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Integrating public health and sport management: Sport participation trends 2001–2010

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ABSTRACT

In order to inform strategies to increase levels of physical activity (PA) for a healthier society, it is important to understand participation trends in leisure-time physical activity (LTPA). Little is known about the context of LTPA participation, particularly from the perspective of "sport and recreation" (S&R) categories such as organised and club-based activities. The primary aim of this study is to contribute to the sport management literature by specifically examining PA participation levels and trends in Australia over a decade, for those aged 15 years and older, through the lens of S&R. This paper also discusses the potential synergy between the public health and sport management domains with regard to LTPA/S&R. The Australian Sports Commission provided data from the Exercise, Recreation and Sport Survey (ERASS), a population survey conducted quarterly from 2001 to 2010 by computer-assisted telephone interview. Participation in LTPA was analysed by year, gender and age, in three hierarchically related categories: (1) any LTPA participation, (2) participation in an organised context, and (3) organised participation in a club. Participation rates in any LTPA increased significantly over the decade. However, this was not matched by increases in organised and/or club participation, which largely remained steady over the 10-year period. Much of the organised participation was within a club setting, and participation in this context is more likely among males than females. There is some evidence that the overall level of LTPA is increasing, which is positive for health, but there was generally no increase in club-based participation, resulting in sport contributing relatively less to overall population LTPA. However, the depth of information available from population surveys regarding club-based LTPA is insufficient to draw definitive conclusions, or make important strategic decisions about sport and health policy. There is a critical need for more comprehensive sport participation data to provide the evidence for improved programme and policy development. An avenue for this to occur may be through the integration of participation data from peak sport organisations.

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1. Introduction

Globally, physical inactivity is now the fourth leading cause of death (Kohl et al., 2012). There has been an increase in the prevalence of obesity in many societies and physical inactivity has been identified as a public health (PH) pandemic (Kohl et al., 2012). Insufficient participation in physical activity (PA) is linked with premature death, and diseases such as coronary heart disease, stroke, some cancers, type 2 diabetes, osteoporosis and depression (US Department of Health and Human Services, 2008). Conversely, regular participation in PA throughout the lifespan is imperative for good physical and mental health (US Department of Health and Human Services, 2008).

Current guidelines suggest that adults accumulate 150–300 min of moderate intensity physical activity or 75–150 min of vigorous physical activity, or an equivalent combination of both intensities, each week. Furthermore, muscle strengthening activities on at least two days per week is recommended (Department of Health, 2014).

It is a common finding in developed countries that many people are not sufficiently physically active to meet the recommended levels for health benefits (Eime, Harvey, Sawyer, et al., 2013; Tucker, Welk, & Beyler, 2011). High levels of physical inactivity are likely to contribute to the proportion of Australian children (25%) and adults (63%) who are overweight or obese (Australian Bureau of Statistics, 2012). Currently Australia, like many developed nations, is not an active nation and this is likely to have dire consequences for national morbidity rates and the PH system at large.

Leisure-time physical activity (LTPA) is a term used predominantly in the PH domain. Sport and recreation (S&R) is a term used predominantly by sporting organisations and in the associated branches of government administration. Although the word "recreation" does not necessarily imply PA per se, its use in the term S&R refers specifically to PA, and so S&R is essentially synonymous with LTPA. Both terms are used in this paper, depending on the context. Sport is specifically defined as: "a human activity involving physical exertion and skill as the primary focus of the activity, with elements of competition where rules and patterns of behaviour governing the activity exist formally through organisations, and is generally recognised as a sport" (Commonwealth of Australia, 2011). More broadly, the contexts of LTPA have been classified in terms of modes, settings and types (Eime, Harvey, Sawyer, et al., 2013). They distinguished four modes of LTPA: team sport, individual sport, organised but non-competitive PA; and non-organised PA. Settings comprise school, club or centre, and home and neighbourhood; and types referred to the many specific sports and other forms of LTPA (Eime, Harvey, Sawyer, et al., 2013). In this classification scheme, sport takes place in particular combinations of mode (team or individual competitive), setting (school or club) and type (activities that have rules, exist formally through organisations, and are generally competitive and recognised as sports), while "recreation" is represented by two modes of LTPA: organised but non-competitive PA; and non-organised PA.

