Long term trends in Aboriginal and Torres Strait Islander youth sport participation 2005–2019

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Physical activity is essential for good health and sport participation is an important contributor to physical activity. Sport can achieve many health and broader social benefits for Aboriginal and Torres Strait Islander people (Indigenous Australians). Children's physical activity typically declines during teenage years. This study examined fourteen-year sport participation trends among youth aged 15-19 years. Indigenous youth sport participant levels were lower than non-Indigenous levels. The highest sports participation level was 80.1% (non-Indigenous males, 2016); the lowest was 56.8% (Indigenous females, 2018). Lower sport participation was reported by females compared to males in both Indigenous and non-Indigenous groups in each survey year with the lowest levels found among Indigenous females. These findings challenge current discourses of high Indigenous sport participation. A comprehensive understanding of the factors related to sports participation is required to inform future strategies and programs to increase participation and contribute to closing health and broader equity gaps.

Keywords: youth sports; Indigenous; exercise, surveys and questionnaires, Australia

Introduction

Physical activity is essential for good health (Lee et al. 2012) and sport participation is an important contributor to young people's overall physical activity levels (Eime et al. 2015). Sport is a unique avenue through which the Indigenous population of Australia, Aboriginal and Torres Strait Islander people, have earned the respect of non-Indigenous Australians (Bamblett 2011). In Australia, Aboriginal and Torres Strait Islander people are a young population group with a median age of 22.9 years in 2016, compared to 37.8 years for the non-Indigenous population (Australian Bureau of Statistics 2019).

Sport has the potential to achieve many benefits beyond health, with some evidence of improved broader educational, employment, social, crime and cultural

outcomes for Aboriginal and Torres Strait Islander people (Macniven R.; Canuto 2019). This evidence includes associations between sport participation and school attendance, improved self-esteem from physical sport participation as well as enhanced aspects of culture derived from sport such as cultural connections, connectedness, values and identity. Promoting sport as a vehicle to Close the Gap (Australian Institute of Health and Welfare 2018) in life expectancy and other outcomes was also a specific recommendation from the 2013 Parliamentary Inquiry 'Sport: more than just a Game' (Commonwealth of Australia 2013). This study is part of the larger *Foundation of Sport in Indigenous Communities* (FOSIC) study, which responds to calls within that report, by providing an initial evidence base regarding sport and physical activity in Australian Indigenous communities. Previous FOSIC analyses have examined sport and physical activity participation among children and adolescents (Evans et al. 2018) and the present study enables examination of participation rates among older adolescents and young adults.

Sports participation rates among youth and young adults

Recent national sport participation data from AusPlay data found that 63% of young people aged 0-14 years participated in organised physical activity outside of school hours at least once per week (Australian Sports Commission 2018) but specific sport participation data for Aboriginal and Torres Strait Islander children is not available. A recent large study in Australia's most populous state, New South Wales (NSW), found that Aboriginal and Torres Strait Islander children had higher overall physical activity participation levels than non-Indigenous children across all socioeconomic levels (Macniven et al. 2020). However, their organised physical activity and sport levels were lower. Physical activity levels of children typically decline during teenage years and this

is particularly evident among Aboriginal and Torres Strait Islander children (Australian Bureau of Statistics 2014). Data from the ABS in 2012-13 shows that Aboriginal and Torres Strait Islander physical activity levels among young people aged 5-17 years are higher than non-Indigenous levels but the reverse is seen among adults Thirty-eight percent of Aboriginal and Torres Strait Islander adults were less likely to be "sufficiently active for health" than non-Indigenous adults (rate ratio 0.8) (Australian Bureau of Statistics 2014). This highlights the importance of understanding the timing of, and reasons for, such decline. A study that examined these ABS data in more detail found that the decrease in Aboriginal and Torres Strait Islander physical activity levels occurred in adolescence (Evans et al. 2018).

