MJA
The Medical Journal of Australia

Supporting Information

Supplementary methods and results

**This appendix was part of the submitted manuscript and has been peer reviewed.
It is posted as supplied by the authors.**

Appendix to: Hyde Z, Smith K, Malay R, et al. Intrinsic capacity and ageing well for Aboriginal people in remote Western Australia: a longitudinal cohort study. *Med J Aust* 2025; doi: 10.5694/mja2.52544.

Supplementary methods

Table 1. Information used to operationalise intrinsic capacity at baseline

Domain	**Questionnaire/assessment items**	**Criterion for impairment**
Cognition	Clinical review by a consultant specialist after initial testing by Kimberley Indigenous Cognitive Assessment	Diagnosis of cognitive impairment not dementia or dementia
Locomotion	M8: Do you have trouble walking? *(yes/no/don't know)* FM8: Does s/he have trouble walking? *(yes/no/don't know)*	Yes OR Yes
Sensory	M1: Are your eyes good? Can you see everything? *(yes/no/don't know)* M2: Are your ears good? Can you hear everything? *(yes/no/don't know)*	No OR No
Vitality	D8: Are you eating well? If no, do you not eat well sometimes…….all the time? *(yes/sometimes/all the time)* FE5: Is s/he eating properly? *(yes/no)*	No, all the time OR No
Psychological/mood	D1: How are you feeling now? Good? No good? *If no good*, Do you feel no good only sometimes…. All the time? *(good/sometimes/all the time)* FE1: Is s/he happy most of the time? *(yes/no)* FE2: Is s/he sad most of the time? *(yes/no)*	No good, all the time OR (No AND Yes)

Table 2. Information used to operationalise intrinsic capacity at follow-up

Domain	**Questionnaire/assessment item(s)**	**Criteria for impairment**
Cognition	Clinical review by a consultant specialist after initial testing by Kimberley Indigenous Cognitive Assessment	Diagnosis of cognitive impairment not dementia or dementia
Locomotion	M9: Do you have trouble walking? *(no/yes/don't know)* FM7: Does s/he have trouble walking? *(no/yes/don't know)*	Yes OR Yes
Sensory	M1: Are your eyes good? Can you see everything? *(no/yes/don't know)* M2: Are your ears good? Can you hear everything? *(no/yes/don't know)*	No OR No
Vitality	D5: In the last week, have you been eating too much or eating only a little bit? *(never/sometimes/a lot/all the time)* FD5: Is s/he eating properly? *(no/yes/don't know)*	A lot OR all the time OR No
Psychological/mood	D1: In the last week have you: felt down, sad, no good? *(never/sometimes/a lot/all the time)* FD1: Is s/he happy most of the time? *(no/yes/don't know)* FD2: Is s/he sad most of the time? *(no/yes/don't know)*	A lot OR all the time OR (No AND Yes)

