



Indigenous Australians' participation in sports and physical activities

Part 1, Literature and AusPlay data review
FINAL REPORT

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Executive Summary

To inform the Australian Sport Commission (ASC)'s development of policy on sport delivery to Australian Aboriginal and Torres Strait Islander peoples, the ASC commissioned ORC International to conduct a research project on Australian Aboriginal and Torres Strait Islander's participation in sport and physical activities. The project was conducted in two parts: a data and literature review, followed by a qualitative research phase. This report summarises the methodology and findings from the first stage of the project, the data and literature review.

Analyses were performed on data produced by the AusPlay survey, which is the ASC's Australian national population tracking survey of adults' and children's sport and physical recreation participation, and recent literature on Indigenous sport and physical activity participation was reviewed, in relation to a set of research objectives stipulated by the ASC.

Data analysis

While the sample of Indigenous AusPlay respondents was relatively small (481), which affects the overall reliability of the Indigenous population estimates and trends presented in this report, especially for segments within the Indigenous population, this was the first time that the ASC had useable data on Indigenous people's participation in sports and physical activities, at a national population level. Over time, as more data is collected through the AusPlay survey, more robust analyses will be able to be conducted.

Indigenous and non-Indigenous Australians' participation in sport and physical activity

The AusPlay data analyses found that, in keeping with previous research findings, Indigenous people were less likely than non-Indigenous people to have participated in sports or physical activities in the last twelve months. However, the AusPlay data suggested that Indigenous adults who did participate tended to participate more frequently and for longer session times. Although based on less reliable data, the findings also suggested that participation rates and frequencies for Indigenous children may peak around the ages of 9-11 years old, possibly even surpassing non-Indigenous children's participation during this age, then decline at a faster rate than non-Indigenous children's participation after the age of eleven.

The analysis of the AusPlay data also revealed that the most popular sports and physical activities were similar for both male and female Indigenous participants, and non-Indigenous participants, with recreational walking and fitness/gym topping the list for all groups of participating adults. Participation through organisations or venues was less prevalent for Indigenous adults than non-Indigenous adults; but higher proportions of Indigenous adults participated through sports clubs or associations. There were no clear patterns of participation in organisations or venues, or in sports clubs and associations, by age or sex of Indigenous participants.

Indigenous Australians' participation in sport and physical activity

Although overall participation rates were not significantly different for Indigenous men and women, they were slightly lower for men, on the whole, in contrast to ABS statistics from 2007-08 which reported higher participation rates for men. In the AusPlay data, women who had participated tended to participate more often than men, but participating men tended to have spent longer in their last session of sport or physical activity. For children, girls appeared to have lower participation rates than boys.

Small sample sizes made analyses by geographical area particularly problematic. However, Indigenous adults in the Australian Capital Territory appeared to have had the highest proportional participation rates and participation through organisations or venues of the states and territories, but

the lowest participation through sports clubs and associations when they did participate through organisations or venues. Conversely, Indigenous adults from the Northern Territory appeared to have had the lowest participation rates and the lowest use of organisations or venues when they did participate, but one of the highest rates of participation specifically through sports clubs and associations (alongside Indigenous adults in Tasmania).

Although also based on less reliable data, it appeared that the participation rates of Indigenous adults may have been lowest in outer regional and very remote areas of Australia, and that the rates of participation through organisations or venues and through sports clubs and associations dropped in remote and very remote regions.

Literature review

Perceived benefits of sport participation

A wide range of benefits were identified in the literature on Indigenous sport and physical activity participation. These included benefits to health and wellbeing, education and employment, the reduction of crime and anti-social behaviour, and increased social capital. It was also suggested that regular, organised, group participation created opportunities which could be leveraged for other service provision (such as health services), that it had potential economic benefits, and could contribute to reconciliation of Indigenous culture in the wider community. Sports clubs and associations were generally viewed as particularly positive enablers of these benefits; however, authors cautioned against treating either sports and physical activity, or sports clubs, as some sort of 'magic bullet', noting that the benefits were inter-related, difficult to measure, and always occurring within a particular social and historical context which limits or enables the ability to achieve benefits, and influences the extent of the benefits and even how they are conceptualised or measured.

Key drivers and barriers to participation, and the decision-making process

The key drivers for Indigenous participation in sports and physical activity included, desire for fun or enjoyment, a perceived (often health or fitness-driven) need, a lack of barriers, perceived suitability (to personal requirements and preferences), and the existence of external, social support or encouragement. The main barriers fell broadly under the categories of: other commitments, especially to family or community; personal illness or injury; financial constraints; access issues; safety or comfort concerns; a different cultural construct of sport and physical activity; and racism. While the drivers and barriers to participation provided insights into some of the underlying factors influencing Indigenous participation in sports and physical activity, the subjective nature of decision-making and feelings of encouragement (or discouragement) to participate made these topics ideal for further exploration during the qualitative stage of this research.

Existing opportunities for Indigenous communities to participate

Macniven et al captured the details of 110 programs, operating in 2015, which aimed to increase Aboriginal and Torres Strait Islanders' physical activity levels, for health benefits. Their work significantly contributes to the understanding of the sport and physical activity opportunities for Indigenous Australians. There are, however, additional opportunities for Indigenous sport and physical activity participation, provided through programs and products which do not necessarily have a primarily health-benefit-based focus. Some mainstream sporting associations offer Indigenous program components, or have made efforts to introduce and document inclusion policies which explicitly refer to the inclusion of Indigenous Australians in their sports. There are also a number of organisations which are specifically dedicated to providing sports and physical activities opportunities for Indigenous people, and numerous grass-roots programs and community initiatives, which quite often run out of local youth and community centres.

Effectiveness of programs and products

To be effective in encouraging sustained Indigenous participation, the literature suggested that sports and physical programs and products encapsulate the following characteristics: ongoing relationship-building and community consultation and involvement, at all stages of development and implementation, including initiation and evaluations; local capacity-building, enabling long-term, sustainable control of the program; a tailored, flexible offer that is specifically designed for the needs and preferences of the particular community; a group, family or community, rather than individual focus; an environment which enables, not hinders, participants' cultural identity; a safe environment where participants feel welcome and supported; integration with healthy living programs, cultural learning and wider cultural experience; evaluations that take a more holistic, long-term approach and recognise benefits that may be difficult to quantify, rather than assessing separate, often short-term health variables; and long-term, reliable funding. Regular contact between experienced sportspeople and participants was recommended for sports programs, and it was advised that all programs and products encourage mentoring and modelling by older participants, and be promoted as games or sports, rather than as exercise or in terms of their desired outcomes (such as a fitness or personal health).

Provider-side drivers, opportunities and challenges

Opportunities exist for mainstream providers to continue to develop and apply inclusion policies, to recognise and embrace Indigenous cultures, and to expand the Indigenous components within their programs and products; and for any provider to increase the variety of offerings available to Indigenous Australians, or to address the absence of sport and physical activity offerings in some locations. Providers' main challenges arise from the inconsistent, changing policy and funding landscapes in which they operate, and in meeting the criteria for effective programs outlined above. Providing sports and physical activity programs and products to Indigenous communities requires time, effort and flexibility to work with the communities to ensure that the program or product is ultimately driven by the community, and that the particular needs and preferences of that community are met.

Knowledge gaps and recommendations

The research gaps identified in the data and literature review included the following issues:

- There being no recent, national data on sports and physical activity participation by Indigenous 15-17 year olds, as this group of respondents cannot be identified within the AusPlay sample¹
- An inadequate understanding of whether Indigenous women and men conceptualise and experience sport and physical activity differently to each other, or to non-Indigenous women and men, and whether this affects reported statistics
- A lack of findings on the potential relationships between Indigenous participation in sport and physical activities, and in sports clubs and associations, by remoteness
- Insufficient data to allow analyses of participation by further segmentations within Indigenous populations, such as:
 - sex within state or territory or remoteness areas, or remoteness areas within states and territories

¹ In the AusPlay survey, only respondents who are aged 18 years or older are asked potentially sensitive questions, such as cultural background, as described in the *Methodology* section, on page 8.

- participation rates throughout the lifecycle stages, particular for differently aged children, also by jurisdiction and/or remoteness category
- A requirement for more research to explore the role that sport and sport clubs play in building social capital and community capacity
- A scarcity of literature focusing on:
 - how Indigenous people decide to participate or not participate in sports and physical activities; the decision-making process
 - what has worked to encourage Indigenous participation in sport or physical activity broadly, as opposed to encouraging participation within a particular program or product
- Few insights into the additional programs and products adults would like for the children in their families and communities (family-orientated and culturally connected activities are preferred, but which types would they like more of, for their children)
- Minimal coverage, in this report, of the drivers for providers of sports and physical activity providers.

It is recommended that the qualitative stage of this research focus on:

- the differences between men and women's experiences and understanding of sport and physical activity
- what is involved in the decision-making process to participate, or not to participate in sport and physical activities, how individuals decide whether or not to participate, and experiences of sport and physical activity
- what would encourage an increase in sports and physical activity participation
- experiences of sports clubs (positive/ negative)
- what adults think would enable their children to participate more.

1 Introduction

The Australian Sports Commission (ASC) engaged ORC International to conduct a research project on Australian Aboriginal and Torres Strait Islander people's participation in sport and physical activities. The study was designed to explore Indigenous Australians' sports participation behaviour and provide the ASC with a deeper understanding of the drivers of that behaviour.

The ASC sought this research to:

- inform its policies and engagement model
- help inform how the ASC's sport sector partners (National Sporting Organisations (NSOs) and their supply chain) may successfully and viably deliver sport to Indigenous communities and develop targeted sports delivery, for both products and services, and communication strategies and tools to more effectively encourage participation among Indigenous Australians.

This report discusses the first stage of the project, which involved a data and literature review.

1.1 Objectives

The purpose of this study was to research Indigenous Australians' sports participation behaviour and help the ASC understand the context, patterns and drivers of that behaviour.

The specific research objectives were to:

- explore participation in sport and physical activity among Indigenous Australians, including in metropolitan, regional and remote or very remote locations
- identify and describe different segments that exist within the Australian Indigenous population who are either participating or not participating
- understand the perceived benefits of sport participation for the Indigenous community, including but not limited to health and wellbeing, education, crime or anti-social behaviour, social capital, in particular the role played by club sport
- explore the key drivers – emotional, attitudinal, motivational – and the needs and barriers – both real and perceived – to participation in sport and physical activity within the Indigenous community
- gain a better understanding of how people in Indigenous communities make their decisions to participate or not to participate in sport, as well as what drives them to participate in other physical recreation
- identify what would encourage Indigenous Australians to become more active
- understand what the participation opportunities – both sport and physical recreation – are for Indigenous communities, and how/if they are tailored to suit their needs
- understand which sports, programs or products, and which avenues, including sport clubs, work well for Indigenous communities and which don't, and why
- understand the drivers, opportunities and challenges for sport and physical recreation providers, in relation to Indigenous communities and Indigenous Australians.

2 Methodology

This project was undertaken in two stages:

- Data and literature review
- Qualitative research.

The outcomes of the first stage of the project were used to inform the qualitative research, which comprised the second stage.

The project was carried out in compliance with ISO 20252 and membership requirements for AMSRO and AMSRS.

This report summarises the methodology and findings from the first stage of the project: the data and literature review.

The terms *Indigenous* and *Aboriginal and Torres Strait Islander* are used interchangeably in this report, largely depending on the language used in the source data or publication.

In order to determine the existing state of knowledge about what drives Indigenous participation in sport or physical activity, the first stage of the project comprised a data and literature review. It involved:

- a review of the available data on Indigenous Australians as collected in the AusPlay survey, including:
 - an interrogation of the full available data set, including data collected from October 2015 to December 2016
 - an exploration of the differences in participation in sport and physical activity between Indigenous and non-Indigenous population groups, and the differences among subgroups (where appropriate) within Indigenous Australians
- a comprehensive literature review, including:
 - building on Craig Young's unpublished 2015 paper titled, *The link between culture and physical wellbeing amongst Indigenous Australians: a literature review*, to see whether any new studies in this area have been conducted
 - an exploration of any other published or grey literature in relation to the research objectives, listed in section 1.1, above
 - the incorporation of any additional, relevant literature provided directly to ORC International by the ASC, including materials provided to the ASC by its stakeholders and Clearinghouse members.²

2.1 Data analysis

Unless otherwise referenced, the primary data used in this report was obtained from the AusPlay survey, which is an Australian national population tracking survey of adults' and children's sport and physical recreation participation. The data was collected via computer-assisted telephone interviewing (CATI) over the fifteen months from October 2015 to December 2016. Respondents were aged 15 years or over, and were asked a range of questions about their participation in any physical activities they had done for sports, exercise or recreation, in the past twelve months. Data was

² Clearinghouse members include most local government areas, sports sector representatives, as well as individual, public subscribers. The ASC called for contributions of relevant, recent literature from Clearinghouse members, as described on page 13.

weighted to the Australian population by geographic strata (capital city or rest of state, within state or territory) and gender by age.

Respondents' Indigenous status was determined by their answer to the question "Are you of Aboriginal or Torres Strait Islander origin," with responses recorded as "yes", "no", "Prefer not to answer", or "Don't know". This question was only asked of respondents aged 18 or older, in a battery of potentially sensitive demographic questions that were introduced with a statement reminding respondents that they could elect to skip questions if they wished.

The unweighted AusPlay sample contained 25,025 responses.

As 640 respondents were aged 15-17 (and were therefore not asked about their cultural backgrounds), and 243 respondents chose not to answer the Aboriginal or Torres Strait Islander origin question (coded as "Refused"), and another 70 respondents indicated that they were unsure (coded as "Don't know"), a sample of 24,072 respondents was available for analyses comparing Indigenous and non-Indigenous participation.

Of the 24,072 sample, 481 respondents self-identified as being of Aboriginal or Torres Strait Islander origin (2%).

This sub-sample of Indigenous respondents contained slightly fewer men than women, with the least represented group being men over 65 years old, as shown in Table 1.

Table 1 – AusPlay Indigenous respondents, by age and sex (n=481)

	Male	Female	TOTAL
18-24 years old	32	36	68
25-34 years old	34	42	76
35-44 years old	39	41	80
45-54 years old	41	53	94
55-64 years old	44	49	93
65+ years old	24	46	70
TOTAL	214	267	481

There were a number of issues surrounding an analysis of AusPlay data by remoteness area. Remoteness area was calculated from residential postcode using tables derived from the postcode to remoteness area files in ABS cat. 1270.0.55.006. Postcodes to remoteness areas were not fully concordant in the ABS tables, as some postcodes encompassed multiple remoteness category areas, so a one-to-one look-up file was created, which assigned the remoteness area category with the greatest share of each postcode to that postcode.

However, residential postcode was not provided by all AusPlay respondents, as part of state or territory (the relevant capital city or the 'rest of state' within each state or territory) was recorded if a postcode was not provided. Some recorded postcodes were also not valid (not used by Australia Post), and some were post-office boxes or other non-residential postcodes, so the number of valid postcodes further reduced the sample of Indigenous responses able to be analysed by remoteness area. As a result, segmentation of AusPlay data by remoteness category should be used with caution.

Table 2 shows the breakdown of the AusPlay Indigenous respondent sample by remoteness category and state or territory.

Table 2 – AusPlay Indigenous respondent sample, by remoteness and state or territory (n=481)

	NSW	Vic	Qld	SA	WA	ACT	NT	Tas	TOTAL
Major cities	80	36	48	16	24	7	-	-	211
Inner regional	39	13	25	2	2	3	-	26	110
Outer regional	17	3	25	6	8	-	19	20	98
Remote	2	-	5	-	5	-	14	1	27
Very remote	2	-	4	-	2	-	4	-	12
No postcode ³	2	-	-	-	1	1	3	-	7
Invalid postcode ⁴	1	1	4	-	3	-	6	1	16
TOTAL	143	53	111	24	45	11	46	48	481

Table 3 shows the sample of AusPlay respondents, aged 18 years or more, who identified themselves as Aboriginal or Torres Strait Islanders, weighted to the Australian population for 2015-16. Table 4 shows the population estimates, for persons aged 18 years and over, as given by the Australian Bureau of Statistics (ABS) in tables from the *National Aboriginal and Torres Strait Islander Social Survey, Australia, 2014–15*.⁵ Both are given by remoteness category and state or territory of residence.

A lack of responses from remote or very remote South Australians identifying as Indigenous means the Indigenous populations from these regions (estimated at 4,300 adults by the ABS) are not represented in the AusPlay data.

Table 5 shows the difference between the AusPlay and ABS Indigenous adult population estimates by remoteness and state or territory. This suggests that, within the Indigenous population, residents of major cities, particularly in New South Wales, are likely to be over-represented in the AusPlay data; while outer regional, remote and very remote residents are likely to be under-represented, especially very remote residents in the Northern Territory, Queensland and Western Australia, and outer regional Queenslanders. This is not surprising, given that Indigenous status was not specifically factored into the AusPlay sampling and weighting schemes, and the majority of Indigenous Australians live in non-remote areas, while a relatively high proportion of people living in remote areas are Indigenous (AIHW [undated, webpage]).

The AusPlay and ABS estimates of the total adult Australian Indigenous population, however, are reassuringly similar (399,568 and 400,500 respectively).

Table 3 – AusPlay Indigenous adult population estimates, by remoteness and state or territory (N=399,568)

	NSW	Vic	Qld	SA	WA	ACT	NT	Tas	TOTAL
Major cities	89,727	29,012	46,949	11,805	17,703	2,697	-	-	197,894
Inner regional	46,407	10,792	21,746	2,028	1,026	1,135	-	5,935	89,069
Outer regional	14,085	3,633	24,855	2,934	6,319	-	7,203	8,046	67,074
Remote	2,581	-	6,372	-	4,308	-	2,736	545	16,543
Very remote	2,578	-	3,110	-	1,326	-	4,676	-	11,691

³ A postcode was not provided by the respondent.

⁴ The postcode provided by the respondent was not included in the ABS remoteness category from postcode table.

⁵ Note that the ABS rounded this table to the nearest thousand. Australian totals shown here are the sum of each remoteness area.