International and Australian evidence shows that physical activity habits developed during childhood can be maintained into adulthood and that boys are typically more active than girls (Cairney et al. 2014). Two studies with Indigenous young people aged 5-18 years (Macniven et al. 2020) and aged 13-17 years in NSW (Macniven et al. 2017a), and the detailed ABS analysis of young people aged 5-17 years (Evans et al. 2018) also both found that boys were more active than girls. A greater understanding of these age and gender associations of participation in sport among Aboriginal and Torres Strait Islander young people would provide baseline knowledge to help identify and evaluate solutions to increase sport participation for health and broader social benefit.

The Mission Australia Youth Survey

The Mission Australia Youth Survey (MAYS) is a national, annual survey of youth values, concerns and social participation of Australian youth aged 15–19, as well as socio-demographic data, and is the largest annual survey of young Australians

(Hampshire and Di Nicola 2011; Mission Australia 2019). MAYS has been previously compared to Australian Census data which determined that MAYS was representative to national population data and has established the generalisability of the study (Dalton et al. 2015). The most recent MAYS survey in 2019 was completed by 25,126 participants aged 15 to 19 years (56.3% female). The largest number of responses came from NSW (26.2%), followed by Queensland (23.6%) and Victoria (17.7%). One in seven (14.3%) respondents were born overseas and 17.8% young people spoke a language other than English at home. The vast majority of respondents were studying full-time (93.3%) and 43.0% of respondents were working part-time (Mission Australia 2019).

Previous analysis of the 2012 MAYS found a positive association between self-reported participation in sport and overall health and risk of mental health disorder among 639 Aboriginal and Torres Strait Islander youth aged 15–19 years (Dalton et al. 2015). Youth who participate in sport were 3.5 times more likely to report good general health and 1.6 times more likely to have no probable serious mental illness.

This paper builds on these 2012 findings of the benefits between sport participation and health among Aboriginal and Torres Strait Islander MAYS participants by examining recent participation trends. This study aims to examine trends in youth sport participation relating gender and Indigenous status across fourteen annual MAYS between 2005 and 2019.

Methods

Secondary aggregate trend data came from annual MAYS reports between 2005 and 2019. MAYS has occurred annually since 2002 and has had up to 33,000 participants each year (Mission Australia 2019). The survey uses an opt-in methodology so response

rates are unable to be calculated, however the high participant numbers increase the reliability and generalizability of the results relative to population level data. Informed written consent is obtained from participants and the survey can be completed as a pen and paper or online questionnaire (Hampshire and Di Nicola 2011) with the vast majority of participants completing online (Mission Australia 2019). Annually, following ethical approval from State and Territory Education Departments and Catholic Education Offices, information about MAYS and an electronic link to the online survey were distributed to all secondary school principals across Australia (Dalton et al. 2015; Mission Australia 2019). This information and the survey link was also distributed to Mission Australia services, networks of other service providers, Commonwealth, State/Territory and Local Government departments, youth organisations and other peak bodies.

Participants reported whether they identify as Aboriginal or Torres Strait Islander (yes/no/prefer not to answer). Participants also report their gender (male/female/other). MAYS asked young people to identify the activities they had been involved in over the past year, including: arts/cultural, environmental, religious, political, volunteer, student leadership, youth group and club activities, and; sports (as a participant) and sports (as a spectator). Specifically, sport participation was operationalized by a question that is similar to that used in ABS surveys (Australian Bureau of Statistics 2012): "In the past year, have you been involved in sports (as a participant)?" with response options (yes/no).

Data analyses

Survey data were collated in Microsoft Excel, according to survey year and Indigenous status across the fourteen year period (2005 – 2019) and according to survey year and

Indigenous status and gender for seven years (2013 – 2019). Descriptive analyses were undertaken to identify sport participation rates according to survey year, Indigenous status and gender.

Results

Aboriginal and Torres Strait Islander and non-Indigenous MAYS participant response numbers and percentages for 2005 to 2019 are shown in Table 1.