Changing PA participation levels is not only a PH issue; participation levels and trends are also important to the field of sport management (SM). Understanding sport participation trends and the influences on participation can provide the necessary evidence to inform SM policy and practice related to a large range of contexts from community 'grass-roots' participation to elite levels of competition. For example, in Australia, Commonwealth, State and Territory Sport Ministers recently agreed that there was a need for an "holistic and strategic approach to the organisation and development of sport and recreation policy" (Commonwealth of Australia, 2011, p. 3). As a consequence, a National Sports Policy Framework was developed outlining a guide to the development of sport policies and coordinated strategies at both the community and elite levels for the success and health of Australia as a nation. A collaborative approach was highlighted for the development and adoption of policies that support both increased grass-roots participation as well as elite success internationally (Commonwealth of Australia, 2011). The approach to policy development evident in Australia is also apparent in other developed nations such as the United Kingdom. However, in a report published by Oxford University and Sport England it was noted that, "The evidence base for the effectiveness of interventions for the specific promotion of sport is far less developed than for the promotion of physical activity" (p. 3) (Cavill, Richardson, & Foster, 2012). It is clear that successful translation of such political statements and frameworks to policies and practices requires a solid evidentiary base (Cavill et al., 2012).

In Australia, it is also anticipated that agreed national priorities driving the development of sport policies and strategies, will contribute to the Commonwealth government's objective of improving health and wellbeing (Nicholson, Hoye, & Houlihan, 2010). The report "dynamic structure of Australian sport" was recently published by the Australian Sports Commission (2011). It provides a conceptual model of the Australian sport sector and the interrelationships between government, national, state and community sports organisations, as well as other key enabling peak agencies. The overriding objective of the report was to create "a more physically active, healthier, resilient, high performing, proud Australia" (Australian Sports Commission, 2011, p. 1). This sport policy objective highlights the importance of the synergies between SM and PH to get more people, more active, more often, leading to a healthier society.

In order to have targeted strategies to improve sport participation and consequently PA levels, we need to understand trends in, and influences on, sport participation. In the PH field, the importance of high quality data regarding PA levels, trends and determinants to inform PH policy development is well recognised, and in accordance with this, there is an abundance of research in this area (Hallal et al., 2012; Merom, Bauman, & Ford, 2004). Research within the PH domain has identified the proportion of adults (15 years and older) and adolescents (13–15 years) that are active or inactive in PA in general in over 120 countries, and this information guides the development of PH policies and programmes to increase activity levels (Hallal et al., 2012). However, this research focuses predominantly on general levels of PA rather than sport (Henderson, 2009). Consequently, we do not have extensive knowledge of sport participation trends. To implement effective

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policies and programmes in SM to better achieve national priorities such as increasing and maintaining sport participation for population health benefits, policymakers need access to information on the trends and determinants of participation in sport. In doing so, the field of SM can learn from PH research approaches to understanding participation trends and determinants (Rowe, Shilbury, Ferkins, & Hinckson, 2013). Furthermore it has been argued that there is a disconnect between PA and SM research (Rowe et al., 2013), particularly as SM research has often focused on professional sport spectatorship as entertainment and organisational/management issues rather than exploring how to increase community or population levels of participation in sport (Henderson, 2009). In a 10-year review of published journal articles within Sport Management Review (1998–2007) only 6% of articles focused on active participation (Henderson, 2009). Even amongst people who are active through sport and recreation, there are different "segments" of participation. The Australian Sports Commission recently commissioned market segmentation research to identify needs, motivations and barriers to sport participation among the Australian sport market for children (aged 5–13) and adults (aged 14–65) (Australian Sports Commission, 2013). The researchers identified that adult club member segments represent less than 25% of the Australian population and that some non-club member segments, such as the 'sport indifferent' and 'sport atheists' were considered extremely hard to convert to club membership. The research also identified that sport provision in Australia continues to focus on competition, does not always offer flexible delivery times, and is not always conducive for people who feel that they are not capable of, or are anxious about, participating in sport (Hajkowicz, Cook, Wilhelmseder, & Boughen, 2013). Children were most likely to be in the 'social loyalist' category (23%), that is those who are highly engaged in sport and love being a part of a sports team, or the 'sport resistant' category (22%), that is those who do not understand what other people get out of sport participation (Australian Sports Commission, 2013). It is anticipated that the knowledge gained through this research will help Australian sport to understand the market and to inform the development of targeted strategies to increase participation.