	NSW	Vic	Qld	SA	WA	ACT	NT	Tas	TOTAL
No postcode ¹	1,770	-	-	-	951	702	822	-	4,245
Invalid postcode ²	859	2,788	6,262	-	655	-	1,323	1,166	13,053
TOTAL	158,007	46,224	109,295	16,766	32,289	4,535	16,760	15,692	399,568

Table 4 – ABS Indigenous adult population estimates, by remoteness and state or territory

	NSW	Vic	Qld	SA	WA	ACT	NT	Tas	TOTAL
Major cities	57,700	15,300	32,000	11,200	19,900	4,000	-	-	140,100
Inner regional	40,700	9,300	21,000	1,900	4,100	-	-	8,000	85,000
Outer regional	20,600	4,400	35,600	4,900	7,200	-	8,200	6,200	87,100
Remote	4,100	-	7,900	1,100	9,600	-	9,000	600	32,300
Very remote	2,700	-	14,900	3,200	10,900	-	25,300	-	57,000
TOTAL	124,800	29,200	111,200	22,300	51,400	4,000	42,600	15,000	400,500

Table 5 – Indigenous population estimates, by remoteness and state or territory, AusPlay compared with ABS

AusPlay data difference from ABS	NSW	Vic	Qld	SA	WA	ACT	NT	Tas	TOTAL
Major cities	+32,027	+13,712	+14,949	+605	-2,197	-1,303	-	-	+57,794
Inner regional	+5,707	+1,492	+746	+128	-3,074	+1,135	-	-2,065	+4,069
Outer regional	-6,515	-767	-10,745	-1,966	-881	-	-997	+1,846	-20,026
Remote	-1,519	-	-1,528	-1,100	-5,292	-	-6,264	-55	-15,757
Very remote	-122	-	-11,790	-3,200	-9,574	-	-20,624	-	-45,309
TOTAL	+33,207	+17,024	-1,905	-5,534	-19,111	+535	-25,840	+692	-932

The small Indigenous sample size and the related sample issues mentioned above limited the reliability of analyses by segments within Aboriginal or Torres Strait Islanders, particularly segmentation by remoteness area, so analyses included breakdowns by age and sex, where possible, but not usually more refined breakdowns, and segmentation within geographic areas was minimal.

AusPlay Indigenous child data should only be used with particular caution, and is represented in this report as indicative only, as there was no way to determine whether a child currently identified as an Aboriginal or Torres Strait Islander (and, obviously, no way to determine how a child would identify themselves when adult). The Indigenous children's data was selected on the basis that the child had a parent or guardian who responded to the survey and identified themselves as being of Aboriginal or Torres Strait Islander origin. Information on the cultural background of any other parent or guardian was not sought, so the AusPlay data may have contained additional data for some children with a non-respondent parent or guardian who would have identified as an Aboriginal or Torres Strait Islander, had they been asked. There was no method to be able to identify, or quantify this.

Of the 481 Aboriginal or Torres Strait Islander respondents, 124 were parents or guardians to a child or children under 15 years old, within their household. One hundred and fifteen (115) of these respondents completed the child module of the questionnaire, providing information on the organised

sports or physical activities that one of their children had participated in, outside school hours, in the past twelve months.⁶ This resulted in a sample of 115 children identified as having at least one Indigenous parent or guardian. Table 6 shows the counts within this group, by age and sex.

Table 6 – AusPlay children with at least one Indigenous parent or guardian, by age and sex (n=115)

	Male	Female	TOTAL
0 - 4 years old	12	17	29
5 - 8 years old	19	14	33
9 - 11 years old	12	8	20
12 - 14 years old	21	12	33
TOTAL	64	51	115

Significance testing was undertaken to highlight differences that were statistically significant at the 95% confidence level, taking into account the overall AusPlay data WEFF value (1.53) for comparisons between Indigenous and non-Indigenous respondents, and using a specially calculated WEFF value (1.47) for comparisons between Indigenous respondent segments. The AusPlay standard relative margin of error tables were also used to highlight population estimates that were considered less reliable (of a size that had relative margin of error between 50% and 100%) and unreliable (of a size that indicated a relative margin of error greater than 100%).

In the graphs and tables in this report, asterisks (“*”) indicate statistically significant differences between compared data, and crosses (“†”) indicate that the estimate has relative margin of error between 50% and 100% and should be used with caution. Double crosses (“††”) are used to depict estimates with a relative margin of error greater than 100%, which is considered too unreliable to use.⁷

For further details on the methodologies employed in the AusPlay survey and AusPlay data analyses, please refer to the AusPlay questionnaire and the *AusPlay: First Methodology Report* documents previously provided to the ASC by ORC International (ORC International 2015; Hughes 2016).

For this project, AusPlay data was used mainly for analyses of participation rates, but also provided some insights into the motivations and barriers for Indigenous people to participate in sports and physical activities.

While the sample of Indigenous AusPlay respondents was relatively small, which affects the overall reliability of the Indigenous population estimates and trends presented in this report, especially for segments within the Indigenous population, this was the first time that the ASC had useable data on Indigenous people’s participation in sports and physical activities, at a national population level. Over time, as more data is collected through the AusPlay survey, more robust analyses will be able to be conducted.

⁶ If respondents had more than one child under 15, the child with the most recent birthday was selected. Children’s *organised* activities were defined for respondents as being “*activities that were formally arranged by a club, association, school or other type of organisation.*”

⁷ Note that these are used as indicators for reduced reliability, but that the total Indigenous sample was small to begin with. The smaller the sample, the less reliable the population estimate is; rather than any clear cut-offs existing for ‘unreliable’, ‘less reliable’, and ‘more reliable’ data.

2.2 Literature review

A literature search was performed in March 2017.

Literature was obtained via:

- online collections, such as those of:
 - the ASC Clearinghouse
 - Health/InfoNet
 - Australian Institute of Aboriginal and Torres Strait Islander Studies (AISTSIS)
 - The Australian Institute of Health and Welfare's *Closing the gap* clearinghouse
 - The Lowitja Institute
 - ScienceDirect (open access).
- Academic databases, including:
 - Informit collections
 - Emerald
 - Embase
 - Medline
 - Health Policy Reference Center
 - Cinahl
 - Academic Search Premier.
- general searching of the World Wide Web, using Google, and Google Scholar
- access to documents through the ASC Clearinghouse document services, in some cases when only bibliographic references could be sourced externally
- the ASC forwarding some materials that it:
 - held, or obtained from its stakeholders at the beginning of the project
 - received in response to the 'sticky' that the ASC placed in the Clearinghouse daily newsletter, distributed to Clearinghouse members, for a week beginning 22 March
- internally, through ORC International, for the unpublished literature review written by Craig Young (2015).

The search parameters and logic which were used varied depending on the level of sophistication of the search engines, but employed combinations of the terms:

- Aborigin*; Indigenous; Torres Strait Islander
- sport; physical activit*; exercise; recreation; gym

And sometimes included:

- urban; regional; remote
- health; wellbeing
- program; provi*.

When particularly relevant and useful literature was located, follow-up searches were often conducted for works by the same authors, or in the same publications (if their subject focus was related to the research objectives), or for the references they cited.

Priority was given to recent, Australian literature, the more recent, the higher priority, however a few papers that were over five years old were included because they were either forwarded to ORC International by the ASC or its stakeholders, or appeared particularly relevant to the research objectives determined by ASC (which are listed on page 6, in Section 1.1).

While some grey literature was obtained, there was not sufficient time within the study's timeframes to perform extended searches for grey literature, so the vast majority of the references were published materials.

Topics within the found literature were summarised and reported in relation to the ASC's objectives for this study.

3 Indigenous and non-Indigenous Australians' participation in sport and physical activity

This section of the report compares the sport and physical activity participation rates and behaviours of Indigenous and non-Indigenous Australians, based on AusPlay data. Substantial differences in the contexts and methodologies of other primary data sources made direct comparisons with AusPlay findings problematic, however, some similarities or differences with trends reported elsewhere are noted, where relevant.

Section 4, on page 25, then explores participation within Indigenous populations. The findings from Section 3 and Section 4 are summarised in Section 5, in terms of what they suggest about different segments within the Australian Indigenous population who are either participating or not participating in sport and physical activities.

Based on an analysis of AusPlay data, Indigenous people were less likely than non-Indigenous people to have participated in sports or physical activities in the last twelve months; however, Indigenous adults who did participate tended to participate more frequently and for longer session times. Although based on less reliable data, the findings also suggest that participation rates and frequencies for Indigenous children may peak around the ages of 9-11 years old, possibly even surpassing non-Indigenous children's participation during this age, then decline at a faster rate than non-Indigenous children's participation after the age of eleven.

The most popular sport and physical activities were similar for Indigenous and non-Indigenous participants, with recreational walking and fitness/gym topping the list for both groups of participating adults.

Participation through organisations or venues⁸ was less prevalent for Indigenous adults than non-Indigenous adults; but higher proportions of Indigenous adults participated through sports clubs or associations.

3.1 Overall participation

Fewer Indigenous than non-Indigenous adults had participated in physical activities for sports, exercise or recreation in the last twelve months (79%, compared to 87%).⁹ That Indigenous adults generally have lower participation rates and higher inactivity rates is a consistent finding across different data sources (for example: ABS 2004; ABS 2010a; ABS 2014; ABS 2016; Gray, Macniven, Thomson 2013; Pressick et al 2016).

The differences between the participation rates of Indigenous and non-Indigenous men were greater than the differences between Indigenous and non-Indigenous women, although both were statistically significant. Seventy-seven percent (77%) of Indigenous men had participated, compared with 88% of non-Indigenous men, while 80% of Indigenous women had participated, compared with 87% of non-Indigenous women.

As shown in Figure 1 and Figure 2, the differences in men's participation rates were statistically significant for all age groups, except 35-44 year olds and 55-64 year olds.¹⁰ For the Indigenous and

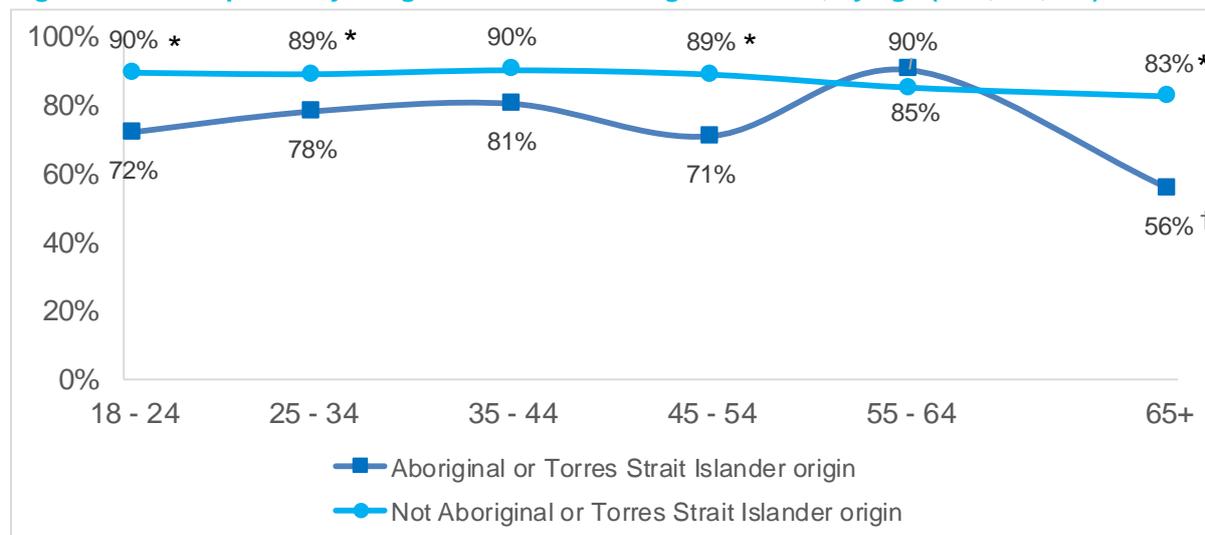
⁸ In the AusPlay survey, *organisations and venues* include sports clubs and associations, but also a range of other not mutually exclusive categories, for example, gym/fitness centre/leisure centres, individual personal trainers or coaches, recreational clubs or associations, educational institutions, ovals or other public spaces and private studios.

⁹ This difference was statistically significant at the 95% confidence level.

¹⁰ Percentages for 45-54 and 65+ year old men were derived from estimates that had relative margins of error between 50% and 100% and should be used with caution.

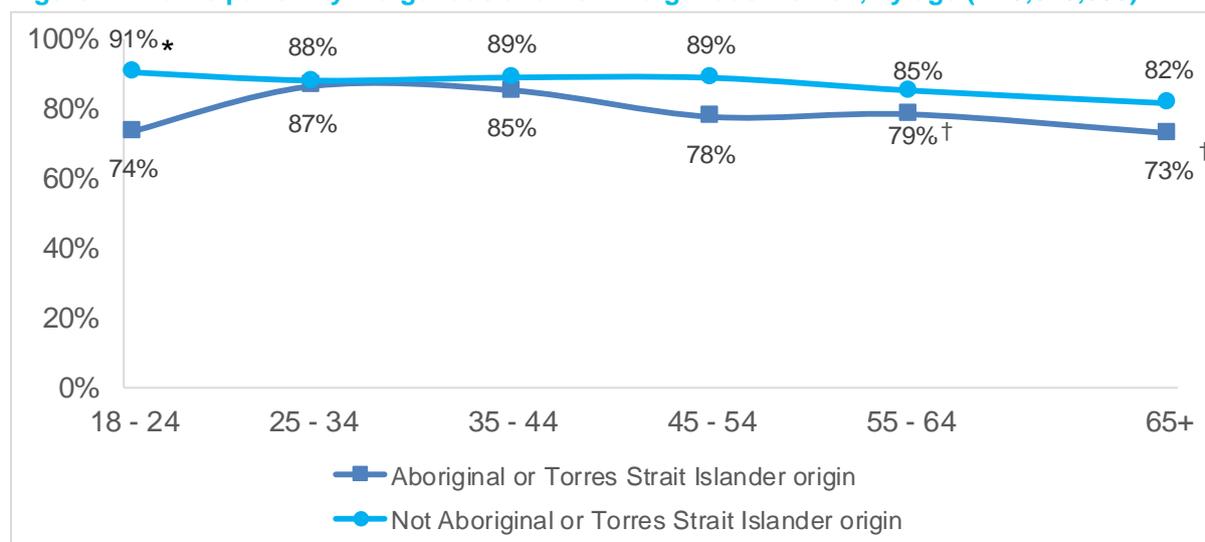
non-Indigenous women compared by age, women aged 18-24 years had the greatest, and the only statistically significant, difference in participation rates by indigeneity.¹¹

Figure 1 – Participation by Indigenous and non-Indigenous men, by age (N=9,179,407)



Base: Adult male population

Figure 2 – Participation by Indigenous and non-Indigenous women, by age (N=9,540,659)



Base: Adult female population

Children of Indigenous AusPlay respondents had lower participation rates overall than children of non-Indigenous AusPlay respondents (60%, compared to 70%).¹² However, boys in this data set had similar (and slightly higher) rates (72%, compared to 70%), while girls with at least one known Indigenous parent or guardian had lower participation rates than girls with at least one known non-Indigenous parent or guardian (49% and 70% respectively).¹³

Figure 3 shows participation rates for children with at least one Indigenous parent and children with at least one non-Indigenous parent, by age groups; however, note that the findings should be used with

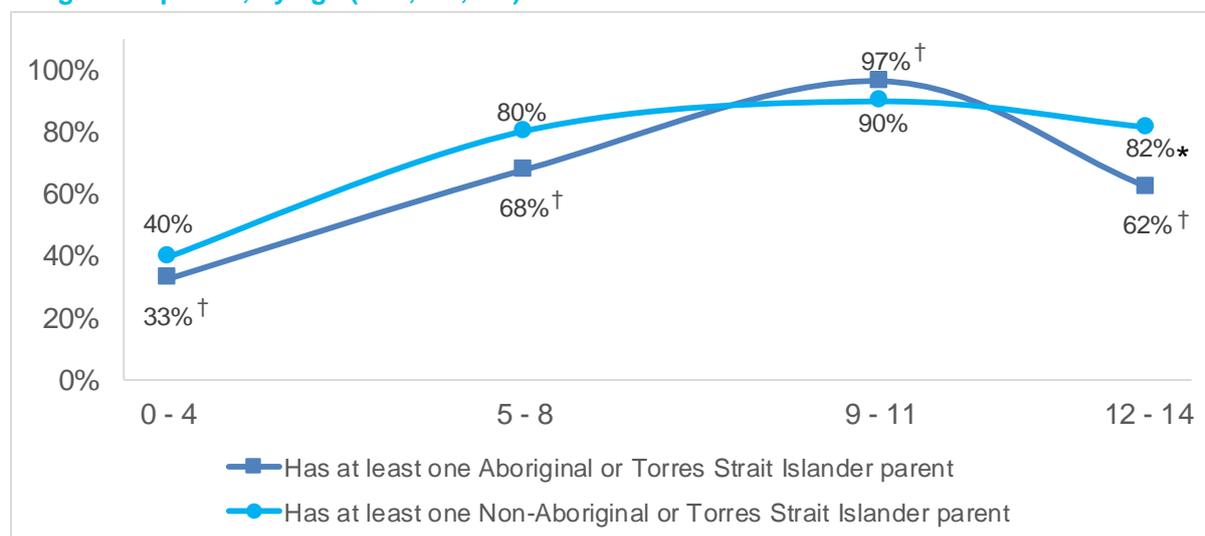
¹¹ Percentages for 55-64 and 65+ year old women were derived from estimates that had relative margins of error between 50% and 100% and should be used with caution.

¹² This difference was statistically significant at the 95% confidence level.

¹³ This difference was statistically significant at the 95% confidence level.

caution.¹⁴ The AusPlay results suggest that rates of Indigenous participation in sport and physical activity may decline more rapidly after the age of eleven, than the rates of non-Indigenous children of the same age.

Figure 3 – Participation by children with an Indigenous parent and children with a non-Indigenous parent, by age (N=4,565,212)



Base: Child population

The ABS also found that, in 2007-08, lower proportions of Indigenous girls than boys (all aged 4-14) participated in organised sports (43% of girls, 51% of boys) (ABS 2010a). In this data, girls' participation rates grew from 30% at 4-8 years old, to 57% at 9-11 years old, before dropping back to 51% at 12-14 years old, in a similar pattern to the AusPlay children's data in Figure 3. In contrast, boys' participation rates continued to rise from 34% at 4-8 years old, to 63% at 9-11, to 69% at 12-14.

In a different measure of whether children met daily physical activity recommendations in 2012-13, it was found that Indigenous children (in non-remote areas) had similar levels of physical activity to non-Indigenous children at ages 2-4, and a significantly *higher* proportion of Indigenous 5-17 year olds met the recommended daily amount (although it was still of concern, at under half; 48% for Indigenous children, and 35% of non-Indigenous children). Indigenous girls were still found to have done less physical activity than Indigenous boys (41% met the daily recommendations, compared with 54% of boys) (AIHW 2015).