Supplementary results

Figure 1. Study flowchart

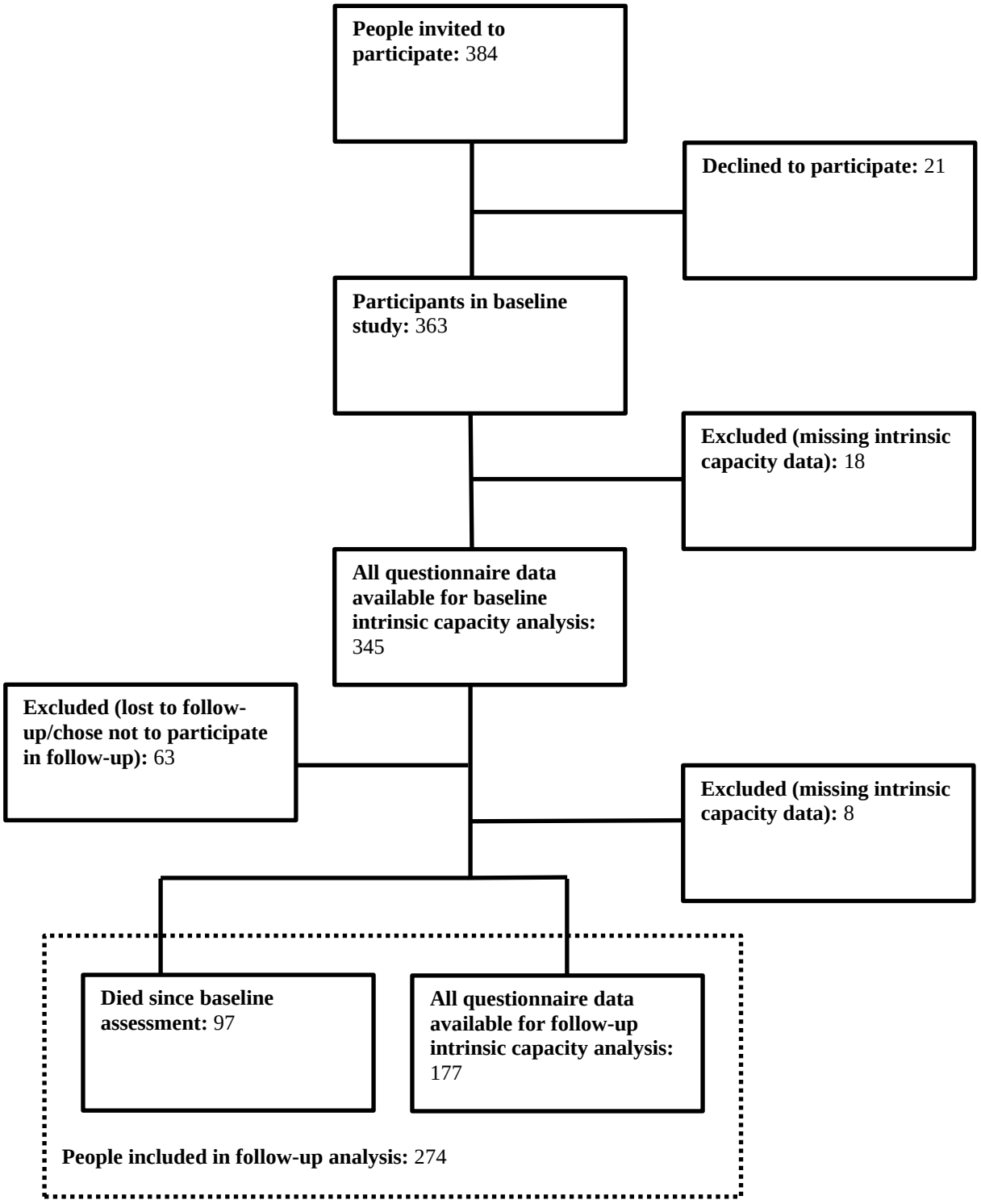

Table 3. Baseline statistics for responders and non-responders to follow-up study

Variable	Responders	Non-responders	P*
Number of people	185	63	
Age (years)			0.035
45-49	42 (22.7%)	15 (24%)	
50-59	67 (36.2%)	35 (56%)	
60-69	36 (19.5%)	8 (13%)	
70-79	31 (16.8%)	4 (6.3%)	
≥80	9 (4.9%)	1 (1.6%)	
Female sex	111 (60.0%)	38 (60%)	0.96
Some formal education	118 (63.8%)	52 (82%)	0.006
Stroke	23 (12.4%)	5 (7.9%)	0.34
Diabetes	74 (40.0%)	26 (41%)	0.79
Hypertension	74 (40.0%)	27 (43%)	0.58
Heart problems	29 (15.7%)	16 (25%)	0.09
Kidney problems	27 (14.6%)	10 (16%)	0.76
Pain	106 (57.3%)	43 (68%)	0.13
Falls	32 (17.3%)	12 (19%)	0.75
Head injury	91 (49.2%)	35 (56%)	0.32
Urinary incontinence	30 (16.2%)	10 (16%)	0.95
Polypharmacy	21 (11.4%)	7 (11%)	0.96
Alcohol use			0.06
Never drank	59 (31.9%)	10 (16%)	
Ex-drinker low use	33 (17.8%)	12 (19%)	
Ex-drinker high use	30 (16.2%)	8 (13%)	
Current drinker low use	55 (29.7%)	30 (48%)	
Current drinker high use	8 (4.3%)	3 (4.8%)	
Smoking			0.92
Never smoked	82 (44.3%)	24 (38%)	
Ex-smoker low use	18 (9.7%)	8 (13%)	
Ex-smoker high use	20 (10.8%)	7 (11%)	
Current smoker low use	36 (19.5%)	13 (21%)	
Current smoker high use	29 (15.7%)	11 (18%)	
Chew tobacco			0.79
Never chewed tobacco	108 (58.4%)	40 (64%)	
Used to chew tobacco	12 (6.5%)	4 (6.3%)	
Currently chews tobacco	64 (34.6%)	19 (30%)	