Across many nations, including the United Kingdom, Denmark, Sweden, Finland, Australia, New Zealand and the Netherlands there is a (policy driven) realisation that sport can play an important role in achieving community health objectives (Westerbeek, 2009). Sport also appears to have the potential to provide greater mental and physical health benefits than other forms of PA (Eime, Harvey, Brown, & Payne, 2010; Eime, Harvey, & Payne, 2013). Compared with unstructured, individual forms of PA, sport has been linked to better mental health, less stress and increased life satisfaction (Eime et al., 2010). Similarly, Street, James, and Cutt (2007) reviewed literature pertaining to the relationship between organised physical recreation and mental health and found that participation in sports clubs was associated with better mental health and individuals who were more resilient to the stresses of modern living. In relation to physical health, participation in club sport has also been found to be associated with additional physical health benefits, compared to unstructured, individual forms of PA, at low and medium durations of PA (Eime, Young, Harvey, Charity, & Payne, 2013a).

Despite these documented health benefits of sport participation, there is limited research relating to participation in sport across the PH and SM fields; especially for adults. Furthermore, sport participation rates are sometimes blurred within other contexts or definitions such as the broad category of LTPA. While we have some information about particular population groups in Australia (Kumar, Rossiter, & Olczyk, 2009), and internationally in Iceland, Finland and Switzerland (Eíðsdottir, Kristjánsson, Sigfúsdóttir, & Allengrante, 2008; Laakso, Telma, Nupponen, Rimpela, & Pere, 2008; Zahner et al., 2009), with regard to organised sport, these studies predominantly focus on children and adolescents; relatively little is known about the sport participation of adults.

There is some evidence that older adolescents shift their participation away from organised, competitive modes of participation to non-organised and non-competitive modes and settings and to individual-based activities (Eime, Harvey, Sawyer, et al., 2013; Pate, Dowda, O'Neill, & Ward, 2007). Similarly, in England between 1997 and 2006 there has been a reported increase in individual-based activities, such as gym and fitness based activities, for those aged 16 years or older (Stamatakis & Chaudhury, 2008). For adults, however, there are mixed reports of sport participation trends. In Spain between 2000 and 2010 sport participation reportedly increased for males (from 46% to 52%) and females (from 27% to 33%) aged 15–74 years (Palacios-Cena et al., 2012). Similarly, an English study between 1997 and 2006, of 60,000 people aged 16 years and older, reported that weekly sport and exercise increased significantly, but only for those aged 45 years and older (Stamatakis & Chaudhury, 2008). In contrast, a Canadian study of sport participation of those aged 15 years or older reported a decrease in weekly sport participation from 1992 to 2005 from 45% to 28% across age groups (Ifedi, 2008). These findings were supported by those reported by Birchwood, Roberts, and Pollock (2008) who noted sport participation among adults in South Caucasus countries declined from a rate of 34% at age 16 to a low of 14% at age 31 years.

In summary, the reporting of overall PA levels assists in understanding participation from a PH perspective; however, the lack of specific information regarding sport participation hinders SM development of strategies to grow and sustain sport participation. Historically, SM literature has focused on other topics such as sports spectatorship, and not sport as a population-based PH strategy to improve PA levels (Henderson, 2009; Rowe et al., 2013).