Aside from levels of participation, LSIC data certainly indicates that Indigenous children enjoy physical activity, with 89% of 5-14 year olds indicating that they either "like it a lot" (79%) or "like it a bit" (10%), and only 2% saying that they disliked it, either "a bit" or "a lot" (DHS 2017).¹⁵

3.2 Frequency

The frequency of participation in sports and physical activities reported by Indigenous and non-Indigenous adults who had participated in the last twelve months is shown in Figure 4. Although the differences were not statistically significant, slightly higher proportions of Indigenous adults than non-

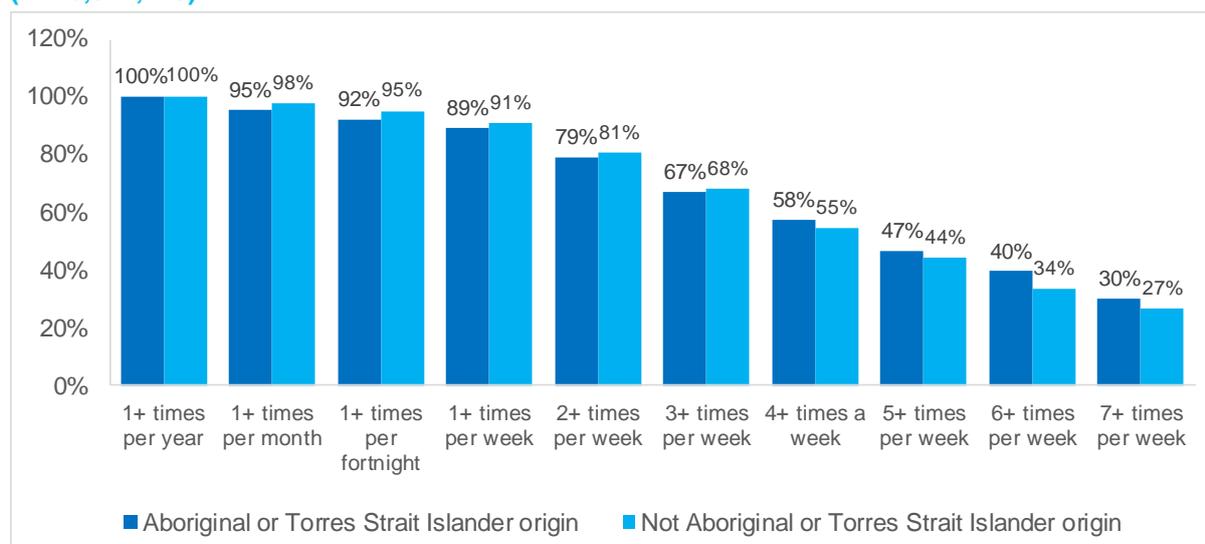
¹⁴ All percentages for children with at least one Indigenous parent were derived from estimates that had relative margins of error between 50% and 100%.

¹⁵ This was based on a sample of 1,258 children from urban, regional and remote areas of Australia. The data is from a longitudinal study of Indigenous children, and is not sampled to be representative of the Australian Indigenous population. Interviews took place in seven waves between April 2008 and December 2014.

Indigenous adults participated at the higher frequency levels of four times a week or more (at least 208 sessions in the year).

Indigenous adults had participated in an average of 266 sessions of sport or physical activity in the year (with a median of 221 sessions), which was more than the average of 252 done by non-Indigenous adults (with a median of 209). It was Indigenous women who brought the adult average frequency above the non-Indigenous average, with Indigenous women participating in 291 sessions, on average, compared with 258 for non-Indigenous women (with medians of 235 and 214 respectively). On the other hand, Indigenous men did fewer sessions on average than non-Indigenous men (239 compared with 246; with respective medians of 192 and 209).

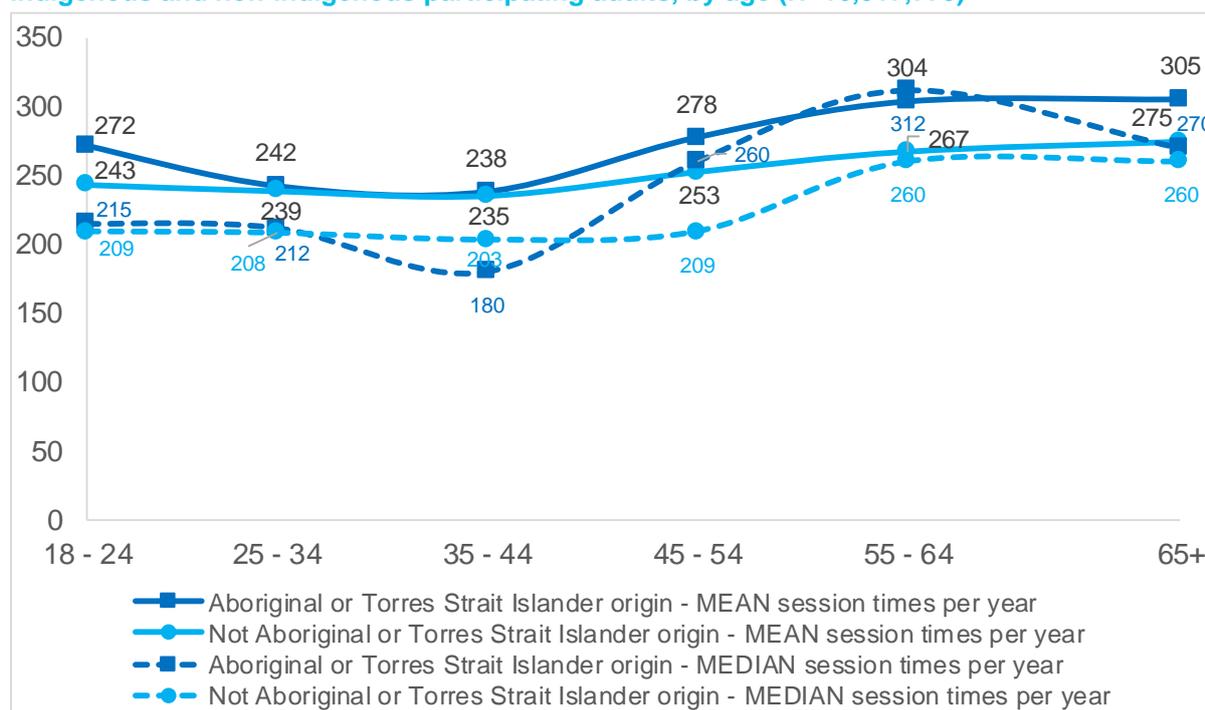
Figure 4 – Frequency of participation by Indigenous and non-Indigenous participating adults (N=16,317,775)



Base: Participating adults

The average and median number of sessions participated in, by age, are shown in Figure 5. Although the average frequencies of Indigenous adults remained higher than those of non-Indigenous adults throughout the adult life-cycle, the differences were negligible from around 25 to 44 years old.

Figure 5 – Mean and median frequency of participation (number of sessions in last year) by Indigenous and non-Indigenous participating adults, by age (N=16,317,775)



Base: Participating adults

Children with at least one Indigenous parent participated less frequently in organised sport or physical activities outside school hours than children with at least one non-Indigenous parent, with an average number of sessions per year at 99 and 115 respectively (and respective medians of 63 and 92). The means and medians for Indigenous and non-Indigenous boys and girls are listed in Table 7. Girls with at least one Indigenous parent had the lowest mean frequency, at 90 times in the last year, and a particularly low median, compared to those of the other boys and girls, at 52 times in the last year.¹⁶

Table 7 – Mean and median frequency of participation by children with an Indigenous parent and children with a non-Indigenous parent, by sex (N=3,179,109)

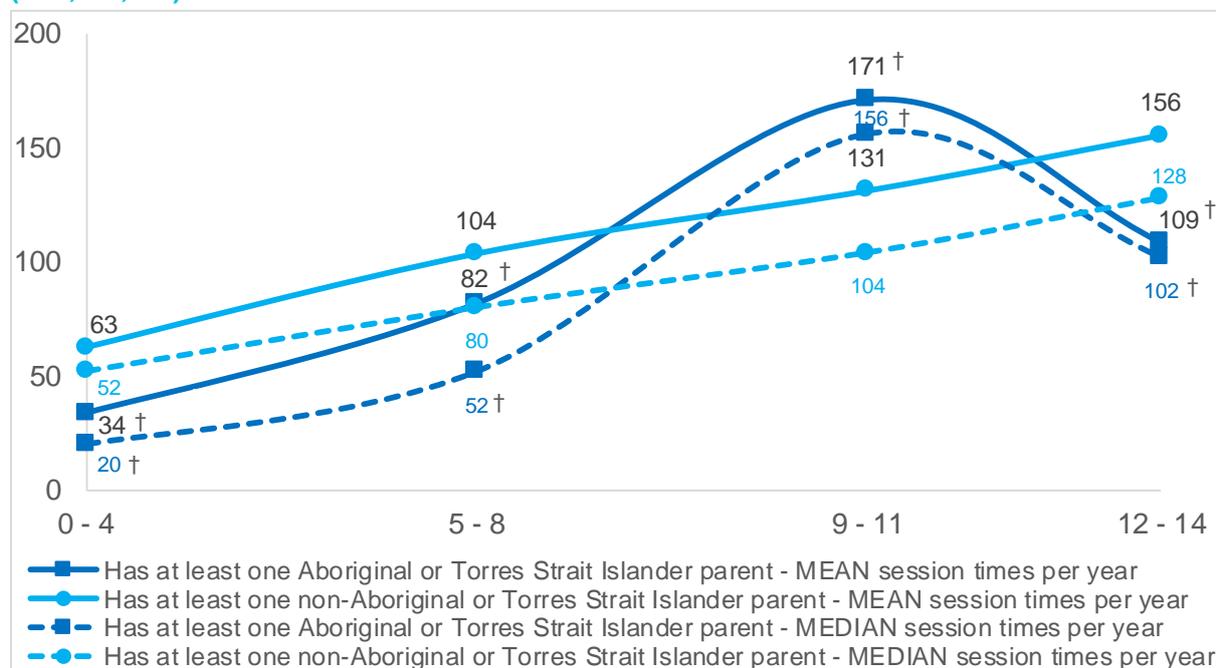
(Number of sessions in last year)	Boys	Girls
Mean		
Has at least one Aboriginal or Torres Strait Islander parent	105	90
Has at least one Non-Aboriginal or Torres Strait Islander parent	119	110
Median		
Has at least one Aboriginal or Torres Strait Islander parent	102	52
Has at least one Non-Aboriginal or Torres Strait Islander parent	96	85

The mean and median number of times children had participated in organised sport or physical activities outside school hours is shown in Figure 6. While the data for children with at least one

¹⁶ Only 36% of participating girls with at least one Indigenous parent had participated more than 52 times in the last year (more than once a week, on average), but the majority of those (22% of participating girls with at least one Indigenous parent) had participated 208 times or more; whereas 67% of participating boys with at least one Indigenous parent had participated more than 52 times in the last year, but only 7% had participated 208 times or more. This meant that girls with at least one Indigenous parent were more likely to participate infrequently (52 times or less), but those who participated frequently were more likely to participate very frequently (208 times or more).

known Indigenous parent is less reliable, it appears that these children may tend to participate less frequently than children with at least one known non-Indigenous parent, except around the ages of 9-11 years old, when they may participate more often.

Figure 6 – Mean and median frequency of participation (number of sessions in last year) by children with an Indigenous parent and children with a non-Indigenous parent, by age (N=3,179,109)



Base: Participating children

3.3 Duration

Indigenous adults who participated in sports and physical activities tended to have spent longer in their last active session than non-Indigenous adults, at an average of 247 minutes, compared to an average of 139 minutes for non-Indigenous adults (medians of 65 minutes and 60 minutes respectively).¹⁷ Indigenous men and women both had higher last session averages and medians than their non-Indigenous counterparts, as shown in Table 8.

Table 8 – Mean and median duration of last session, by sex (N=16,317,775)

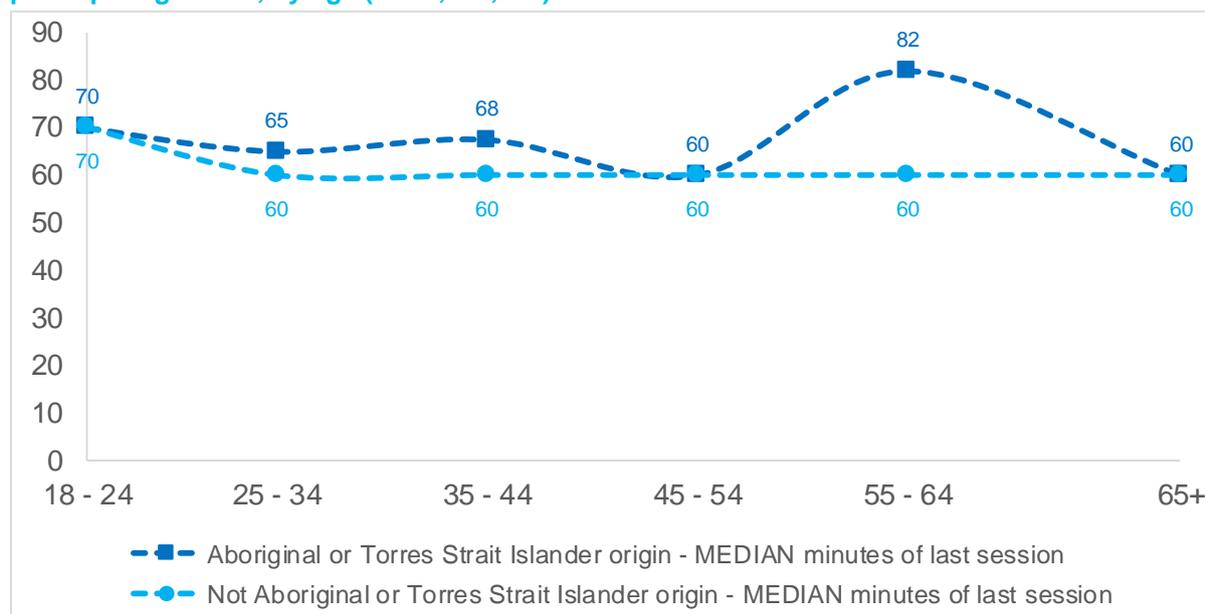
(Duration of last session, in minutes)	Men	Women
Mean		
Aboriginal or Torres Strait Islander origin	369	137
Not Aboriginal or Torres Strait Islander origin	181	98
Median		
Aboriginal or Torres Strait Islander origin	75	60
Not Aboriginal or Torres Strait Islander origin	71	54

A 35-44 year old Indigenous respondent had mentioned skiing for 3 weeks and another had mentioned fishing for two weeks, which created a spike in the average duration for this age group, to 575 minutes (compared to an average of 129 minutes for non-Indigenous participants of the same

¹⁷ Indigenous men's durations are discussed further in Section 4.1, on page 25.

age). Averages have not been included in Figure 7, to allow a scale in which differences in medians can be seen. The median durations of Indigenous adults' last session were the same, or higher, than non-Indigenous adults' for all age groups, and 55-64 year old Indigenous participants had spent the longest in their last physically active sessions (median 82 minutes, compared to 60 minutes for non-Indigenous 55-64 year olds).

Figure 7 – Median duration of last session (in minutes) for Indigenous and non-Indigenous participating adults, by age (N=16,317,775)



Base: Participating adults

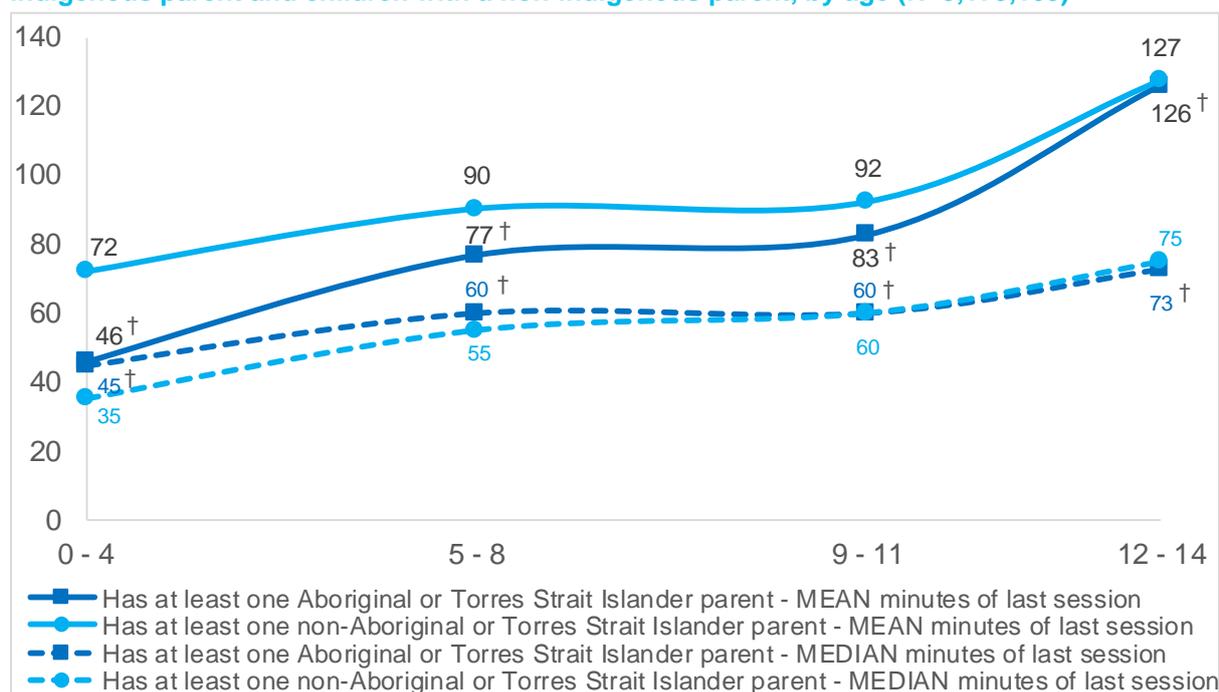
Children with at least one Indigenous parent spent a shorter time, on average in their last physically active session outside school hours, than children with at least one non-Indigenous parent (84 minutes, compared with 96 minutes). Their median durations, however, were the same, at 60 minutes for both sets of children. Table 9 lists the mean and median durations for boys and girls.

Table 9 – Mean and median duration of last session for children with an Indigenous parent and children with a non-Indigenous parent, by sex (N=3,179,109)

(Duration of last session, in minutes)	Boys	Girls
Mean		
Has at least one Aboriginal or Torres Strait Islander parent	94	71
Has at least one Non-Aboriginal or Torres Strait Islander parent	99	92
Median		
Has at least one Aboriginal or Torres Strait Islander parent	60	60
Has at least one Non-Aboriginal or Torres Strait Islander parent	60	60

Figure 8 shows children's means and medians by age, and suggests that the differences in last session length, between children with at least one Indigenous parent and children with at least one non-Indigenous parent, may have reduced with age.

Figure 8 – Mean and median duration of last session (in minutes) for children with an Indigenous parent and children with a non-Indigenous parent, by age (N=3,179,109)



Base: Participating children

3.4 Top activities

The same activities appeared in the top five sport and physical activities for both Indigenous adults and non-Indigenous adults, as shown in Table 10 and Table 11.¹⁸ The participation levels from within the participating Indigenous and non-Indigenous populations were also similar for the top five activities. Recreational walking was the most commonly undertaken activity for both groups at 49% of Indigenous adult participants and 51% of non-Indigenous adult participants.

The greatest differences in rankings for the top 15 activities for Indigenous and non-Indigenous adults were that rugby league was the twelfth most popular activity that Indigenous adults participated in, ranking 39th for non-Indigenous adults (4% of Indigenous participants, compared with 1% of non-Indigenous participants), while tennis ranked ninth for non-Indigenous adults and 24th for Indigenous adults (5% of non-Indigenous participants, compared with 2% of Indigenous participants). Touch football, Australian football and recreational fishing were also more popular with Indigenous adults; while bushwalking, yoga and pilates made the top 15 list for non-Indigenous adults only.