The absolute number of Aboriginal and Torres Strait Islander respondents ranged from 319 in 2005 to 1625 in 2011. Both total numbers and Aboriginal and Torres Strait Islander numbers grew and fluctuated over the period studies as a result of different sampling and recruitment techniques. The questionnaire is delivered through an open-access webpage and also via schools. Schools, and other educational institutions, can agree for their students to complete the questionnaire as part of classes in health and personal development. The percent of Aboriginal and Torres Strait Islander respondents ranged from 3.8% in 2013 to 6.2% in 2015.

For most years between 2005 and 2019, Aboriginal and Torres Strait Islander youth sport participation levels were lower than non-Indigenous youth participation levels. This differential ranged from 1.8% in 2018 to 5.4% in 2013. In 2015, levels were very similar at 74.4% and 74.3%, respectively. In 2006 and 2007, Aboriginal and Torres Strait Islander youth sport participant levels were higher than non-Indigenous youth participation levels; this differential was 1.5% in 2006 and 2.9% in 2007. Some of these patterns in differentials may be related to shift in participation in the survey.

The highest sports participation level was 80.1%, among non-Indigenous males in 2016. The lowest sport participation level was 56.8%, among Aboriginal and Torres Strait Islander females in 2018. Lower sport participation was reported by females

compared to males in both Aboriginal and Torres Strait Islander and non-Indigenous groups in each survey year between 2013 and 2019. Among Aboriginal and Torres Strait Islander participants, this differential ranged from 7.8% in 2017 to 13.3% in 2013 and among non-Indigenous participants, this differential ranged from 2.9% in 2013 to 8.1% in 2018.

Among females, Aboriginal and Torres Strait Islander participation levels were lower than non-Indigenous participation levels with differentials ranging from 10.8% in 2013 and 1.7% in 2015. Among males, Aboriginal and Torres Strait Islander and non-Indigenous participation levels varied according to survey year. In 2013 and 2017, levels were very similar at 75.2% for Aboriginal and Torres Strait Islander males and 75.6% for non-Indigenous males in 2013 and 78.2% for Aboriginal and Torres Strait Islander males and 78.0% for non-Indigenous males in 2017. In 2014 and 2015, Aboriginal and Torres Strait Islander male levels were 2.9% and 1.4% higher than non-Indigenous male levels, respectively. In 2016 and 2018, Aboriginal and Torres Strait Islander male levels were 1.3% and 2.5% lower than non-Indigenous male levels, respectively.

The 2005 – 2019 MAYS sport participation level trends according to Indigenous status are presented in Figure 1.

The 2013 – 2019 MAYS sport participation levels for Aboriginal and Torres Strait Islander and non-Indigenous respondents and males and females are presented in Table 2 and these trends according to Indigenous status and gender are presented in Figure 2.

Discussion

These results provide an indication of long term Aboriginal and Torres Strait Islander

and non-Indigenous youth sport participation trends and gender differences. The results highlight overall lower sport participation levels among Aboriginal and Torres Strait Islander youth and consistently lower participation among females compared with males, with participation lowest among Aboriginal and Torres Strait Islander females. The proportion of Aboriginal and Torres Strait Islander respondents was higher than Australian Census proportions of 3.3%, although the median age of Aboriginal and Torres Strait Islander is younger than non-Indigenous Australians (Australian Bureau of Statistics 2019). Overall, MAYS response rates indicate increasing survey participation rates from 2013 to 2018 and response proportions are similar among Aboriginal and Torres Strait Islander and non-Indigenous Australian youth (Mission Australia 2019).

There has been a continued effort to reduce equity gaps in health and other key indicators between Aboriginal and Torres Strait Islander and non-Indigenous Australians (Department of the Prime Minister and Cabinet 2019). Sport has been recognised as important facet of social, mental and physical health and a contributor to wider educational, cultural and social inclusion indicators (Macniven R.; Canuto 2019; Dalton et al. 2015; Parker et al. 2006; Tatz 2012). It is therefore surprising that there has been little quantitative research documenting sport participation levelsamong youth considering that the Aboriginal and Torres Strait Islander population has a young median age of 22.9 years, 15 years lower than the national median age (Australian Bureau of Statistics 2019). A 2013 Parliamentary Inquiry on the contribution of sport to Indigenous wellbeing and mentoring (Commonwealth of Australia 2013) made specific recommendations to measure and compare Aboriginal and Torres Strait Islander sport participation outcomes across gender and age. These youth sport participation trends from MAYS provide important longitudinal data to contribute to this emerging evidence base.