During the 11-year period (2000–2010) of ERASS data collection, a number of societal changes occurred in Australia with potential impact on levels and patterns of participation in LTPA/S&R. These include PH efforts aimed at increasing PA, such as mass media campaigns, work place interventions or community strategies (using pedometers, enabling walkable neighbourhoods etc.). Sport-related events may also have had an impact, such as the 2000 Sydney Olympic Games and 2006 Commonwealth Games in Melbourne (Harvey, Eime, & Payne, 2009). Conversely, a number of health indicators related to PA, such as rates of obesity and type 2 diabetes, have deteriorated during the same period. These developments provide a strong rationale for a systematic examination of levels and patterns of LTPA/S&R throughout this period.

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Little is known about the context of LTPA participation, particularly from the perspective of S&R categories such as organised and club-based activities. The primary aim of this study is to contribute to the SM literature by specifically examining PA participation levels and trends in Australia over a decade, for those aged 15 years and older, through the lens of S&R. This paper also discusses the potential synergy between the PH and SM domains with regard to LTPA/S&R. Further, considering that leisure time sport participation in a club context is not unique to Australia – people in New Zealand, Britain and some European countries participate in sport via membership of single- or multi-sport focused community sport clubs (Gray, 2004) – this Australian study has relevance to a wider international audience.

2. Methods

2.1. Study design

LTPA data from the Exercise, Recreation and Sport Survey (ERASS) (Australian Sports Commission, 2010) from 2001 to 2010 were obtained. The usefulness of the ERASS survey from a PH perspective has been established (Bauman, Curac, King, Venugopal, & Merom, 2012; Merom et al., 2004). Importantly, it is useful as a national surveillance of habitual PA behaviours and specifically identifies the types of activities undertaken (Merom et al., 2004). It has also been used to determine adult participation trends in LTPA according to city of residence (Bauman et al., 2012).

2.2. Sampling

Quarterly survey samples for ERASS were selected from all persons aged 15 years and over, living in occupied private dwellings using Computer-assisted Telephone Interviewing. In each quarter approximately 3400 persons were sampled Australia-wide from all states and territories. Verbal informed consent was indicated by the respondents' willingness to participate in the telephone survey. De-identified annual data from 2001 to 2010 were analysed in this investigation. Ethics approval was granted by the University Human Research Ethics Committee.

2.3. Measures

After explaining the purpose and format of the questionnaire, interviewers asked respondents if they had participated in *any* LTPA for exercise, recreation or sport in the last 12 months (as opposed to PA associated with work, household or garden chores). If the response was 'yes', respondents were then asked to report what activities they had participated in during this time period (up to a maximum of 10 activities). Respondents were then requested, for each reported activity type, to indicate whether any of the activity had been *organised* by a club, association or any other type of organisation. If the activity had been organised, a further question then inquired as to what type of club, association or organisation had organised the activity (Fitness, leisure or indoor sports centre that required payment for participation; Sport or recreation club or association that required payment of membership, fees or registration; work; school; other). From responses to the above questions three dichotomous measures were derived, indicating: (1) whether there was *any* participation in PA for exercise, recreation or sport in the past 12 months (yes/no); (2) for each type of activity, whether any of the activity was *organised* (yes/no); and (3) if so, was the activity organised by a sport or recreation club or association that required payment of membership fees or registration (herein referred to as *club*) (yes/no). Breakdowns by the sex, and age group (15–34, 35–54, 55–74 and 75+ years) of respondents were also included. Finally, respondents were asked how many times they had participated in each type of activity during the last 12 months.

2.4. Statistical analysis

All analyses used ERASS data weighted at the state, region (metropolitan, rest of state), age group and gender levels. Population estimates are Australian Bureau of Statistics (ABS) projections for persons in Occupied Private Dwellings. For the purposes of this current investigation all respondents were included in the analyses, which were conducted using SPSS Version 19.

Ten year trends for the proportion of respondents who reported participation in *any organised* and *club* PA for exercise, recreation or sport in the past 12 months are reported for males and females, and for age groups within each sex, together with 95% Confidence Intervals (CI).