¹⁸ Asterisks in the tables indicate a significant difference in the proportion of Indigenous and non-Indigenous participants in the activity.

Table 10 – Top 15 activities for Indigenous adults (N=314,606)

Ranking	Sport or physical activity	Ranking by non-Indigenous	% of Indigenous sport or physical activity participants
1	Walking (Recreational)		49%
2	Fitness/Gym		36%
3	Swimming	4	15%
4	Athletics, track and field (incl. jogging /running)	3	14%*
5	Cycling		10%*
6	Basketball	11	7%*
7	Cricket	13	6%*†
8	Golf	7	5%†
9	Touch football	18	5%*†
10	Australian football	16	5%†
11	Fishing (recreational)	17	5%†
12	Rugby league	39	4%*†
13	Football/soccer	8	4%†
14	Netball	12	4%†
15	Surfing		4%†

Table 11 – Top 15 activities for non-Indigenous adults (N=16,003,169)

Ranking	Sport or physical activity	Ranking by Indigenous	% of non-Indigenous sport or physical activity participants
1	Walking (Recreational)		51%
2	Fitness/Gym		38%
3	Athletics, track and field (incl. jogging /running)	4	17%*
4	Swimming	3	17%
5	Cycling		14%*
6	Bush walking	16	7%*
7	Golf	8	6%
8	Football/soccer	13	6%
9	Tennis	24	5%*
10	Yoga	18	5%
11	Basketball	6	3%*
12	Netball	14	3%
13	Cricket	7	3%*
14	Pilates	19	3%
15	Surfing		3%

Swimming and football/soccer were the most common activities undertaken by both children with at least one Indigenous parent and children with at least one non-Indigenous parent, as shown in Table 12 and Table 13. Football/soccer was about equally popular with children from both groups (22% of children with an Indigenous parent, 21% of children with a non-Indigenous parent). However, 26% of children who participated in organised sports or physical activity outside school hours, who had at least one Indigenous parent, did swimming, compared to 45% of children with at least one non-Indigenous parent.

Some other probable differences between the two groups of children included touch football and rugby league being more popular with children with at least one Indigenous parent, and Australian football, tennis and athletics, track and field being more popular with children with at least one non-Indigenous parent; however, the estimates for the activities for children with at least one Indigenous parent were not considered large enough to be reliable for touch football and lower-ranked activities, so these findings are presented as indicative only.

Table 12 – Top 10 activities for children with at least one Indigenous parent (N=77,551)

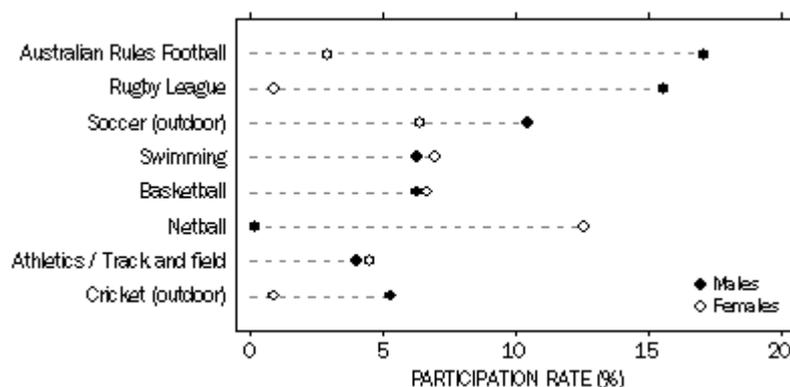
Ranking	Sport or physical activity	Ranking by non-Indigenous	% of sport or physical activity participants with Indigenous parent
1	Swimming		26% ^{††}
2	Football/Soccer		22% [†]
3	Rugby league	12	17% ^{††}
4	Gymnastics	5	12% [†]
5	Touch football	15	9% [*]
6	Netball		9%
7	Dancing - Recreational	4	9%
8	Karate	13	7%
9	Cricket	8	6%
10	Basketball	7	6%

Table 13 – Top 10 activities for children with at least one non-Indigenous parent (N=3,101,558)

Ranking	Sport or physical activity	Ranking by Indigenous	% of sport or physical activity participants with non-Indigenous parent
1	Swimming		45% [*]
2	Football/Soccer		21%
3	Australian football	13	12% [*]
4	Dancing - Recreational	7	11%
5	Gymnastics	4	11%
6	Netball		11%
7	Basketball	10	10%
8	Cricket	9	9%
9	Tennis	20	9%
10	Athletics, track and field ¹⁹	19	7%

The ABS provides data on the *organised sports* that Indigenous children, aged 4-14 years, participated in, in 2007-08. By comparison, Table 12 contains all but two of the ABS's list of the top eight organised sports played by Indigenous children, albeit in a different order. The major difference between the two sets of results is that in the ABS list, Australian football was the most popular sport (mostly for boys), and athletics, track and field ranked highly (for both boys and girls), as seen in the ABS chart reproduced here in Figure 9 (ABS 2010a).

Figure 9 – ABS's types of organised sports Indigenous child has played in the last 12 months

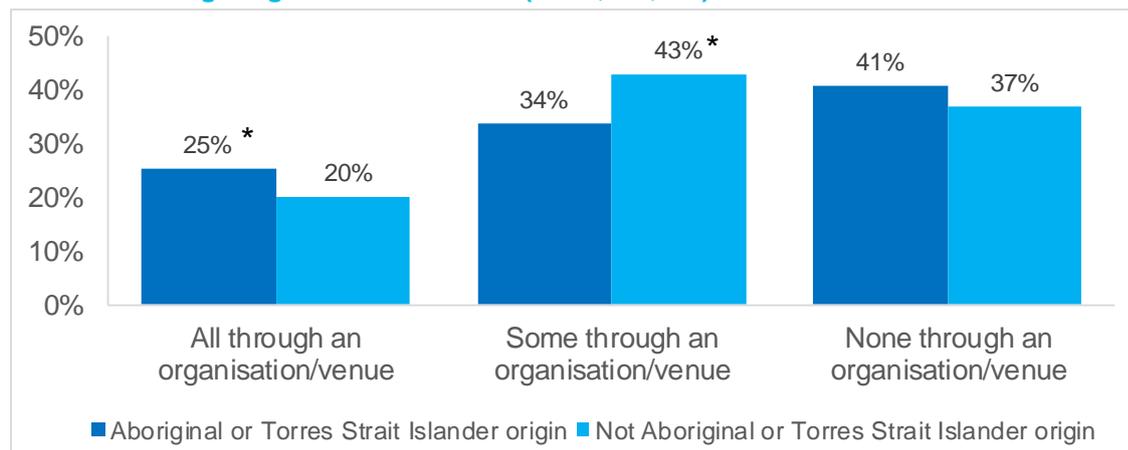


¹⁹ Including jogging or running.

3.5 Organisations or venues

Indigenous adults were less likely than non-Indigenous adults to have participated in any sport or physical activity through an organisation or venue (59% and 63% respectively); however, a higher proportion did *all* their sport and physical activity through organisations or venues (25%, compared with 20% for non-Indigenous adults).²⁰ In contrast, 43% of non-Indigenous adults split their sport and physical activity sessions, sometimes participating through organisations or venues and sometimes not.²¹ The proportions are shown in Figure 10.

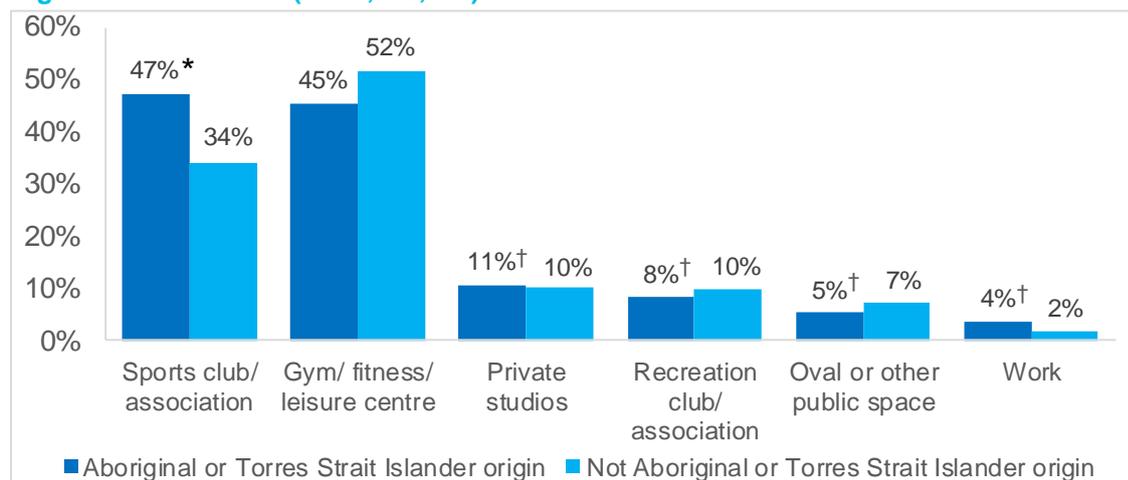
Figure 10 – Participation by Indigenous and non-Indigenous adults in sports and physical activities through organisations/venues (N=16,317,775)



Base: Participating adults

A statistically significant higher proportion of Indigenous adults than non-Indigenous adults participated through sports clubs or associations (47% and 34% respectively), as shown in Figure 11. Gyms and fitness or leisure centres were attended by a higher proportion of non-Indigenous adults (52%, compared with 45% of Indigenous adults).

Figure 11 – Participation by Indigenous and non-Indigenous adults through types of organisations/venues (N=10,272,959)



Base: Adults who participated through organisations/venues

²⁰ This difference was statistically significant at the 95% confidence level.

²¹ This difference was statistically significant at the 95% confidence level.

4 Indigenous Australians' participation in sport and physical activity

This section uses the AusPlay data to explore the sport and physical activity participation of different demographic segments within the Indigenous population, and compares AusPlay results with other, external findings, where possible. Participation by age and sex is examined first, followed by participation by geographic area, then a comparison of households with and without children under 15 years old.

4.1 Indigenous participation by age and sex

Although overall participation rates were not significantly different for Indigenous men and women, they were slightly lower for men, on the whole. Women who had participated tended to participate more often than men, but participating men tended to have spent longer in their last session of sport or physical activity. For children, girls appeared to have lower participation rates than boys.

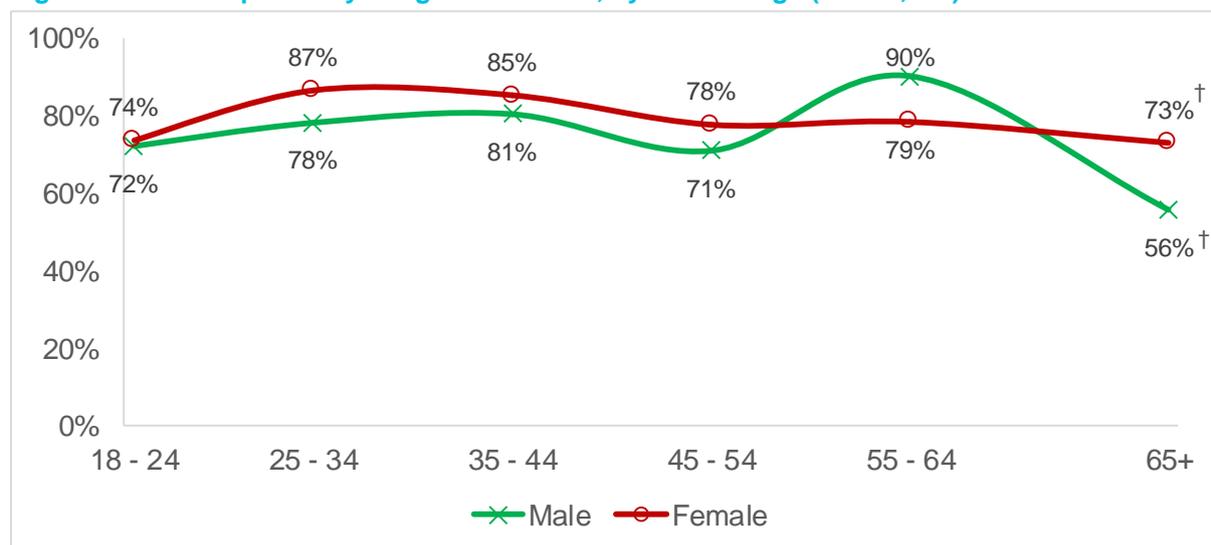
Recreational walking and fitness/gym were the top two activities for men and women from all adult age groups.

For Indigenous adults, there were no clear patterns of participation in organisations or venues, or in sports clubs and associations, by age or sex.

Adults

There were no significant differences in the participation rates of Indigenous men and women, as shown in Figure 12. Men's rates were slightly lower than women's for all age groups, except 55-64 year olds.

Figure 12 – Participation by Indigenous adults, by sex and age (N=399,568)



Base: Indigenous adult population

These AusPlay results differed somewhat from previous ABS statistics from 2007-08, which found that Indigenous men had slightly higher sport and physical activity rates than Indigenous women, and that participation rates for both adult sexes decreased with age, from the 15-24 year old age group, to the 45 years and over age group (ABS 2010a).

Stronach, Maxwell and Taylor allude to how the context and phrasing, when asking about participation in physical activity, could alter the interpretation of the concept by some Indigenous women, and perhaps influence the outcomes. They found that Indigenous women experience sport

and physical activity “in their own uniquely complex way,” and that while “the research supports the statistical evidence that many Indigenous women do not participate in [organised sport and physical activity] ... physical activity was identified as important to these women as a part of cultural and community activities, and therefore the participation rates may be quite different to those reported ABS figures.” (2016)

Some hypotheses for the differences in ABS and AusPlay findings on women’s participation rates, in relation to men’s, include:

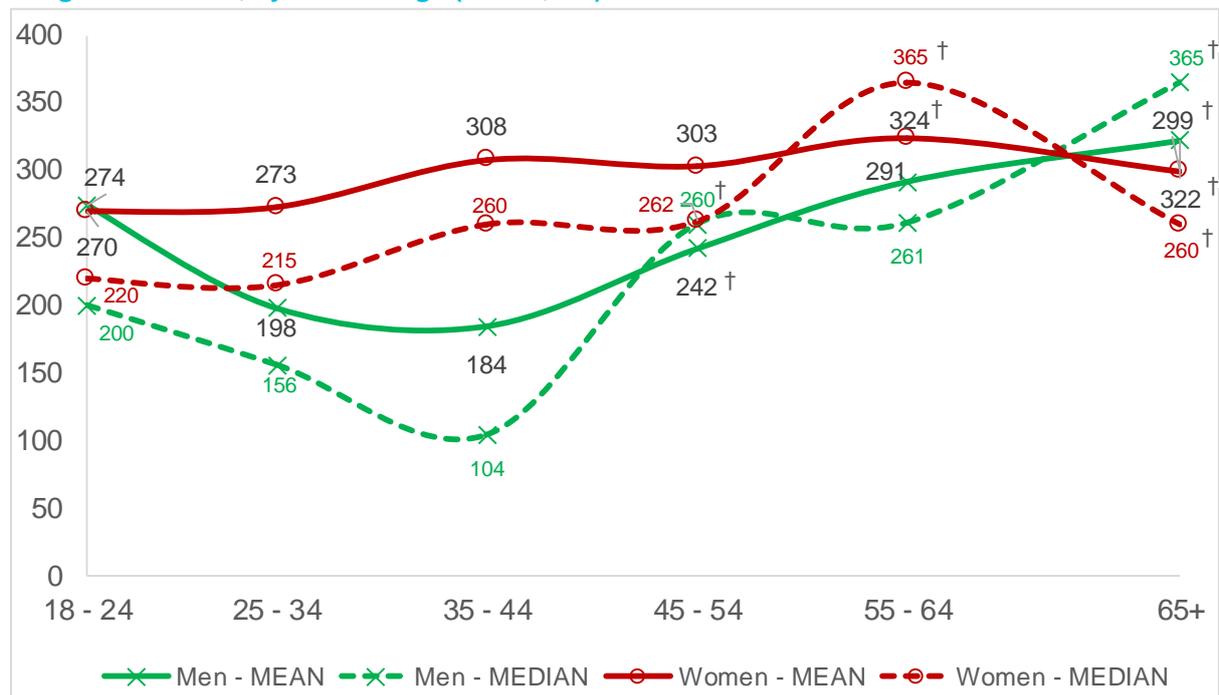
- sample error in AusPlay data, skewing the results for Indigenous women, which may change over time, as more AusPlay data is accumulated
- a comparative increase in Indigenous women’s participation between 2007-08 and 2015-16
- differences in how respondents interpreted the AusPlay and ABS questions, and what they therefore thought to include in their responses.

The AusPlay survey focuses entirely on sport and physical activity, defining this from the beginning as “any physical activities for sport, exercise or for recreation” (where “sport”, “exercise” and “recreation” are rotated, so that respondents hear these in different orders). The ABS survey covered a range of topics about, among other things, health, employment, crime and family. Questions about sport and physical activity were asked under the *Language and culture* section, as part of the *Involvement in social activities*, introduced with, “The next few questions are about any physical, sporting, community or social activities that <you have/(child’s name) has> been a part of.” There were 17 response categories coded (including a range of activities such as attending native title meetings, or church, or cafes, or libraries or museums), one of which was “took part in sport and physical activities” (ABS 2008). It is possible that the differences in question context and phrasing had different effects on men and women.

From the AusPlay data, women were found to have participated more often than men, having done 291 sessions of sport or physical activity on average in the last year, while men had done an average of 239 sessions for the same time period (the medians were 235 and 192 respectively). Women recorded higher medians for all age ranges until around 65 years old, as shown in Figure 13, with the greatest differences in the frequency of participation between the sexes occurring around 35-44 years old.²²

²² Note that the data is considered less reliable for the older age groups, and should be used with caution.