* Pearson χ^2.

Table 4. Number of people in each intrinsic capacity score category at baseline and at follow-up

	Follow-up						
	5	4	3	2	1	0	Died
Baseline							
5	12	9	7	3	0	0	14
4	18	27	23	10	1	0	28
3	3	13	26	10	2	0	28
2	3	2	2	3	1	0	19
1	1	0	0	0	1	0	6
0	0	0	0	0	0	0	2

Response to the consolidated criteria for strengthening reporting of health research involving Indigenous peoples (CONSIDER)

Item		Response
1.	Describe partnership agreements between the research institution and Indigenous-governing organization for the research, (e.g., Informal agreements through to MOU (Memorandum of Understanding) or MOA (Memorandum of Agreement).	The research arose from many years of close collaboration with the participating remote communities and Aboriginal community controlled health organisations (ACCHOs), who identified ageing well as a priority. Approval to conduct the study was obtained from the communities involved, the Kimberley Aboriginal Medical Services Council, Kimberley Aged and Community Services, the Kimberley Aboriginal Health Planning Forum Research Subcommittee (reference number: 2021-017), the Human Research Ethics Committee of the University of Western Australia (reference number: 2022/ET000597), and the Western Australian Aboriginal Health Ethics Committee (reference number: HREC1072).
2.	Describe accountability and review mechanisms within the partnership agreement that addresses harm minimization.	The research is overseen by a Kimberley Elders Advisory Group, ensuring culturally safe decision making and that the rights of the participating communities are upheld.
3.	Specify how the research partnership agreement includes protection of Indigenous intellectual property and knowledge arising from the research, including financial and intellectual benefits generated (e.g., development of traditional medicines for commercial purposes or supporting the Indigenous community to develop commercialization proposals generated from the research).	See response to items 1 and 2.
4.	Explain how the research aims emerged from priorities identified by either Indigenous stakeholders, governing bodies, funders, non-government organization(s), stakeholders, consumers, and empirical evidence.	See response to items 1 and 2, and the Introduction section of the paper.
5.	Specify measures that adhere and honor Indigenous ethical guidelines, processes, and approvals for all relevant Indigenous stakeholders, recognizing that multiple Indigenous partners may be involved, e.g., Indigenous ethic committee approval, regional/national ethics approval processes.	See response to items 1 and 2.
6.	Report how Indigenous stakeholders were involved in the research processes (i.e., research design, funding, implementation, analysis, dissemination/recruitment).	See response to items 1, 2, and 7, and the Methods section of the paper.
7.	Describe the expertise of the research team in Indigenous health and research.	Collectively, the research team has several decades' experience in the field of ageing well, and in Aboriginal and Torres Strait Islander health research. Indigenous team members RM and DB provided cultural oversight for the study. RM is a Ardigin Kija woman from the East Kimberley with expert cultural knowledge of the region. DB is a Bard/Yindijibarndi woman and is currently Director of the Centre for Aboriginal Medical and Dental Health at the University of Western Australia.
8.	Describe the methodological approach of the research including a rationale of methods used and implication for Indigenous stakeholders, e.g., privacy and confidentiality (individual and collective).	See the Methods section of the paper.