While MAYS data uses a blunt measure of sports participation, whether youth have participated in sport over the last year, findings are consistent with other studies of Aboriginal and Torres Strait Islander sport and physical activity levels. Declines in sport and physical activity found nationally among Aboriginal and Torres Strait Islander children occur prior to adulthood (Evans et al. 2018; Macniven et al. 2019) and Indigenous adolescent sport and physical activity levels are slightly lower than non-Indigenous levels (Macniven et al. 2017b). These findings, together with those of the present study and recent commentary (Adair 2012; Evans et al. 2015) challenge assumptions that Aboriginal and Torres Strait Islander Australians have natural ability in sport and are also more likely to play sport.

National data have also shown different physical activity patterns among remote and non-remote young people (Evans et al. 2018) although these findings could not be determined in the present study as geographical data were not available. It is possible that the relatively lower participation levels among Aboriginal and Torres Strait Islander youth in the MAYS data, may be due to a sample heavily weighted by urban, rather than remote, youth. Evidence is emerging that physical activity levels are substantially different in remote and non-remote location (Evans et al. 2018), and the findings from the MAYS data should be considered in this context. Achieving increases in physical activity among urban Aboriginal and Torres Strait Islander youth has been previously demonstrated (Malseed C 2014).

MAYS sport participation was lower among girls compared to boys in both Aboriginal and Torres Strait Islander and non-Indigenous groups. This pattern is known among non-Indigenous children internationally (Cairney et al. 2014) and in Australia (Eime R.; Casey M.; Harvey J.; Sawyer N.; Symons C.; Payne W 2015). Emerging comparative evidence from the present study and in previous data (Macniven et al.

2017b; Evans et al. 2018) indicates that adolescent girls appear to have the lowest levels of all children. This evidence highlights an important target group for future participation strategies and programs. While socioecological factors have been found to explain lower sport participation levels among Australian girls, (Eime R.; Casey M.; Harvey J.; Sawyer N.; Symons C.; Payne W 2015) no previous studies have specifically examined this association among Aboriginal and Torres Strait Islander children, although gender specific sport and physical activity barriers are evident (Macdonald, Abbott, and Jenkins 2012). Gender and culture specific roles may contribute to lower participation levels and structural and family-based strategies have been suggested as solutions (Nelson 2009).

Several broader reasons may also account for lower sport participation levels among Aboriginal and Torres Strait Islander youth, of both genders, found in the present study and the overall emerging literature. Sedentary behaviours such as screen time are increasing among youth and may displace sport participation, indeed a clustering of high sport participation and low screen time among Aboriginal and Torres Strait Islander children was found in a recent longitudinal study (Wilson et al. 2020). Another study found that Aboriginal and Torres Strait Islander adolescents were less likely than non-Indigenous adolescents to be members of a sports team (Macniven et al. 2017b) This may be reflective of the costs of organised sport that can lower child participation levels (Somerset and Hoare 2018). Given that lower incomes are more commonly experienced among Aboriginal and Torres Strait Islander Australians this cost barrier may be more prominent. Another key social determinant of healthy behaviours such as sport participation is employment and employment levels are lower among Aboriginal and Torres Strait Islander people (Australian Bureau of Statistics

2018). Related lower incomes can reduce opportunities for organised sport participation given these associated costs.

There are important implications from these findings and the emerging evidence base of Aboriginal and Torres Strait Islander participation in sport and physical activity for policy development. Policies and programs to increase sport and physical activity participation need to take these patterns into account, for example by focusing strategies and resources on engaging adolescent females in sport and prioritising inclusive, community-based participation.