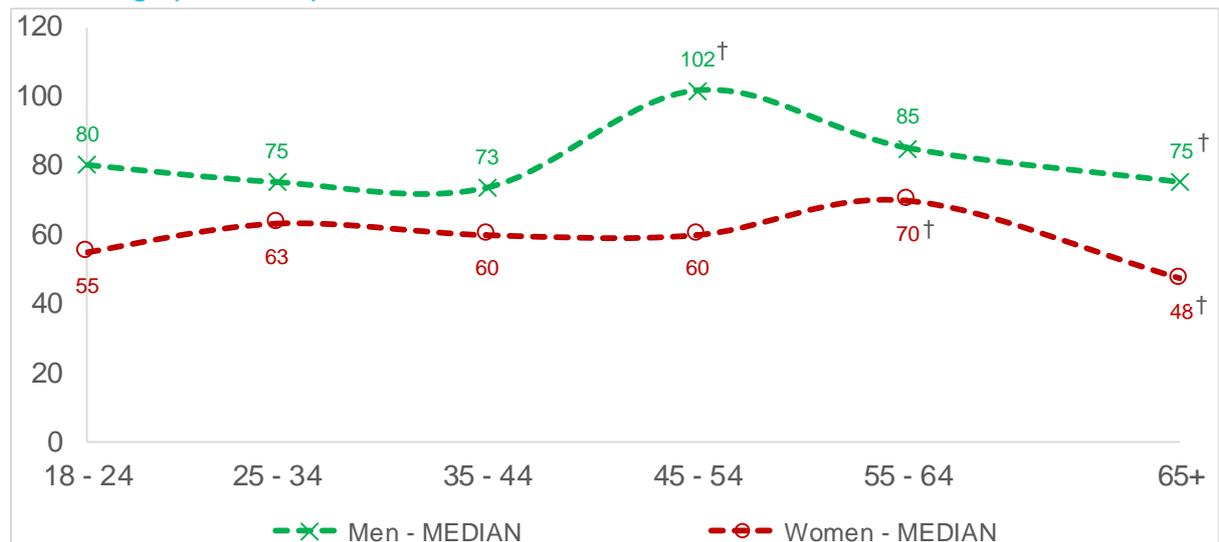
Figure 13 – Mean and median participation frequency (number of sessions per year) for Indigenous adults, by sex and age (N=314,606)



Base: Indigenous adult participants

In contrast, it was men who had participated for longer session times, with a median duration of 75 minutes for their last session of sport or physical activity, compared to women’s median duration of 60 minutes.²³ Men’s median durations remained consistently higher than women’s at all ages, as shown in Figure 14.

Figure 14 – Median participation duration for Indigenous adults (minutes of last session), by sex and age (N=314,606)



Base: Indigenous adult participants

There were only mild changes in preferences for type of activity by age. Walking, which was included in the top three activities for all age groups, became the most common activity for adults over 35

²³ Average durations were skewed by some high outliers, as described in the previous section, on page 14.

years old, replacing fitness/gym, which moved to second place for these older adults. Swimming was the third most popular activity for the youngest, and older adults, while athletics, track and field activities (including jogging and running) was more common in the middle adult ages of 25-44 years old. Table 14 lists the top three activities for each of the age groups.

Table 15 lists the top ten activities for men and women. The men's top ten included cricket, Australian football, recreational fishing, rugby league and golf, while higher proportions of women had participated in basketball, netball, yoga, pilates and touch football.

Table 14 – Top 3 activities for Indigenous adults, by age (N=314,606)

Age group	Top activity	Second top activity	Third top activity
18 - 24 years	Fitness/ gym	Walking (recreational) [†]	Swimming [†]
25 - 34 years	Fitness/ gym	Walking (recreational)	Athletics, track and field (incl. jogging/running) [†]
35 - 44 years	Walking (recreational)	Fitness/ gym [†]	Athletics, track and field (incl. jogging/running) [†]
45 - 54 years	Walking (recreational)	Fitness/ gym [†]	Swimming [†]
55 - 64 years	Walking (recreational)	Fitness/ gym [†]	Swimming [†]
65 years+	Walking (recreational) [†]	Fitness/ gym [†]	Swimming ^{††}

Table 15 – Top 10 activities for Indigenous adults, by sex (N=314,606)

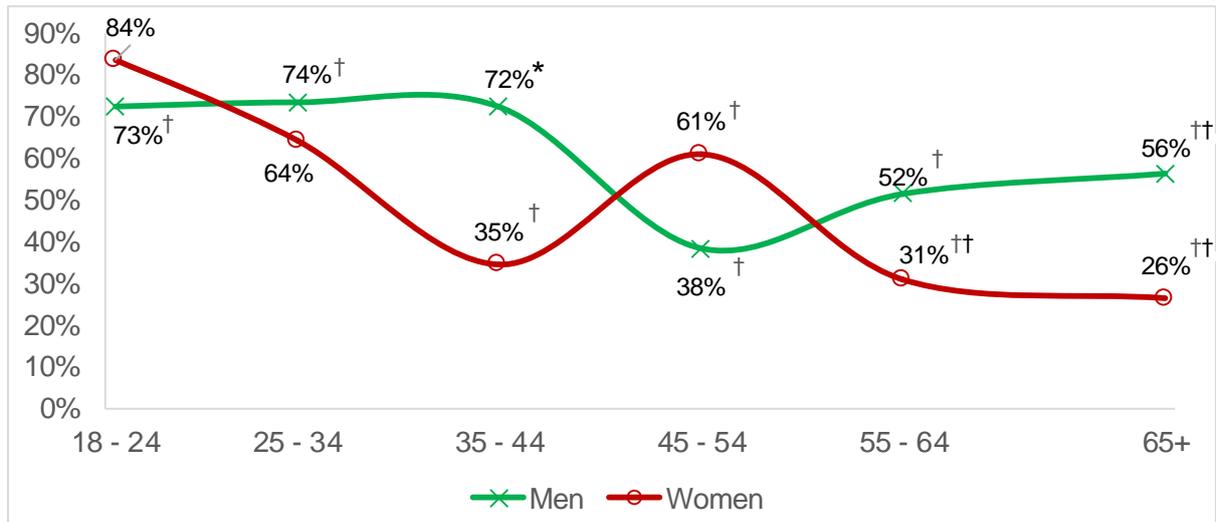
Ranking	Men (% of participants)		Women (% of participants)	
1	Walking (recreational)	35%	Walking (recreational)	61%
2	Fitness/gym	33%	Fitness/gym	38%
3	Cycling	14% [†]	Swimming	17%
4	Athletics, track and field	13% [†]	Athletics, track and field	14%
5	Swimming	12% [†]	Basketball	8% [†]
6	Cricket	10% [†]	Netball	8% [†]
7	Australian football	8% [†]	Cycling	7% [†]
8	Fishing (recreational)	8% [†]	Yoga	6% [†]
9	Rugby league	7% [†]	Pilates	6% [†]
10	Golf	7% [†]	Touch football	6% [†]

Figure 15 shows the proportion of men and women in each age group who did some, or all, of their sport or physical activity through organisations or venues. Figure 16 shown the proportions of organisation/venue users who participated specifically through sports clubs or associations, for at least some of their activities. Although the proportions fluctuate and the data should be viewed as indicative only (being based on small estimates), there is a spike in male participants' use of sports clubs and associations around the ages of 35-44 years old,²⁴ and a statistically significant difference

²⁴ The activities that Indigenous 35-44 year old men most commonly participated in through sports clubs and associations were cricket, football/soccer and golf. For cricket and football/soccer, Indigenous men's participation rose with age from 18-24 years to 35-44 years, then declined for older age groups. Indigenous men mainly participated in golf between the ages of 35 and 64, with participation peaking at 55-64 years old; however, some did continue to participate in golf at 65 years or older.

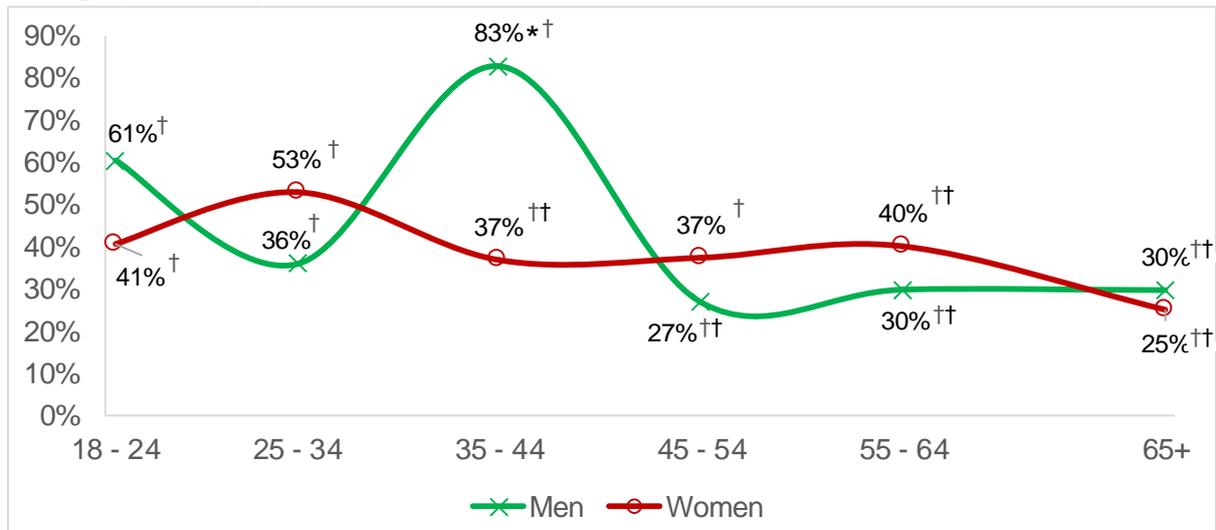
in men's and women's participation through both organisations and venues generally, and sports clubs and associations specifically, at this age range.

Figure 15 – Participation by Indigenous adults through organisations or venues, by sex and age (N=314,606)



Base: Indigenous adult participants

Figure 16 – Participation by Indigenous adults through sports clubs or associations, by sex and age (N=186,066)



Base: Indigenous adults who participated through organisation/venues

Children with at least one Indigenous parent

As shown in Figure 3 on page 16, the organised, outside school hours, sport and physical activity participation rates for children with at least one Indigenous parent rose from 68% for 5-8 year olds, to peak at 97% for 9-11 year olds, before declining again to 62% for 12-14 year olds. Girls had a lower overall participation rate than boys (49% for girls, 72% for boys).

The sample of children with one known Indigenous parent was too small to be able to analyse by further segmentation.

As mentioned in Section 3.1, ABS data corroborates the AusPlay finding that Indigenous girls tended to participate less than Indigenous boys, and contains additional age by sex detail which shows that in

ABS data, girls' participation rates dropped after the age of eleven, while boys' continued to rise to the age of 12-14 years.

Macniven, Hearn et al's study of 359 Indigenous and 637 non-Indigenous 13-17 year olds in New South Wales also found that adolescent girls were less active than adolescent boys. In addition, they found that the difference between the sexes was more pronounced for Indigenous adolescents than for non-Indigenous adolescents (2016).

4.2 Indigenous participation by geographical area

The small sample obtained for Indigenous respondents within different geographical areas and the issues related to identifying remoteness categories within the AusPlay data, as detailed in the *Methodology* section of this report, constrained analyses by state/territory or remoteness category and meant the preferred analyses by remoteness category within state/territory was not possible. This section provides a snapshot of participation rates, participation through organisation/venues, and sport club and association use, by state/territory, then by remoteness category. Note that data for South Australia, the Australian Capital Territory, the Northern Territory and Tasmania, and for remote and very remote areas, should be used with caution, especially for participation through sport club and associations.

States and territories

As shown in Figure 17, Figure 18 and Figure 19, Indigenous adults in the Australian Capital Territory appear to have had the highest proportional participation rates and participation through organisations or venues (93% and 72% respectively), but the lowest participation through sport clubs and associations when they did participate through organisations or venues (27%).²⁵ Conversely, Indigenous adults from the Northern Territory appear to have had the lowest participation rates and the lowest use of organisations or venues when they did participate (57% and 25% respectively), but one of the highest rates of participation specifically through sports clubs and associations (65% (alongside Indigenous Tasmanians (67%)).

Gray, Macniven and Thomson also found participation rates to be highest in the Australian Capital Territory, when analysing ABS data for Indigenous adults aged 15 years and over; although they found the lowest rates were South Australia's. These authors noted that the greatest discrepancy between male and female participation rates occurred in the Northern Territory, where men participated over twice as much as women (2013).

The same study found that participation rates for Indigenous children, aged 4-14 years, were highest in Tasmania and the Australian Capital Territory, and lowest in the Northern Territory (2013).

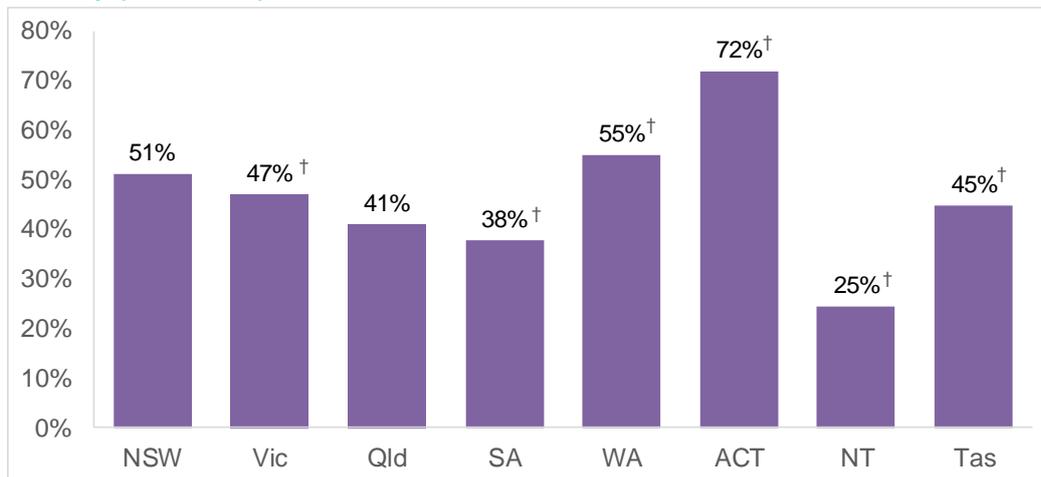
²⁵ Sixty percent (60%) of Indigenous adults from the ACT who participated through organisations or venues did so through gyms, fitness or leisure centres, 20% used personal trainers or coaches, 20% used Educational institutions and 19% participated through organised events.

Figure 17 – Participation by Indigenous adults, by state or territory (N=399,568)



Base: Indigenous adult population

Figure 18 – Participation through organisation or venues by Indigenous adults, by state or territory (N=314,606)



Base: Indigenous adult participants

Figure 19 – Participation through sport clubs and associations by Indigenous adults, by state or territory (N=186,006)

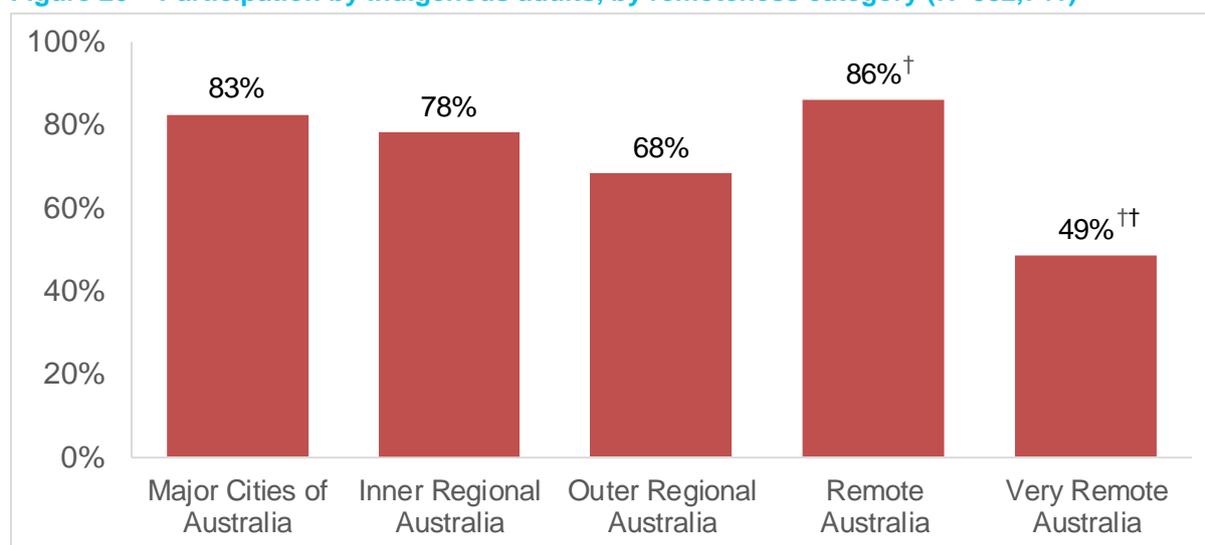


Base: Indigenous adults participating through organisations/venues

Remoteness categories

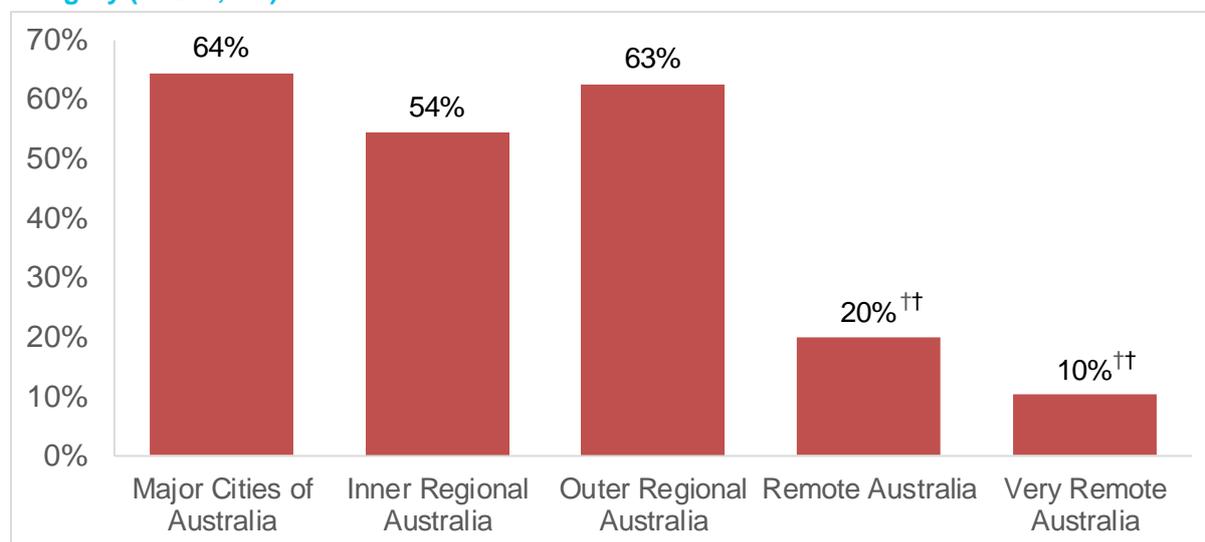
Figure 20, Figure 21 and Figure 22 suggest that the participation rates of Indigenous adults may be lowest in outer regional and very remote areas of Australia (68% and 49% respectively). Participation through organisations or venues and through sports clubs and associations appears to drop in remote and very remote regions (although the data for this is not considered to be of a reliable size, and deriving remoteness category for AusPlay respondents was problematic, as discussed in the *Methodology* section, on page 8, of this report).