Differences or changes in proportions were regarded as statistically significant if the two 95% CIs did not overlap. This is a conservative approach, since the standard error of a difference between independent proportions is generally less than the sum of the standard errors of the two proportions. With regard to changes over time, it is also predicated on the assumption that each annual sample is independent (i.e., that the data constitute a series of cross-sectional samples with no repeated observations). Considering that the sampling fraction each quarter is approximately 0.02% (i.e. 3400 divided by the population of Australians aged 15 and over – approximately 18,000,000 in 2010), this is a reasonable assumption.

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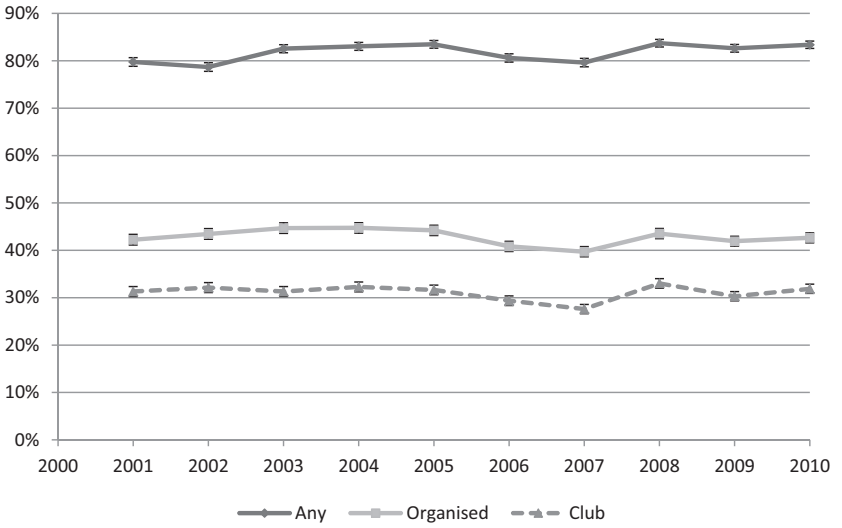

Fig. 1. Ten-year trends in S&R participation for males.

3. Results

Figs. 1 and 2 present the participation trends for males and females respectively, according to different participation contexts: *any* (at all in the previous year); *organised*; and *club*. Participation in *any* sport or recreation for males increased significantly, from 80% in 2001 to 83% in 2010. A third of males participated at least once in *club* sport in the previous year. There were no significant changes from 2001 to 2010 in male participation in *organised* (from 42% to 43%) or *club* settings (from 31% to 32%).

Significantly more females indicated that they participated in *any* S&R in the previous year in 2010 (81%) compared to 2001 (76%) (Fig. 2). However, participation in *organised* and *club* S&R remained unchanged at rates of 37% and 20%, respectively.

Figs. 3–5 display male participation rates, across different age ranges, for participation in any, organised and club S&R. There were significant decreases between 2005 and 2007 in participation in *any* context for the youngest and oldest cohorts (Fig. 3). Participation rates did however, significantly increase for males aged 55–74 from 68% in 2001 to 78% in 2010. Participation in the oldest cohort also significantly increased from 53% in 2000 to 66% in 2010.

Participation rates in *organised* S&R for males, as a proportion of those that participated in *any*, were consistent across the decade for all age groups. In terms of *organised* participation this was higher for the younger age group (15–34 years) at 64% (both 2001 and 2010) compared to all older age groups which in 2010 ranged from 41% to 45% (Fig. 4).

Male participation in *club* sport as a proportion of organised participation was highest for those aged 55–74 years in 2001 (84%), however this significantly decreased to 73% in 2010 (Fig. 5). Participation significantly increased for the youngest cohort from 71% in 2000 to 75% in 2010.