Some limitations provide important caveats to the findings. Although the MAYS sample reflects national youth proportions for Aboriginal and Torres Strait Islander and non-Indigenous Australians (Australian Bureau of Statistics 2019), the representativeness remains unknown. Given the large sample size and demographic similarity to the Australian population (Australian Bureau of Statistics 2018) the MAYS data are likely to be largely representative of the target youth population. However, it is not possible to make this claim regarding those identifying as Aboriginal and Torres Strait Islander specifically. Obtaining more precise geographic information to determine representativeness and explore sports participation in relation to the diverse types of communities where Aboriginal and Torres Strait Islander youth live is recommended in future MAYS and research in general.

A further limitation is that the assessment of sports participation was non-specific and limited; it does not identify frequency of participation, nor the type of sport. Furthermore, the survey collects a range of other data including participant socio-demographic background, education and employment, participation in community activities, subjective wellbeing, general and mental health. Availability of these raw data would provide comprehensive opportunities to conduct a trend analysis or other

longitudinal data analysis to explore differences statistically to determine how such factors interact and may impact sports participation. Nevertheless, these sport participation data over a fourteen-year time period contribute to a greater understanding of sports participation among Aboriginal and Torres Strait Islander youth and participation relative to non-Indigenous youth.

More broadly, further qualitative research is required to investigate the specific types of sports that youth are involved in and those that are appealing and attractive, as well as the success of programs in increasing sport and physical activity participation. Deeper analysis into the ideological and contextual factors that contribute to sports participation, including barriers, enablers and motivators to participation is important and their identification within an understanding of community and cultural context. (May et al. 2020). Gender and location (remote/non-remote) are emerging as particularly significant and deserving of further research (Evans et al. 2018). Achieving increased participation, particularly among female adolescents, could improve the health and broader equity gaps that currently exist in Australia (Australian Institute of Health and Welfare 2018) and was also a priority recommendation from the 2013 Parliamentary Inquiry (Commonwealth of Australia 2013). Other research describing the low levels of participation in organised sport and physical activity among Aboriginal and Torres Strait Islander women calls for culturally safe spaces to increase opportunities for participation (Stronach, Maxwell, and Taylor 2015). It may be that the low levels of physical activity, declining further at adolescence, among female Aboriginal and Torres Strait Islander youth in this study, reflect the emergence of issues related to a lack of culturally safe opportunities to participate. To further advance the case for evidence-based programs, there is a need for deeper, more nuanced, community level understanding of the place of sport. Both quantitative and qualitative evidence

need to inform policy development and these two needed to be integrated to provide context sensitive programs for local communities.

Conclusion

These findings give important national, quantitative data in an area that lacks empirical research, Aboriginal and Torres Strait Islander youth sport participation. Our findings show a trend in lower sport participation levels reported by Aboriginal and Torres Strait Islander youth compared to non-Indigenous Australian youth participation. This trend challenges current discourses surrounding a high level of Aboriginal and Torres Strait Islander sport participation. It is clear that gender inequalities in sport participation are also particularly evident among Aboriginal and Torres Strait Islander youth. A deeper understanding of the factors involved in sports participation in this group is needed to inform programs to lift sports participation and contribute to closing equity gaps.

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Table 1. Table 1: MAYS Indigenous and non-Indigenous survey responses

Year	Indigenous		Non-Indigenous	
	Number (N)	Percent (%)	Number (N)	Percent (%)
2005	319	4.6	6567	95.4
2006	509	5.3	9044	94.7
2007	913	6	14383	94
2008	1397	4.9	27200	95.1
2009	913	5.6	15256	94.4
2010	1483	4.4	31855	95.6
2011	1625	5.5	27804	94.5
2012	441	4.3	9843	95.7
2013	534	3.8	13927	96.2
2014	747	5.6	12853	94.4
2015	1147	6.2	17847	93.8
2016	1298	6.1	20548	93.9
2017	1265	5.3	22790	94.7
2018	1594	5.7	26692	94.3
2019	1579	6.4	23547	93.6