Figure 20 – Participation by Indigenous adults, by remoteness category (N=382,741)



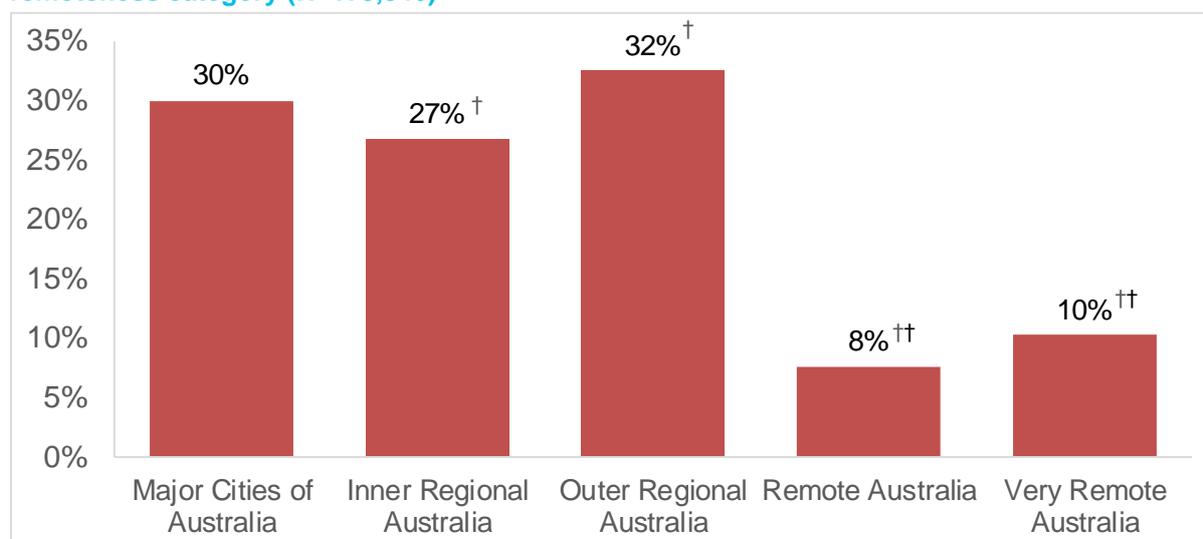
Base: Indigenous adult population (with valid postcodes)

Figure 21 – Participation through organisation or venues by Indigenous adults, by remoteness category (N=298,893)



Base: Indigenous adult participants (with valid postcodes)

Figure 22 – Participation through sport clubs and associations by Indigenous adults, by remoteness category (N=175,546)



Base: Indigenous adults (with valid postcodes) who participated through organisations/venues

Other studies have found that participation rates declined as remoteness increased, both for the broader Australian population (Eime et al 2015) and for Indigenous adults (Gray, Macniven and Thomson 2013). ABS data showed that the opposite was the case for children aged 4-14 years participating in physical exercise, in a comparison of remote and non-remote for boys and girls (boys: 87% remote, 75% non-remote; girls: 80% remote, 67% non-remote) (2010b).

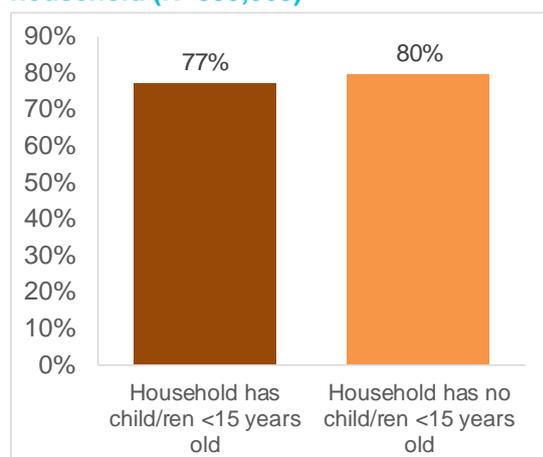
For the broader Australian population, Eime et al also correlated an increase in participation in many types of organised physical activities (often traditional team sports) with increasing remoteness. Some other literature discussed the (unquantified) importance of a sports club or association, or an organised sports program, to a remote or regional Indigenous community, especially when it is able to regularly bring the community together in a largely positive social setting (Judd and Butcher 2015; Nelson, Abbott, and Macdonald 2010; Rynne and Rossi 2012), and there were mentions of team sports, and young and small league competitions being popular with children in many remote Indigenous communities (Thompson, Chenhall, Brimblecombe 2013). However, there was little evidence to strongly support, or refute the findings by remoteness category suggested by the AusPlay data.

4.3 Indigenous participation by whether children in household

A marginally lower proportion of Indigenous adults who lived with children under 15 years old participated in sports and physical activities, in comparison to adults who lived in households with no children under 15 years old, as shown in Figure 24 (77%, compared with 80%). This means that the presence of children under 15 in the household has little effect on participation.²⁶

²⁶ There were also no significant differences in participation rates by sex within households without or without children under 15 years old.

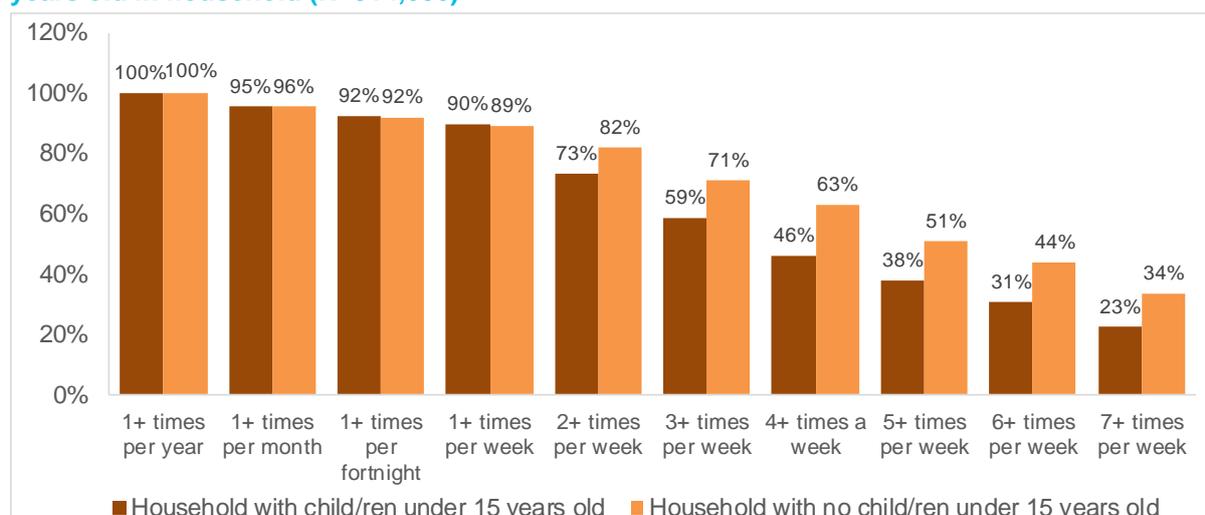
Figure 23 – Participation by Indigenous adults, by whether child/ren under 15 years old in household (N=399,568)



Base: Indigenous adult population

While similar proportions of both groups of participating adults participated at least once a week, a lower percentage of adults from households with young children participated twice a week or more (73%, compared with 82% of adults from households with no children), and only 23% participated at least daily, compared to 34% of adults from households with no children. The decline in the relative proportions of adults participating at higher frequencies can be observed in Figure 24.

Figure 24 – Frequency of participation by Indigenous adults, by whether child/ren under 15 years old in household (N=314,606)



Base: Indigenous adult participants

The median duration of the last sport or physical activity session, however, was slightly higher for adults from households with at least one child under 15 years old, at 70 minutes, compared to 65 minutes for adults from households with no children under 15 years old.

The top ten activities for adults from households with children under 15 years old, and those without, are listed in Table 16. Although the top two activities were the same for each group, the proportion of adults from childless households who participated in the second ranked activity, fitness/gym, was significantly higher than the proportion from households with children (32%, compared with 19%). Touch football, football/soccer and surfing were in the top ten activities only for adults from households with children, and had a significantly higher proportion of participants from this group (8%

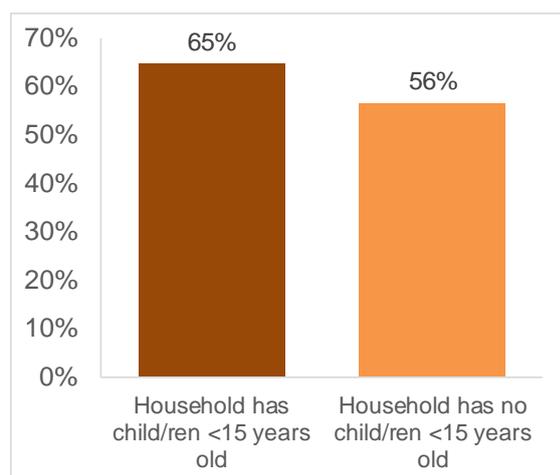
compared to 2% for touch football, 7% compared to 1% for football/soccer, and 7% compared to 1% for surfing).

Table 16 – Top 10 activities for Indigenous adults, by whether child/ren under 15 years old in household (N=314,606)

Ranking	Adults from household with child/ren under 15 years old (% of participants)		Adults from household with no child/ren under 15 years old (% of participants)	
1	Walking (recreational)	35%	Walking (Recreational)	40%
2	Fitness/gym	19%	Fitness/Gym	32%*
3	Athletics, track and field	13%†	Swimming	12%
4	Swimming	10%†	Cycling	10%
5	Touch football	8%*†	Athletics, track and field	10%
6	Basketball	7%†	Basketball	5%†
7	Football/soccer	7%*†	Cricket	4%†
8	Cricket	7%†	Golf	4%†
9	Surfing	7%*†	Australian football	4%†
10	Cycling	5%†	Rugby league	3%†

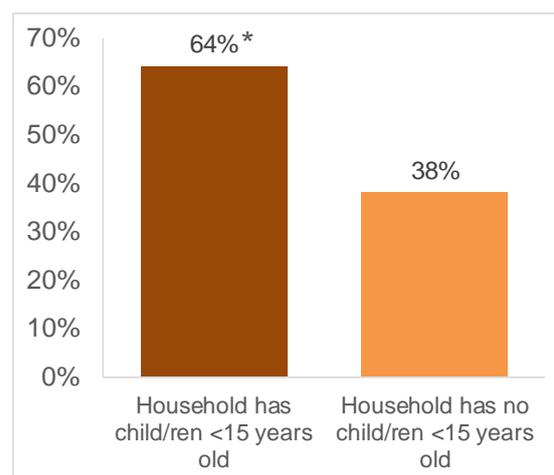
Figure 25 and Figure 26 show that a lower proportion of adults from childless households participated in sports or physical activities through organisations or venues (56%, compared with 65% of adults from households with children), and of those who did, only 38% participated through sports clubs or associations, compared with 64% of adults from households with children.²⁷

Figure 25 – Participation through organisation or venues by Indigenous adults, by whether child/ren under 15 years old in household (N=314,606)



Base: Indigenous adult participants

Figure 26 – Participation through sport clubs and associations by Indigenous adults, by whether child/ren under 15 years old in household (N=186,066)



Base: Indigenous adults who participated through organisations or venues

²⁷ This difference was statistically significant at the 95% confidence level.

5 Segments within the Australian Indigenous population who are participating more or less than others

The size of the AusPlay sample of Aboriginal and Torres Strait Islander peoples inhibited statistical interrogation of the data for possible relationships between behaviours and demographic indicators, or further breakdowns by combinations of demographics to explore, for example, potential differences between males and females within remoteness categories or states and territories, or differences between populations within the remoteness categories within states and territories. This section summarises the segments that were found in Section 3 and Section 4 to exhibit comparatively low or high participation rates.

The AusPlay data indicates that the following segments within the Indigenous population may be participating in sports and physical activities at lower rates than their counterparts:

- men (proportionally lower than women or non-Indigenous men)²⁸
- young women aged 18-24 (lower than older women, except 65+, and significantly lower than non-Indigenous women of the same age)
- adults over 64 years old (lower than younger adults and lower than non-Indigenous adults of the same age)
- girls (lower than boys and non-Indigenous girls)
- adults in the Northern Territory (lower than adults in other states and territories)
- adults in outer regional and very remote areas (lower than adults in other remoteness categories)²⁹
- adults in households with child/ren under 15 years (slightly lower than adults with no children under 15 years, but also at lower frequencies of participation).

The following segments displayed notably higher proportions of participation:

- children aged 9-11
- adults in the Australian Capital Territory.

²⁸ Note that this is contradicted by some other sources which show proportions for Indigenous women to be lower than Indigenous men.

²⁹ This is based on less reliable data and should be used with caution.

6 Perceived benefits of sport participation

This section summarises recent discourse on the benefits that sport and recreational physical activities bring to Indigenous communities, specifically the perceived positive influences of participation on health and wellbeing, education, crime or anti-social behaviour and social capital. Other benefits of participation mentioned in the literature, and the role played by sports clubs and associations, are also briefly discussed. The section begins with some contextual issues which were raised in the recent literature on these topics.

6.1 Context

It is widely accepted that physical activity is beneficial to human beings and that sedentary lifestyles are not generally conducive to good health. Ideal amounts, types and levels of intensities may vary between individuals, however, it is commonly agreed that increasing participation in physical activity within a population will lead to positive outcomes. These positive outcomes are assumed, in principle, for the broader Australian population and any subset, such as the Australian Indigenous population. While it would be difficult to argue that physical activity has intrinsically negative effects, some authors caution against expecting too much from a physical activity program, or positioning sports or physical activity as a panacea to social and health problems (Evans et al 2015; Oliver 2014; Rossi 2015; Sushames, van Uffelen, Gebel 2016). Benefits can be obtained, but the sports or physical activity take place within a particular social and historical context which limits or enables the ability to achieve benefits, and influences the extent of the benefits and even how they are conceptualised or measured.

When discussing the perceived benefits of sport or recreational physical activity for Aboriginal and Torres Strait Islanders, it is important to note that this discussion takes place against a backdrop of historical and current social and economic inequalities for these peoples, and that their current health status, which is concerningly lower than the general Australian population's, is linked to their experiences within this setting (Cairnduff 2001; Stronach 2016; Young 2015).

Much of the literature on the benefits of sport and physical activity for Indigenous Australians focuses on the health benefits. This is likely to be because physical activity inherently involves bodily movement, which has a direct physiological effect which can be quantified with standardised medical and biological measurements. It may also partly be because the national *Closing the Gap* campaign and its associated initiatives focus on measured health benefit outcomes. This campaign, and much of the discussion on Indigenous health and Indigenous levels of physical activity (including in this report), provide a framework in which Indigenous health is compared to non-Indigenous, or target health. This is an arguably effective way of highlighting differences and inequalities and effecting positive change, however, it is worth acknowledging that it too contributes to what Bamblett refers to as the *deficit discourse*, which shapes our perceptions of participation (or otherwise) in physical activity and, by extension, our perceptions of the benefits of sport and physical activity programs (2013b).

Another limitation of discussions of the benefits of sport or physical activity participation to Indigenous Australians, such as the one in this report, is that it is not practical or possible to look individually at the differing benefits for each of the many communities within the varied nations of Aboriginal and Torres Strait Islander peoples. Generalisations are inevitably made.

Finally, different types of benefits are summarised separately below, however many authors emphasise the links between different benefits, and the way other indirect benefits may be especially hard to identify or quantify, or take time to become apparent (Doyle et al 2013; McCoy, Ross, Elston 2012; Oliver 2014; Rynne 2016). These themes are revisited in Section 10, when the effectiveness of programs and products is addressed.

6.2 Health and wellbeing

Physiological wellbeing, from increased fitness and the countering of physical inactivity, is usually the first and most frequently cited benefit of Indigenous Australians participating in sport and physical activities. That this will be a benefit is generally accepted as a *given*, or a *reasonable assumption* (Bailey, Cope, Parnell 2015; Cairnduff 2001; Dalton et al 2015; Evans et al 2015). The degree of this benefit as a result of an introduced sport or physical activity program is less often measured or supported by documented evidence (Oliver 2014; Otim et al 2015; Pressick et al 2016; Rynne 2016), but there have been concerted efforts to review programs and activities delivered to Indigenous Australian, to build body of evidence for health benefits (Canuto et al 2017; Muir, Dean 2017; Ware 2013). As physical inactivity has a disproportionately larger impact on Indigenous Australians (Macniven, Hearn et al 2016; Young 2015), any reversal of this would be a considerable benefit.

The perceived specific or follow-on benefits of improved physiological health are significant and include:

- a reduction in the number of overweight or obese people, mitigating illness and chronic disease, especially heart disease and diabetes (Bailey, Cope, Parnell 2015; McCoy, Ross, Elston 2012; Pressick et al 2016; Sun, Buys 2013; Young 2015)
- a stronger musculoskeletal system, for example, a reduction in injury and falls as well as protection against conditions of bone health such as osteoporosis and arthritis (Young 2015)
- cardiovascular improvements (Pressick et al 2016)
- a reduction in negative health behaviours like smoking and drinking, or increases in healthier lifestyles and diets (Evans et al 2015; Gray, Macniven, Thomson 2013; Ware, Meredith 2013)
- better hygiene and reduced skin infections (specifically from swimming in pools, for remote communities) (Hendrickx et al 2016).

A range of expected mental health and socio-psychological benefits are said to include:

- positive experiences, contributing to emotional wellbeing and reduced risk of mental illness or suicide (Dalton et al 2015; Dudgeon et al 2014; Evans et al 2015; SCRGSP 2016; Standing Committee on Aboriginal and Torres Strait Islander Affairs, House of Representatives 2013)
- spiritual health (Doyle et al 2013; Otim et al)
- reductions in depression, stress and anxiety (Young 2015)
- increases in life skills, or social skills, or empathy, or tolerance (Oliver 2014; Peralta et al 2014; Rynne, Rossi 2012; Standing Committee on Aboriginal and Torres Strait Islander Affairs, House of Representatives 2013)
- increases in self-control, or self-reliance, or confidence (Otim et al 2015; Pressick et al 2016; Rynne, Rossi 2012)
- increases in self-esteem or self-worth (Cairnduff 2001; Neesham, Garnham 2012; Thompson, Chenhall, Brimblecombe 2013)
- a stronger sense of identity (McCoy, Ross, Elston 2012; Oliver 2014).

While causality was not explored in their study, Macniven, Hearn et al found that confidence in Indigenous 15-17 year olds in New South Wales (feeling confident always/often/sometimes, as opposed to rarely/never) was significantly correlated with higher levels of physical activity. Although it is not clear whether the higher levels of confidence were a *benefit* of higher levels of physical activity,

or a *contributor* (an enabler or driver) to the higher levels of physical activity in this group of Indigenous adolescents, the authors found a clear association between the two factors (2016).

6.3 Education and employment

There are some anecdotal claims that children's and youth's participation in sports or physical activity programs can lead to better behaviour and attendance at school, enhancing educational engagement for those participants (Peralta et al 2014; SCRGSP 2016); however the majority of proven educational benefits for sports or physical activity program participants (derived from measures such as school attendance and retention rates) were associated with programs that deliberately linked education and sports participation through schools (and these tended to primarily leverage the educational institution for physical activity participation, with increases in school engagement a secondary benefit) (Dickson 2009; Joint Select Committee on Northern Australia 2014; Macgregor et al 2015; Macniven et al 2017; McCoy, Ross, Elston 2012; Neesham, Garnham 2012; SCRGSP 2016).