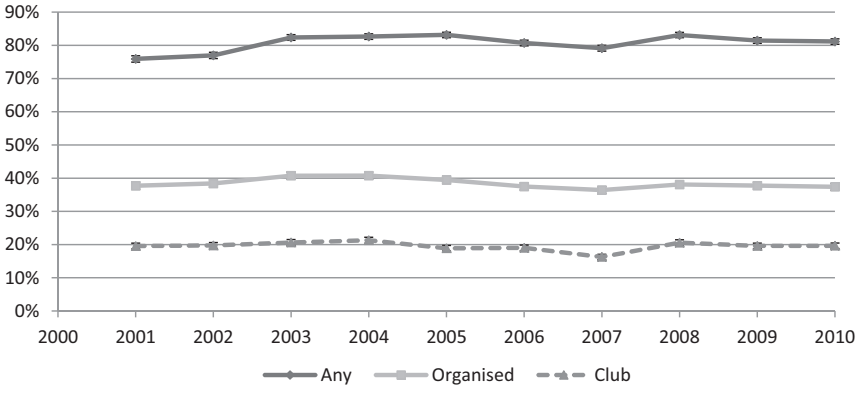

Fig. 2. Ten-year trends in S&R participation for females.

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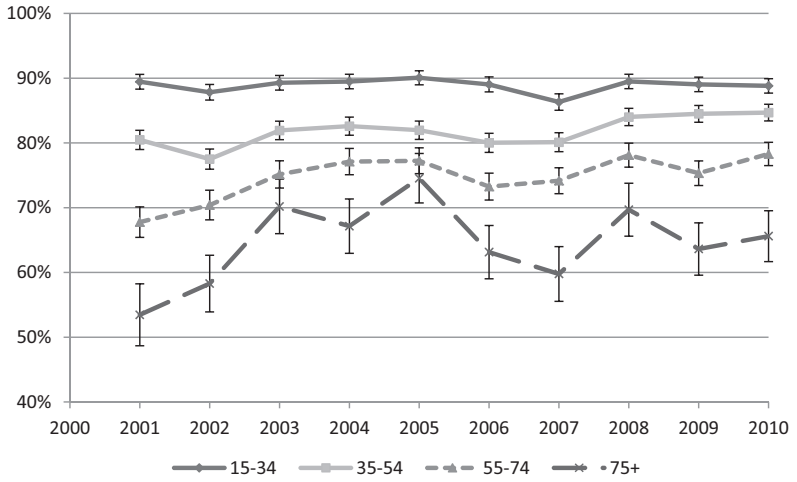

Fig. 3. Age-related trends in participation in any S&R for males, 2001–2010.

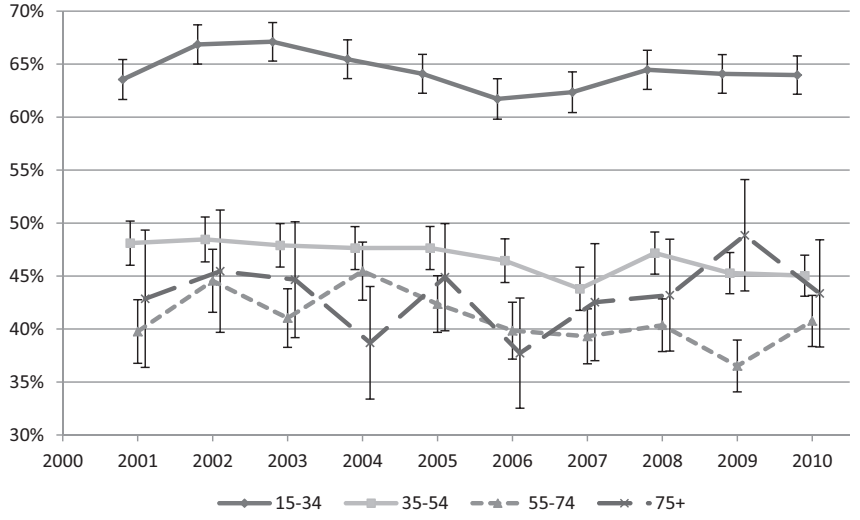

Fig. 4. Age-related trends in participation in organised S&R for males as a proportion of those that participated in any S&R, 2001–2010.

