard SD, Søndergaard S, Bech P. The WHO-5 well-being index: a systematic review of the literature. *Psychother Psychosom*. 2015;84(3):167–176.
- Ware JE, Gandek B. Overview of the SF-36 health survey and the international quality of life assessment (IQOLA) project. *J Clin Epidemiol*. 1998;51(11):903–912.
- Lavrencic LM, Mack HA, Daylight G, Wall S, Anderson M, Hoskins S, et al. Staying in touch with the community: understanding self-reported health and research priorities in older Aboriginal Australians. *Int Psychogeriatr*. 2020;32(11):1303–1315.
- Leger LA, Mercier D, Gadoury C, Lambert J. The multistage 20 metre shuttle run test for aerobic fitness. *J Sports Sci*. 1988;6(2):93–101. <https://doi.org/10.1080/02640418808729800>
- Brown W, Bauman A, Chey T, Trost S, Mummery K. Method: comparison of surveys used to measure physical activity. *Aust N Z J Public Health*. 2004;28(2):128–134.
- Macniven R, Richards J, Gubhaju L, Joshy G, Bauman A, Banks E, et al. Physical activity, healthy lifestyle behaviors, neighborhood environment characteristics and social support among Australian Aboriginal and non-Aboriginal adults. *Prevent Med Reports*. 2016;3:203–210. <https://doi.org/10.1016/j.pmedr.2016.01.006>
- NSW Government. *Adult population health survey*. NSW Government; 2015.
- Radford K, Mack HA, Robertson H, Draper B, Chalkley S, Daylight G, et al. The Koori Growing Old Well Study: investigating aging and dementia in urban Aboriginal Australians. *Int Psychogeriatr*. 2014;26(6):1033–1043.
- Pressick EL, Gray MA, Cole RL, Burkett BJ. A systematic review on research into the effectiveness of group-based sport and exercise

- programs designed for Indigenous adults. *Journal of Science and Medicine in Sport*. 2016;19(9):726–732.
24. National Health and Medical Research Council. Ethical conduct in research with Aboriginal and Torres Strait Islander Peoples and communities: Guidelines for researchers and stakeholders. Commonwealth of Australia; 2018.
 25. Lokuge K, Thurber K, Calabria B, Davis M, McMahon K, Sartor L, et al. Indigenous health program evaluation design and methods in Australia: a systematic review of the evidence. *Aust N Z J Public Health*. 2017;48(5):480–2.

How to cite this article: Macniven R, Delbaere K, Lewis E, Radford K, Canuto K, Dickson M, et al. Community co-selection of measures to evaluate the health and wellbeing impact of Aboriginal and Torres Strait Islander community running groups. *Health Promot J Austral*. 2023;34:17–23. doi:[10.1002/hpja.600](https://doi.org/10.1002/hpja.600)