A *no-school-no-pool* policy was also introduced for children in some remote communities, and was said to produce higher school attendance in some (but not all) of the communities (Hendrickx et al 2016).

Sport and physical activity participation was also sometimes credited with leading to better employment prospects in the longer-term (partially because of improved education, but also due to the life and personal skills mentioned above) (Bailey, Cope, Parnell 2015; Doyle et al 2013; McCoy, Ross, Elston 2012).

6.4 Reduced crime or anti-social behaviour

It is argued by some that participation in sport and physical activities by Indigenous Australians reduces:

- boredom (NASCA [undated]; Rynne, Rossi 2012)
- excessive or dangerous risk-taking (Nelson, Abbott, Macdonald 2010; Rossi 2015)
- vandalism (Cairnduff 2001)
- anti-social behaviour (Evans et al 2015; McCoy, Ross, Elston 2012; NASCA [no date])
- participation in crime, in general (Nelson, Abbott, Macdonald 2010; Standing Committee on Aboriginal and Torres Strait Islander Affairs, House of Representatives 2013; Stronach, Maxwell, and Taylor 2016; Ware, Meredith 2013).

Although there was a suggestion that sport and organised physical activity could provide perpetrators with a convenient opportunity to get together to plan crime (Nelson, Abbott, Macdonald 2010), the general logic used by those who posited this benefit was that the activity gave participants something positive and healthy to do, reducing both the opportunities and the desire to become involved in anti-social behaviours.

6.5 Social capital

That group, organised sports and physical activities draw Indigenous communities together, creating a form of social capital, whether in an urban, regional or remote setting, is a common theme in the literature. Sports and organised physical activities are viewed as tools for facilitating community development, because of "increased social cohesion" (Cairnduff 2001; Rossi 2015), connecting people across generations (Pressick et al 2016), and linking individuals, family, community and "the real world" (Rynne 2016). They are said to act as social hubs (Hendrickx et al 2016), helping the "processes of belonging, trust and inclusion, leading to "increased community identity, social coherence and integration" (Oliver 2014).

In Indigenous health literature, it is often said that an indigenous person's health cannot be seen in isolation, it is not simply the absence of disease, but also depends on the wellbeing of the community and the ability for the individual to participate in community activities (Otim et al 2015). The relationship between Indigenous people's individual wellbeing and cultural or community connectedness has been explored by Young, and many others. Young questions the direction of causality between participation in physical activity and individual wellbeing and the individual's community involvement or cultural connectedness; regardless of this, the strong correlation between the two is widely recognised (Young 2015; Gray, Macniven, Thomson 2013; Hoeber 2010; Judd, Butcher 2015; Macniven et al 2014; Macniven, Hearn et al 2016; SCRGSP 2016). (Perhaps they can each function to positively reinforce the other, rather than one mainly driving the other.) This means that the potential for social capital benefits to be derived from sports and physical activities is generally regarded as particularly valuable and significant for Indigenous peoples.

6.6 Other benefits

Some other benefits of Indigenous participation in sports or organised, group physical activities mentioned in the literature include:

- cross opportunities for other service delivery
- economic benefits
- reconciliation in the wider community.

Some authors have remarked on the way the regular, scheduled gathering of Indigenous sport participants can provide an opportunity for other service providers to reach targeted audiences, in much the same way that schools can provide opportunities for reaching children. In particular, they can be a space and time in which medical providers can deliver health services to those who may typically otherwise hard to reach (for example, young men) (Doyle et al 2013; McCoy, Ross, Elston 2012; Thorpe, Anders, Rowley 2014).

Evans et al reported that the National Indigenous Sport and Active Recreation Program (ISARP) claimed to contribute economically by opening up employment opportunities, for sport and recreational officers, for example (2015). When proposing that sport can be viewed as a capital-building investment, Bailey, Cope and Parnell postulated that the personal skills obtained through sport participation are a form of financial capital, in that they increase the participants' earning power and job performance, productivity, and attainment (2015). Stronach Maxwell, and Taylor mentioned that Indigenous women who participated in their study included being a "pathway out of poverty" as a positive outcome from sports and physical activity participation, however they did not elaborate on how, in any detail (2016).

If racism or race-relations are discussed, they are usually discussed as extremely complex issues which have been experienced in a variety of forms, with a range of impacts for different individuals in different sport and physical activity settings. In Thomson, Darcy and Pearce's article examining the management of culturally inclusive sport programs using Ganma theory, from the Yolngu community of Yirrkala in North East Arnhem Land (which conceptualises the meeting and combining of two cultures, as when fresh and sea water rivers meet and "mutually engulf each other on flowing into a common lagoon"), the role that sports programs can play in the promotion of positive interactions between Indigenous and non-Indigenous cultures is discussed. Although the sports organisations included in the study did not view themselves as advocacy bodies, focusing primarily on the provision of healthy lifestyle promotion and sporting opportunities, the authors state, "as consistent with the literature, sports development programmes that promote inclusive opportunities for Aboriginal and Torres Strait Islanders can have a secondary outcome of promoting reconciliation in the broader community" (2010). Doyle et al agreed, giving an example of an Indigenous sports club which they

say allows participants to identify with their culture and engages with mainstream community in a way that promotes mutual respect: “It promotes togetherness, inclusion, reconciliation, and Aboriginal leadership in a setting that allows our identity to flow into and be recognised by other sporting clubs and the wider community” (2013).

6.7 Sports clubs and associations

All of the above benefits were specifically associated with sports clubs and associations by some authors, as well as being credited to sports and physical activities more generally. However, where the literature focused on Indigenous sports clubs, or sports teams with predominantly Indigenous participants, there was a particular emphasis on the sense of community, belonging, protection and safety obtained through the club and the personal “journeys” and stories and human learning undertaken there (Doyle et al 2013; McCoy, Ross, Elston 2012). Parnell and Hylton believed that substantial health benefits can be obtained from any level of non-professional sport and recreation clubs, regardless of whether or not they have the backing of a professional club (2016), and others lauded the “safe and culturally strengthening environment and ... positive social hub for the Aboriginal community” that can be provided by Indigenous sports clubs and sports teams (Thorpe, Anders, Rowley 2014).

Despite some clubs recently making deliberate and strategic attempts to increase girls’ and women’s involvement (Doyle et al 2013), the literature still contains far more anecdotes of positive Australian Indigenous male experiences of sports clubs, usually football clubs. In the context of a discussion on the barriers that complicate Indigenous women’s participation in sport, Stronach, Maxwell, and Taylor include a comment that “we [women’s sports organisations] suffer from all of things that women suffer from: a lack of respect, inequality, low levels of influence and economic power, and few women in decision making positions.” They note that when women have been involved in clubs, it has often been as an enabler rather than a participant, assisting children and other family members to participate, for instance, setting up barbecues or canteens (2016).

Oliver writes that “the effects of sports and recreation programs can be powerful and transformative,” but that more research is required to explore the role that “sport and sport clubs play in building social capital and community capacity.” He notes that clubs can be hugely beneficial, but can sometimes exclude individuals with insufficient ability or commitment, and that they may inadvertently isolate people from the community who are not interested in the sport or the club environment (2014). This is echoed by Doyle et al, who note that such an experience of exclusion of non-sport-oriented people can reinforce disempowerment, loss, failure or disappointment (2013). Judd and Butcher also write about the experiences of a remote Indigenous sports team, which had some drawbacks, despite all the myriad of positives aspects. The negatives were mostly to do with the lengths of time the participants had to spend away from their community, to practice and compete, which distracted from their community obligations at a time when they would otherwise would have been becoming community leaders (2015).

With some caveats about their limitations, on the whole, sports clubs and associations are considered to be positive enablers of the potential benefits of participation in sport and physical activity for Indigenous Australians.

7 Key drivers and barriers to participation

This section explores the key drivers (emotional, attitudinal and motivational), and the real and perceived barriers to participation in sport and physical activity within the Indigenous community. This informs Section 12, which addresses the opportunities and challenges for sports and physical activity providers, and discusses how programs can be tailored to meet the needs of Aboriginal and Torres Strait Islander peoples.

7.1 Key drivers

The key drivers of Indigenous participation were explored in the AusPlay data, and summarised from the recent literature.

Motivations – from AusPlay data

AusPlay respondents were asked, “*People participate in sport and physical activity for a variety of reasons. What are the reasons that you have done {ACTIVITY} over the last 12 months? Which other reasons? Any other reasons?*”

While the top three motives were the same for Indigenous and non-Indigenous participants, there were statistically significant differences in proportions for the first and third ranked motives:

- Physical health or fitness (71% for Indigenous, 80%* for non-Indigenous participants)
- Fun/enjoyment (42% for Indigenous, 44% for non-Indigenous participants)
- Social reasons (22% for Indigenous, 27%* for non-Indigenous participants).³⁰

Drivers – from the literature

When rationales for Indigenous people choosing to participate in sport and physical activities are discussed in the literature, the most common underlying reasons are:

- fun/enjoyment
- perceived need
- lack of barriers
- suitability (to personal requirements and preferences)
- external social support or encouragement.

It is the subjective detail, particularly of what constitutes “suitability”, that is more likely to be influenced by cultural identity, and, for Indigenous people, concepts of belonging, connectedness and togetherness ran through most of their motivations to participate.

As in the AusPlay data, enjoyment was frequently cited in the literature as a prime motivation, with Indigenous people preferring to participate (or volunteer) in sport or physical activity for fun, not as a chore, which “exercise” was often perceived as (Hunt, Marshall, Jenkins 2008; Hoeber 2010; McCoy, Ross, Elston 2012; Pressick et al 2016; Rossi, Rynne 2014). Associated with enjoyment were feelings of comfort, safety and belonging (Canuto et al 2013; Thorpe, Anders, Rowley 2014; Thompson, Chenhall, Brimblecombe 2013).

³⁰ No categories had significantly higher proportions for Indigenous respondents, as non-Indigenous respondents tended to give more multiple response answers than Indigenous respondents. Non-indigenous respondents gave an average of 2.6 responses to this question, compared to Indigenous respondents who gave an average 2.4 responses.

It was also found that a perceived need to participate, for example, for health, fitness or weight loss reasons could be a strong motivator (Canuto et al, 2013). Thompson, Chenhall and Brimblecombe found, of people they spoke to in the remote Central Desert region, that, “notably, it was only those already diagnosed with chronic disease or obesity (‘Balanda sicknesses’) that considered participating in, or were considered likely to participate in, ‘Balanda’ or ‘Kardiya’ (Central Desert word for non-Indigenous) exercise programs like a walking group” (2013).

Barriers to participation were often investigated in the literature, and acted as a strong negative influence on Indigenous people’s levels of participation in sport and physical activity. The types of barriers encountered are summarised in Section 7.2 of this report. When barriers were removed or lowered and “suitable” activities made available, people were naturally more likely to participate.

For many Indigenous participants, the sports and physical activities they found most appealing were group activities that were culturally appropriate (in many cases, for instance, this meant having gender-specific groups), reinforcing family and community connectedness and collectiveness (Gray, Macniven, Thomson 2013; Hoeber 2010; Macniven et al 2014; Nelson, Abbott, Macdonald 2010; Rynne, Rossi 2012). Similarly, when individuals had practical or emotional support or encouragement from family, friends, and even staff and other participants, they were more likely to be motivated to participate, and to keep participating (Canuto et al 2013). Having positive role models, in the form of older, more experienced participants from within the community, and professional Indigenous sportsmen and women, was also seen as motivating for young people and less experienced participants (Hunt, Marshall, Jenkins 2008; Stronach 2016).

Alongside the discussions of Indigenous people’s motivations for choosing to do sport or physical activities, there was also a recurring theme which highlighted what could be considered a driver of participation, if not a motivation to choose to participate. A number of authors wrote that physical activity was perceived by some Indigenous Australians as an integral part of their day, inseparable from their lives with their families and communities, and not something to be chosen as an independent activity, in and of itself (Stronach 2016). This was the case for males and for females, in remote areas where, for example, “for most Bininj and Yapa participants there were strong associations between physical activity, the land and work. ... There was a clear relationship between physical activity, work and family (Thompson, Chenhall, Brimblecombe 2013). It was also the case in urban areas, where both sexes, but especially women, associated physical activity with chores (Hunt, Marshall, Jenkins 2008). Nelson, Abbott and Macdonald provided an example where camping and fishing were not considered to be recreation or physical activities, by a study participant who saw them as “just something we did as a family.” These authors stress that, “there are diverse ways in which physical activity is understood” (2010).

The drivers for Indigenous people to participate in sport or physical activity appear to fall under an overarching general desire for wellbeing and cultural connectedness for themselves and their families. “Indigenous parents wanted their children to grow up healthy, but also with a strong sense of identity and culture (as an Indigenous person)” (Young 2015).

7.2 Barriers

Barriers to participation were also examined using the AusPlay data and the literature.

Barriers – from AusPlay data

The AusPlay survey asked respondents who had participated in sports or physical activities in the last twelve months whether they had dropped any of their activities, or were considering dropping any and, if so, why.

A similar percentage of Indigenous participants and non-Indigenous participants said they had dropped, or were considering dropping an activity (13% compared to 12% of non-Indigenous participants).

While Indigenous participants' reasons were not considered statistically reliable, due to small sample sizes, the most commonly categorised reasons were found to be *Poor health or injury* (mentioned by 3% of Indigenous participants who had dropped, or were considering dropping an activity) and *Not a priority (any more)* (2%).³¹ *Poor health or injury* was also one of the most common reasons given by non-Indigenous participants who had given up or were considering giving up an activity (2%); however, it was still statistically significantly less of a reason for non-Indigenous participants than Indigenous participants (with *Not enough time/too many other commitments* being the reason most commonly identified by non-Indigenous participants (3%)).

AusPlay respondents who had not participated in any sports or physical activities in the last twelve months were asked why they were no longer doing any (if they had indicated that they had participated in the year prior to the last twelve months), or why they were not doing any.

The top two reasons for not participating were based on data that was considered reliable and were the same for both Indigenous and non-Indigenous non-participants:

- *Not enough time/too many other commitments* (36% both Indigenous and non-Indigenous non-participants)
- *Poor health or injury* (28% Indigenous, 29% non-Indigenous non-participants).

There was slightly more variation in the proportions for lower ranked reasons, but nothing of statistical significance.

Barriers – from the literature

The main barriers to participation referred to in the literature fell broadly under the following categories:

- Other commitments, especially to family or community
- Personal illness or injury
- Financial
- Access
- Safety or comfort
- Different cultural construct of sport and physical activity
- Racism.

The first three listed barriers are fairly straight-forward. Existing commitments took up time and effort that restricted people from dedicating more time and effort to sport and physical activities, especially if the commitments were to family or community. Culturally, as discussed previously, a collective sense of family and community was generally prioritised over personal needs. Undertaking activities that were perceived as being for an individual's own benefit, rather than for the benefit of the family or community made some Indigenous people feel shame, and there were often negative community perceptions of exercising alone (Gray, Macniven, Thomson 2013; Macniven et al 2014). Personal injury or illness could prevent people from attending sport and physical activity sessions (Canuto et al,

³¹ The estimated number of indigenous adults with each of these reasons had a relative margin of error between 50% and 100% and should be used with caution.

2013; Hunt, Marshall, Jenkins 2008), and costs, either to enrol or enter venues, to travel (in remote areas), or for expensive equipment, could act as inhibitors to participation (Dickson 2009; Hunt, Marshall, Jenkins 2008; Judd, Butcher 2015; Macniven, Richards et al 2016; Oliver 2014; Stronach 2016).

Access was a barrier for Indigenous people in a variety of areas, especially in remote regions where facilities and choices of activities were limited, and distances made it more difficult to travel to participate in physical activity programs, or practice and compete in sports (Judd, Butcher 2015; Nelson, Abbott, Macdonald 2010; Tatz 2011). In small populations, especially ones with dwindling numbers, team activities could die out due to an insufficient number of players (Stronach 2016). Locations and timing could sometimes pose access difficulties for people living in urban areas too (Canuto et al 2013; Hunt, Marshall, Jenkins 2008; Oliver 2014). A reliance on cars, or difficulties accessing transport, were noted by a few people in different areas (Nelson, Abbott, Macdonald 2010; Rynne, Rossi 2012; Stronach 2016), and in an urban area, jurisdictional boundaries did not match the area in which the Indigenous community's members resided, meaning some community members living outside the program's designated geographical area were excluded from participating (Wilson et al 2012).

Some Indigenous people reported feeling unsafe as a barrier to participation, particularly in high crime areas (Nelson, Abbott, Macdonald 2010), and some said they were limited by feeling they were judged suspiciously when walking in the street (Hunt, Marshall, Jenkins 2008). Some young people from remote areas of northern Australia identified that climate-related factors, such as being too hot and sweaty, also restricted their ability to be physically active (Nelson, Abbott, Macdonald 2010).

Many of these cited barriers, particularly the financial, access and safety issues, could also be broadly associated with socio-economic disadvantage, and people from low socio-economic groups have generally been reported to have lower rates of participation in physical activity than people from high socio-economic groups (Macniven, Hearn et al 2016). The adolescents included in Macniven, Hearn et al's study, came from schools in disadvantaged areas, and low rates of physical activity were recorded for both Indigenous and non-Indigenous study participants. This study, however, also found that parental employment was significantly correlated with physical activity participation rates for Indigenous adolescents, and if their mother, especially, was unemployed, an Indigenous adolescent was far less likely to achieve a high level of physical activity (2016).

Feelings about what was culturally appropriate, or different cultural preferences for "the way physical activities are constructed and organised, the spaces they take place in and the times they occur," meant that some Indigenous people did not want to do certain sports and physical activities (Thompson, Chenhall, Brimblecombe 2013). In Thompson, Chenhall, and Brimblecombe's study, many participants said that "they and other adults did not, and would not, utilise physical activity programs or spaces, such as swimming pools, youth centres, basketball courts or walking groups." The authors comment: "This has been described by Indigenous academic Bronwyn Fredericks when she stated that Western-style exercise environments "do not necessarily fit within the contexts of the materiality of our bodies" (2013). Other Indigenous people said they did not participate in some activities because they considered them unsuitable, because they were not family-oriented, or not gender specific (Nelson, Abbott, Macdonald 2010; Macniven 2014).