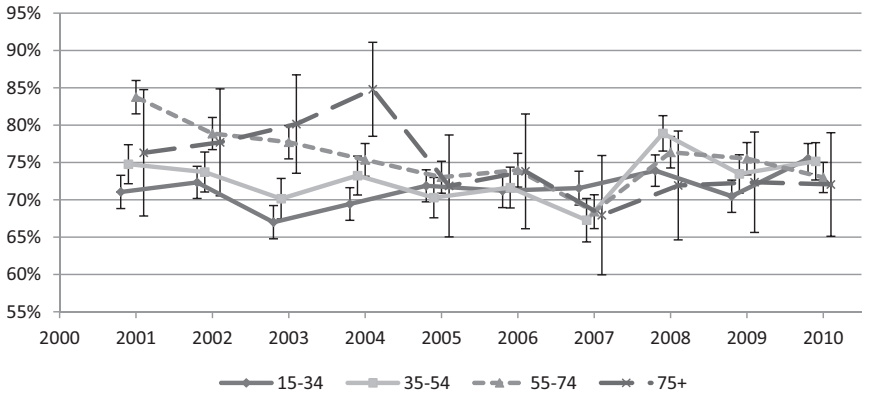

Fig. 5. Age-related trends in participation in club sport for males as a proportion of those that participated in organised S&R, 2001–2010.

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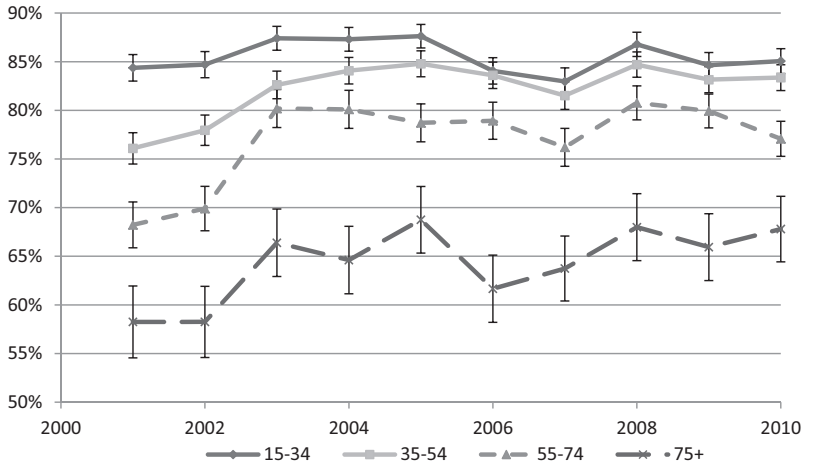

Fig. 6. Age-related trends in participation in any S&R for females, 2001–2010.

For females, participation in *any* form of S&R was, for all except the youngest cohort, significantly higher in 2010 compared to 2001 (Fig. 6). Generally, the highest participation rates were reported during 2003–2005, followed by downturns in all age groups during the period 2005–2007.

In terms of *organised* participation as a proportion of those that participated in *any* context, younger females were consistently, significantly more likely than older females to participate in an organised context (Fig. 7).

For females, there has been a significant change over time in *club* participation as a proportion of *organised* participation. For females aged 15–34 years, this rose significantly, from 50% to 59% between 2000 and 2010; whereas for all other age groups it decreased, although not significantly, between 2001 and 2010 (Fig. 8).

4. Discussion

This study helps to overcome the dearth of information about sport participation trends in Australia. It encompasses all LTPA, which is both appropriate to inform both SM and PH domains, but also specifically addresses S&R participation. In particular, it presents data representing participation in S&R in organised and club-based contexts over a 10 year period.

While it is not specifically within the scope of this paper, it is worth noting a possible 'major sporting event effect' on participation trends. In the year 2000 Sydney hosted the Olympic Games and in 2006 Melbourne hosted the Commonwealth Games. We could not help but observe that within a year from these major events participation in most age groups started to trend upward. In the case of the Commonwealth Games, all participation rates dropped in 2005 and 2006 and by 2007 started to trend back upward again. In the case of Sydney 2000, in particular the older age groups show a significant rise in participation immediately after the Games, with the younger age groupings following in 2002. If promoted in the right way Olympic Games may have the potential to promote physical activity through the 'festival effect'. The 'festival effect' is derived through the promotion of the Games as a national event which is bigger than the sport participation itself (Weed et al., 2012).