Figure 1. Indigenous and non-Indigenous sport participation: 2005-2019

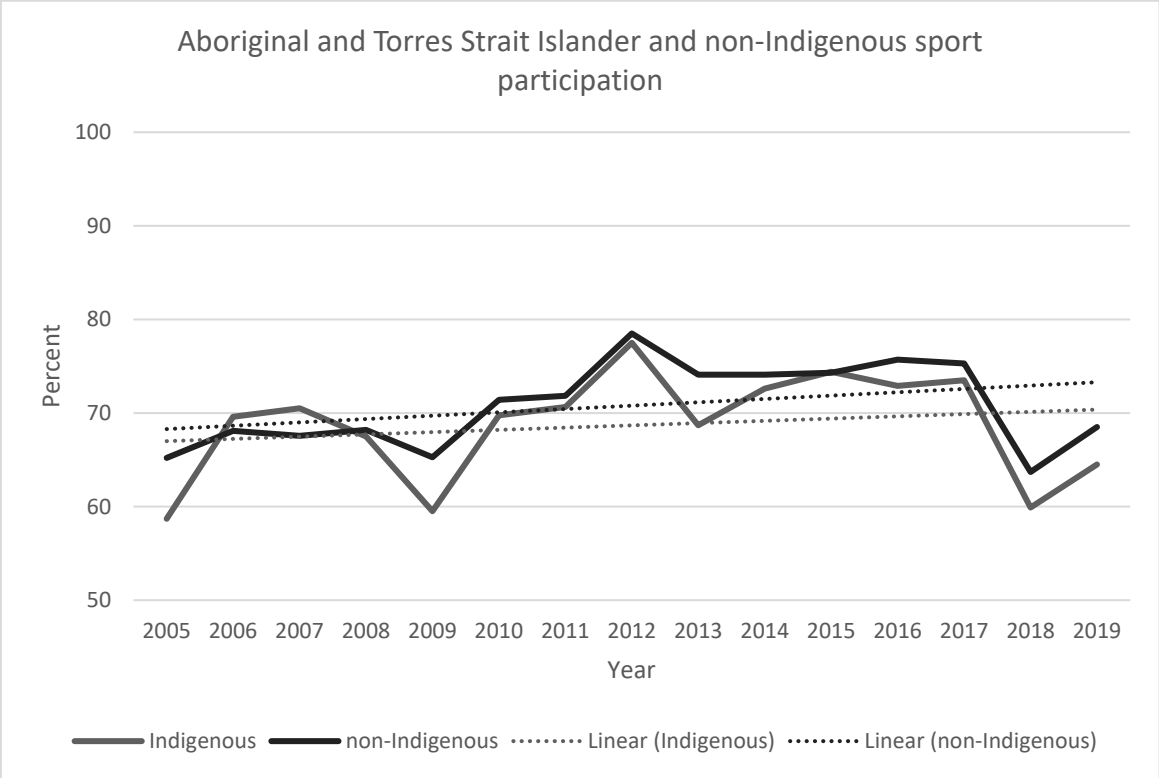

Table 2. 2013 – 2019 MAYS sport participation, past year

Year	Indigenous			Non-Indigenous		
	All	Female	Male	All	Female	Male
2013	68.7	61.9	75.2	74.1	72.7	75.6
2014	72.6	69.5	79.3	74.1	72.6	76.4
2015	74.4	69.9	79.0	74.3	71.6	77.6
2016	72.9	70.3	78.8	75.7	72.8	80.1
2017	73.5	70.4	78.2	75.3	73.7	78.0
2018	59.9	56.8	65.7	63.7	60.1	68.2
2019	64.5	62.4	68.2	68.5	66.1	71.9

Figure 2. Aboriginal and Torres Strait Islander and non-Indigenous male and female sport participation: 2013-2019