Finally, there is the significant and complex issue of racism, which has historically been, and continues to be something that Indigenous people are often made to struggle with when participating in sports and physical activities (as elsewhere in life). Tatz and other authors detailed the Australian colonial history where Indigenous participation in sports took place against a background of racial atrocities and stereotyping. He wrote: "Sport is a litmus and litany of ambiguity in the Aboriginal experience: there has been both denigration and adulation, contempt and respect, calumny and celebration, tolerance and bigotry, inclusion and exclusion" (2011). Exclusions of Indigenous teams

from sports participation, such as from the Northern Territory Football League, occurred as recently as 2005, and racial sledging was widely accepted by non-Indigenous Australians as just “part of the game” of AFL until the early nineteen-nineties (Tatz 2011; Judd, Butcher 2016). Recent incidences in professional sport, such as the booing of Adam Goodes when he began publicly expressing his Aboriginal culture, acknowledging connections to Country during football games, and the media and public criticism of him talking about Australia’s treatment of Indigenous people and the challenges of growing up as an Indigenous Australian while accepting his Australian of the Year award, highlight the ongoing resistance from mainstream Australia to Indigenous expressions of culture (Judd, Butcher 2016). Indigenous sportspeople are “celebrated when passive, but condemned when highlighting historical inequalities” (Evans et al 2015). A quote from Doyle et al sums it up: “We don’t have a problem with identity; it is the rest of society who have a problem with our identity” (2013).

Indigenous people wanting to participate in sport and physical activity do so in an environment where racism is still very present. In sports, it takes place at the elite level, and at the grass-roots level, where “on any particular weekend at local sporting fields around the nation there will invariably be cases of racist taunts by players, bullying by spectators, parents yelling verbal abuse at kids” (Oliver 2014). Even when Indigenous athletes are praised, it can be in stereotypical terms of them as “naturally” more athletic, or predisposed to particular positions involving speed and spontaneity, which limits their access to positions of leadership or on-field strategic intelligence (Apoifis, Marlin, Bennie 2017).

Racism can act as a barrier both in preventing Indigenous people taking up a sport or physical activity, or continuing to participate.

8 Decision making and encouragement to become more active

This section looks at what is known about how people in Indigenous communities make their decisions to participate, or not to participate, in types of sport or physical activities and what would encourage them to become more active.

As discussed in the previous sections, some Indigenous people participate in sports and physical activities without necessarily making a conscious decision to do *sport or physical activity*. While some are likely to take active steps (literally!) to seek out a particular activity, after deciding they would like to participate in one, perhaps motivated by something like a health concern, the process may be more organic for some, incorporated in their daily lives and developing out of social influences and exposure to a particular activities (Cairnduff 2001; Bailey, Cope, Parnell 2015; Hunt, Marshall, Jenkins 2008).

Removing or minimising the barriers to participation identified in the previous section would presumably help encourage Indigenous people to become more active; however, there are few details on what has worked to encourage Indigenous participation in sport or physical activity broadly, as opposed to encouraging participation within a particular program or product.

The subjective nature of decision-making and encouragement make these topics ideal ones to explore in the qualitative component of this study.

9 Existing opportunities for Indigenous communities to participate

This section looks at the sport and physical recreation opportunities that are available for members of Indigenous communities.

Indigenous Australians should theoretically be able to access the same mainstream opportunities for sport and physical activity as are available to any other Australians; however, for reasons summarised in the previous sections, many of these are not appropriate or are too difficult to access. It is the offerings that have a specific Indigenous focus, or component, that are usually considered most “suitable”, and are therefore of interest here.

While it is beyond the scope of this report to identify every Indigenous sport or physical activity program available to Indigenous communities across Australia, Macniven et al attempted to do precisely that in 2015, and have recently released their findings (2017). They used the following criteria for inclusion of programs in their *Snapshot of physical activity programs targeting Aboriginal and Torres Strait Islander people in Australia*:

- targets Aboriginal and Torres Strait Islander people, either:
 - has Aboriginal and Torres Strait Islander specific program
 - has targeted Aboriginal and Torres Strait Islander component
- includes program delivery promoting sport or physical activity participation
- aims to increase physical activity levels for health benefits
- uses sport as a tool to improve social and community outcomes, such as education participation, reduced crime rates
- was operated in Australia at any stage from 2012 to search period (March–September 2015), reflecting current or recent practice.

They found 110 programs which met the above criteria. Equal proportions were targeted at adults or young people, with about a third of programs run for each of: adults, young people, and both adults and young people.

Fourteen programs operated nationally, three in the Australian Capital Territory, 21 in New South Wales, 11 in the Northern Territory, 16 in Queensland (including one in the Torres Strait), two in South Australia, one in Tasmania, twelve in Victoria, 24 in Western Australia and seven operated across two or more state or territory jurisdictions.

In terms of the timing of the programs, Macniven et al wrote:

“Five programs commenced before 2000 and had operated continuously since starting, with one in operation since 1970. Thirty-three programs commenced between 2000 and 2010, of which 21 were still operating; 35 programs commenced between 2010 and 2012, with 19 still operating. Just under a quarter of programs (n = 23) commenced between 2013 and 2015; four of which were ending by the end of 2015. One program commenced in 2009 and included an Aboriginal element from 2012. For 13 programs, the time period was unknown.”

A summary of the settings of the programs they found is reproduced from their publication, in Table 17.

Table 17 – Settings of Indigenous sport or physical activity programs identified by Macniven et al in 2015

Table 1. Setting, population focus, costs to participants and stakeholder involvement (n= 110 programs)

Program aspect	Category	Number of programs
Program setting	Community	62
	School	9
	Both community and school	9
	Sport	9
	Health	9
	Both university and sport	2
	Both health and sport	1
	Non-governmental organisation	1
	Residential service	1
	Residential camp	1
	University	1
	Both university and community	1
	Both health and community	1
	Media	1
	Both media and community	1
Telephone-based	1	
Population focus	Aboriginal and Torres Strait Islander people	101
	Targeted Aboriginal ^A component	9
Costs to participant	Yes	9
	No	100
	Unknown	1
Aboriginal and Torres Strait Islander Stakeholder involvement	Yes	93
	No	4
	Unknown	13

^ARefers to Aboriginal and Torres Strait Islander people.

In their article, the authors provided a comprehensive table listing the 110 sport and physical activity programs, which included details of:

- Age group (adult, young person, both)
- Location (state or territory, national)
- Name
- Time period of operation
- Aims
- Region (urban, rural, remote)
- Participant numbers
- Evaluation indicators
- Sectors involved (for example, health, non-government organisation, community sport)
- Funding source.

There are likely to have been a few additions since Macniven et al's scoping period in 2015. One such example is the *Aspire to be Deadly* programs from the Cairns Hockey Association which have, since 2015, had "a significant focus targeting indigenous young women and girls [with] broad based support to ensure the programs can encompass community needs." These programs are delivered in regions right across Queensland, including western Queensland, Cape York, in the far north, and the Gulf Savannah region. The *Aspire to be Deadly Good Health – Empower Me Program* is a recent initiative (Cairns Hockey Association [undated]).

Then there are the other Indigenous sports or physical activity programs, or components of such programs, which may not necessarily have had a specifically stated aim of increasing physical activity levels *for health benefits*. The National Aboriginal Sporting Chance Academy, for instance, runs programs that use "sport and mentoring to engage young people to strengthen culture, build self-esteem and enable a strong sense of autonomy through personal development" (NASCA [undated]). Organisations like the NASCA are dedicated to providing sports and physical activities opportunities for Indigenous people.

While not an Indigenous component per se, some mainstream sporting organisations are also attempting to widen the opportunities for Indigenous people to participate, with the introduction of formal policies. An example of this is the Australian Football League's establishment of the *AFL Indigenous Framework* (AFL [undated]).

Many sport and physical activity opportunities for Indigenous communities arise through grass-roots programs and community initiatives. These are numerous, but difficult to track, quantify or evaluate due to lack of available documentation. Some examples have been the National Aboriginal Basketball Carnival, held in New South Wales, and annual community festivals, like the *Yuendumu Games*. Local organisations, like the Garnduwa Amboorny Wirnan Aboriginal Corporation, in the Kimberley region, have been formed specifically to address sport and recreation participation in their regions (Cairnduff 2001). Indigenous youth and community centres also very often offer a range of sport and physical activity opportunities, catering to local Indigenous residents. Some examples of these, in the Northern Territory, were provided by Cairnduff and included:

- The Gap Youth Aboriginal Corporation, a non-profit organisation based in Alice Springs
- The Town Youth Centre, established by the community of Elliot
- Tangentyere Council's community centre, in Alice Springs
- The Daguragu Recreation Centre, constructed by bricks made by the community members (2001).

The now named Gap Youth and Community Centre in Alice Springs is one example of a long running provider of local Indigenous sport and physical activity opportunities. Operating since 1977, and started by the people from the Gap area of Alice Springs, it has consistently offered programs, initially to young people, and more recently to people of all ages. To encourage and enable participation, the sport and recreation programs include, among other appropriate and beneficial components, free food and transport home after evening events (Gap Youth and Community Centre [undated]).

10 Effectiveness of programs and products

This section draws on the literature to summarise the aspects which contribute to sports and physical activity programs and products being effective at engaging Indigenous people and maintaining their ongoing participation.

To be successful in encouraging sustained Indigenous participation, it is suggested that sports and physical programs and products have the characteristics listed in Table 18.

Table 18 – Characteristics of effective Indigenous sport and physical activity programs

Characteristic	References
Ongoing relationship-building and community consultation and involvement, at all stages of development and implementation, including initiation and evaluations	Cairnduff 2001; Dalton et al 2015; Dickson 2009; Doyle et al 2013; Muir, Dean 2017; Oliver 2014; Pressick et al 2016; Thomson, Darcy, Pearce, 2010; Ware, Meredith 2013; Wilson et al 2012; Young 2015
Local capacity-building , enabling long-term, sustainable control of the program	Muir, Dean 2017; Rynne, Rossi 2012; Thomson, Darcy, Pearce, 2010
A tailored, flexible offer that is specifically designed for the needs and preferences of the particular community	Rynne, Rossi 2012; Sun, Buys 2013; Ware, Meredith 2013; Wilson et al 2012
A group, family or community focus, rather than an individual focus	Doyle et al 2013; Pressick et al 2016; Wright, McCoy 2012
An environment which enables, not hinders, participants' cultural identity	Canuto et al, 2013; Gray, Macniven, Thomson 2013
A safe environment where participants feel welcome and supported	Canuto et al 2013; Macniven, Richards et al 2016; McCoy, Ross, Elston 2012; Ware, Meredith 2013
Integration with healthy living programs, cultural learning and wider cultural experiences	Malseed, Nelson, Ware 2014; Peralta et al 2014; Pressick et al 2016; Thompson, Chenhall, Brimblecombe 2013; Young 2015
Evaluations that take a more holistic, long-term approach and recognise benefits that may be difficult to quantify, rather than assessing separate, often short-term health variables (which are less likely to appear "positive" in isolation, in Indigenous communities)	Muir, Dean 2017; Otim et al 2015; Pressick et al 2016; Rossi, Rynne 2014; Rynne 2016; Ware, Meredith 2013; Young 2015
Long-term, reliable funding	Cairnduff 2001; Doyle et al 2013; Macniven et al 2017; Ware, Meredith 2013
For sporting programs, regular contact between experienced sportspeople and participants, mentoring and modelling by older participants	Hunt, Marshall, Jenkins 2008; Ware, Meredith 2013
Promotion as a game or sports , rather than in terms of desired outcomes (such as a get-fit, or exercise program)	Gray, Macniven, Thomson 2013; Ware, Meredith 2013

Programs that do not work do not meet the above criteria. An external provider establishing a generic, non-flexible program, without prior consultation with the community about their unique needs and preferences, is less likely to achieve high participation rates.

11 Provider-side drivers, opportunities and challenges

The implications of the previous sections' findings for providers of sport and physical activity programs are discussed in this section.

There is little in the Indigenous sport and physical activity literature to suggest what the drivers are for providers of Indigenous sport and physical activity. Presumably, one of the primary motivators for community-based providers is a concern for the community's wellbeing. The main drivers for other providers would probably depend on their operational context, for example, a sporting association delivering a particular sport, or a sport or physical activity program provider with a health agenda.

The opportunities again would depend on the type of sport or physical activity provider; however, as said by Macniven, Hearn et al, "Improving equity in opportunities for physical activity among all disadvantaged populations, including and especially those with high proportions of Indigenous Australians is necessary" (2016). There are opportunities for mainstream providers to continue to invest effort into creating inclusive, racism-free organisational cultures and environments, and for the creation and maintenance of Indigenous specific program components or products. A comment from Judd and Butcher was made in relation to remote community football teams, but can be extended to other sport settings: "The difference[s] represented by [Indigenous communities] require ... non-Aboriginal sporting organisations to consider more than just procedural and administrative fairness in seeking to build and maintain effective and mutually beneficial relationships with Aboriginal Australia. Cultural difference itself needs to be first recognised and then acknowledged as having a place within [the sport]" (2015). Oliver points out that establishing diversity policy frameworks is all well and good, but that they also need to be matched by the way in which sport is managed and delivered on the ground, where equality standards are still frequently seen "at best as supporting work already being done, but at worst as an unwarranted interference" (2014).

As sport and physical activity program and product options are often limited for Indigenous Australians (as opposed to any spontaneous activities which people do), there are plenty of opportunities for new options to be introduced. In some places, there are still no programs provided. A *Closing the Gap* paper says that any quality program is better than none and, where there is a void, priority should be given to filling the void, rather than making selective decisions about which sport or recreation program to deliver (Ware, Meredith 2013). However, a locally tailored approach is required, and providers are strongly advised to approach a community to find out what they can do to help, rather than saying, "this is what we do/offer" (Wilson et al 2012).

There are a number of challenges for providers of sports and physical activities to Indigenous communities, not least in relation to meeting the criteria for effective programs listed in the previous section, and the time, effort and flexibility that is required to work with communities to ensure that the program or product is ultimately driven by the community, and that the particular needs and preferences of that community are met.

Other challenges arise from the policy and funding landscape in which providers operate. The literature often refers to a lack of consistent, sustainable policies for Indigenous sport and physical activities, at a state, territory and national level, and the effect that this has on the ability for providers to establish effective long-running programs (Dickson 2009; Evans et al 2015; Macniven et al 2017; Young 2015). Such an environment creates long-term funding uncertainties, and Evans et al notes that programs are increasingly designed, implemented and run by non-profit organisations, including those affiliated with major sporting codes. These non-profit organisations have especially limited funds and competing priorities (2015). In addition, funding bodies often require evidence of an ongoing program's cost-effectiveness, value-for-money or "success" (Cairnduff 2001; Muir, Dean 2017), which can be problematic when evidence for the benefits of Indigenous sports and physical activity programs is difficult to obtain, especially in separate, quantifiable, short-term measures, as

mentioned in Section 6.1 and Section 10. Collecting longitudinal data can be complicated, and integrating the different operational approaches of mixed providers and funders can also be challenging (Hickey 2015; Thomson, Darcy, Pearce 2010).

In the end, the “success” of programs largely depends on the people involved, the quality and commitment of the staff, and the contribution of managers, coaches and community leaders in setting goals and framing behaviour (Canuto et al 2013; Oliver 2014; McCoy, Ross, Elston 2012; Ware, Meredith 2013).

12 Existing knowledge and gaps

A summary of the gaps in the findings of this report, against the stated objectives, and a list of recommendations, are included in this section.

12.1 Gaps in findings

Some of the research gaps identified in this report include the following issues:

- No recent, national data on sports and physical activity participation by Indigenous 15-17 year olds, as this group of respondents cannot be identified within the AusPlay sample³²
- An inadequate understanding of whether Indigenous women and men conceptualise and experience sport and physical activity differently to each other, or to non-Indigenous women and men, and whether this affects reported statistics
- A lack of findings on the potential relationships between Indigenous participation in sport and physical activities, and in sports clubs and associations, by remoteness
- Insufficient data to allow analyses of participation by further segmentations within Indigenous populations, such as:
 - sex within state or territory or remoteness areas, or remoteness areas within states and territories
 - participation rates throughout the lifecycle stages, particular for differently aged children, also by jurisdiction and/or remoteness category
- A requirement for more research to explore the role that sport and sport clubs play in building social capital and community capacity
- A scarcity of literature focusing on:
 - how Indigenous people decide to participate or not participate in sports and physical activities; the decision-making process
 - what has worked to encourage Indigenous participation in sport or physical activity broadly, as opposed to encouraging participation within a particular program or product
- Few insights into the additional programs and products adults would like for the children in their families and communities (family-orientated and culturally connected activities are preferred, but which types would they like more of, for their children)
- Minimal coverage of the drivers for providers of sports and physical activity providers.

12.2 Recommendations

Some suggestions for the Australian Sports Commission, arising from this data and literature review part of the research, follow.

The Australian Sports Commission may wish to consider ways to address the gap in the ongoing collection of longitudinal data on sports and physical participation by 15-17 year old Indigenous people.

³² Only respondents who are aged 18 years or older are asked potentially sensitive questions in the AusPlay survey, as described in the *Methodology* section, on page 8.

It is recommended that a more robust statistical analysis of the AusPlay data be undertaken at some point in the future when there is a more substantial sample of the Indigenous population to work with.

If identifying the drivers for providers of Indigenous sport and physical activities is of particular interest to the Australian Sports Commission, this could become the subject of a separate study. Such a follow-up study could investigate the regulation, policy and funding landscapes in which they function, their own organisational management strategies or operational aims, and the objectives of the programs and products they offer.

For the next part of this study, the qualitative component, it is recommended that separate focus groups be run for men and women, so that any gender and geographical differences are more likely to become apparent.

Although substantial refinement would be required before going to field, the following is a suggested outline on which focus group discussion guides could be based:

- Explore the differences between men and women's experience and understanding of sport and physical activity:
 - What do you think of when asked about sport and physical activity? (draw out how participants conceptualise/define these in their own words; do participants differentiate between perceived "white" concepts and their own?)
- What is involved in the decision-making process to participate, or not to participate in sport and physical activities? How do individuals decide whether or not to participate? Participants' own experiences of sport and physical activity:
 - Do you do any physical activity (for sports, recreation or exercise)? (clarification of activities that might be classified as cultural rather than physical, like fishing and hunting etc.)
 - What sort of things do you do? (in their own words/definitions, not pre-constructed activity categories)
 - If any do not, why?
 - What made you want to do those things?
 - How often do you do them? (with frequencies expressed in their own terms)
- What they think the other sex's experiences are:
 - What do you think [men/women] from your community do for sport and physical activity?
 - Why do you think they do those things?
- What would encourage participants to do more sports and physical activity:
 - Would you like to be more active than you are now (ideally, if there were no barriers)?
 - For those who would – what are the current barriers? What would encourage you to do more sport or physical activity?
 - For those who wouldn't – is there anything that would change your mind/ a situation where you can imagine wanting to become more active?
- Participants' experiences of sports clubs (positive/ negative):
 - Have you ever joined a sports club or sports team, or taken someone from your family to one?

- What sorts of club was it? (probe for whether it was new or well-established, and whether it was driven by the community or outsiders)
- If no experience - why not?
- Whether have or not - What do you think of sports clubs and sports teams? What was best about it/them? What didn't you like about it/them? (if no experience of them, explore "outside" opinion of them generally eg, if no access, why?, would they like access enabled? etc)
- What adults would like for their children (children within their families and communities):
 - What sort of sport and physical activities would you like your children to be able to do more of? Why?
 - Do you think they would enjoy that/ what sport and physical activities do they like doing most?

13 Reference list

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