9.	Describe how the research methodology incorporated consideration of the physical, social, economic and cultural environment of the participants and prospective participants. (e.g., impacts of colonization, racism, and social justice). As well as Indigenous worldviews.	See response to items 1, 2, and 7, and the Methods section of the paper.
10.	Specify how individual and collective consent was sought to conduct future analysis on collected samples and data (e.g., additional secondary analyses; third-parties accessing samples (genetic, tissue, blood) for further analyses).	See the Methods section of the paper.
11.	Describe how the resource demands (current and future) placed on Indigenous participants and communities involved in the research were identified and agreed upon including any resourcing for participation, knowledge, and expertise.	All participating individuals at follow-up were remunerated for their time. Aboriginal interpreters were employed to translate survey questions to participants where required.
12.	Specify how biological tissue and other samples including data were stored, explaining the processes of removal from traditional lands, if done, and of disposal.	Not applicable.
13.	Explain how the research supported the development and maintenance of Indigenous research capacity (e.g., specific funding of Indigenous researchers).	This project has contributed to the ongoing development of Indigenous research capacity through upskilling of Aboriginal researchers, including Aboriginal postgraduate students working on separate components of this project.
14.	Discuss how the research team undertook professional development opportunities to develop the capacity to partner with Indigenous stakeholders.	Non-Indigenous members of the research team have undergone cultural awareness training.
15.	Specify how the research analysis and reporting supported critical inquiry and a strength-based approach that was inclusive of Indigenous values.	See response to items 1, 2, and 7.
16.	Describe the dissemination of the research findings to relevant Indigenous governing bodies and peoples.	Research findings are continually shared and discussed with the participating communities and ACCHOs.
17.	Discuss the process for knowledge translation and implementation to support Indigenous advancement (e.g., research capacity, policy, investment).	Training and education regarding Aboriginal ageing well, and use of valid assessment tools to inform service delivery for older people has been conducted with local ACCHOs and participating communities.

Criteria are reproduced from Huria T, Palmer SC, Pitama S, et al. Consolidated criteria for strengthening reporting of health research involving indigenous peoples: the CONSIDER statement. BMC Med Res Methodol. 2019;19:173.

Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist

Item		Recommendation	Complete
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	✓
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	✓
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	✓
Objectives	3	State specific objectives, including any prespecified hypotheses	✓
Methods			
Study design	4	Present key elements of study design early in the paper	✓
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	✓
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up	✓
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed	n/a
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	✓
Data sources/ measurement	8	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	✓
Bias	9	Describe any efforts to address potential sources of bias	✓
Study size	10	Explain how the study size was arrived at	✓
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	✓
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	✓
		(*b*) Describe any methods used to examine subgroups and interactions	✓
		(*c*) Explain how missing data were addressed	✓
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed	✓
		(*e*) Describe any sensitivity analyses	n/a
Results			
Participants	13	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	✓
		(b) Give reasons for non-participation at each stage	✓
		(c) Consider use of a flow diagram	✓
Descriptive data	14	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	✓
		(b) Indicate number of participants with missing data for each variable of interest	✓
		(c) *Cohort study*—Summarise follow-up time (eg, average and total amount)	✓
Outcome data	15	*Cohort study*—Report numbers of outcome events or summary measures over time	✓
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	✓
		(*b*) Report category boundaries when continuous variables were categorized	n/a
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	n/a

Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	n/a
Discussion			
Key results	18	Summarise key results with reference to study objectives	✓
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	✓
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	✓
Generalisability	21	Discuss the generalisability (external validity) of the study results	✓
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	✓

Criteria are reproduced from: von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP; STROBE Initiative. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. J Clin Epidemiol. 2008;61(4):344-9. n/a = not applicable.