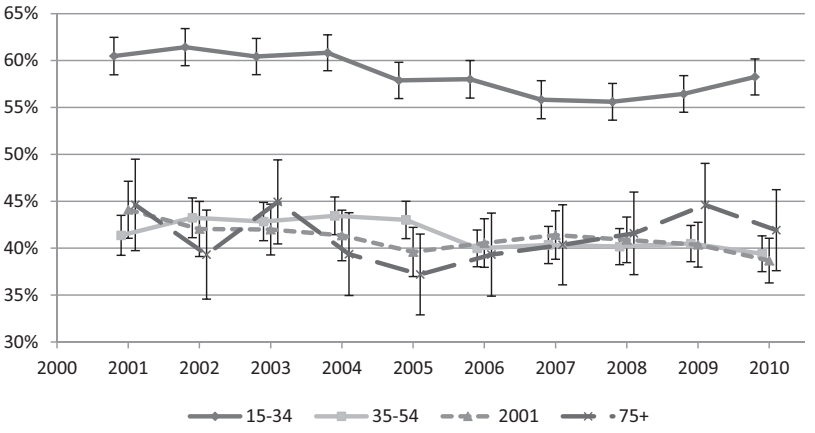

Fig. 7. Age-related trends in participation in organised S&R for females as a proportion of those that participated in any S&R, 2001–2010.

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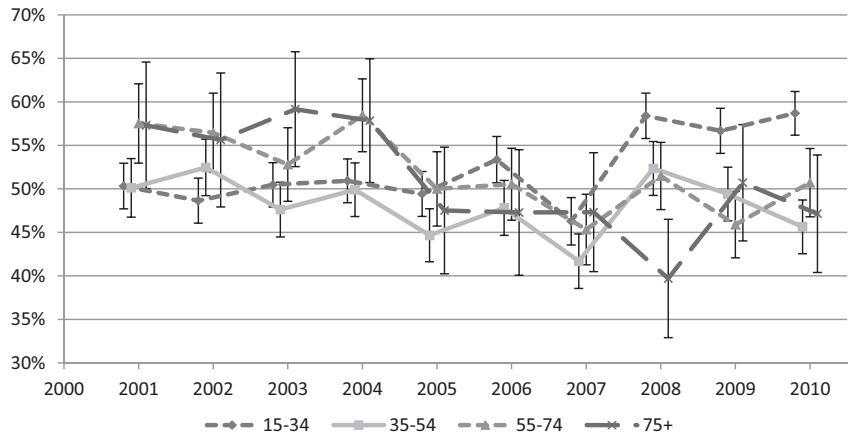

Fig. 8. Age-related trends in participation in club sport for females as a proportion of those that participated in organised S&R, 2001–2010.

In general, there were similar trends in participation across the 10-year period for both males and females. Participation rates in *any* type of S&R significantly increased in 2010 compared to 2001 for both males and females. These increases were generally evident amongst the older cohorts, but not in the younger cohorts. The reason for this age-related difference across time is unknown, however it could be that this cohort has become more aware of the health benefits of participation in PA and/or they have more discretionary time (Moschny, Platen, KlaaSZen-Mielke, Trampisch, & Hinrichs, 2011). The latest figures from 2010 show that over 80% of males and females were active in the previous year. However, it must be noted that information on frequency and/or intensity of activity were not captured, which are important from a PH perspective to determine whether individuals are meeting physical activity guidelines to achieve health benefits.

Of those people who participated in *any* S&R, *organised* was the context of participation for a large percentage of the younger cohorts. Over half of males and females aged 15–34 years who participated in *any* S&R participated in an *organised* context during the 2010 survey period (64% and 58% respectively). Fewer adults from the older aged cohorts participated in an *organised* context. As identified by (Hajkowicz et al., 2013) sport provision in Australia continues to focus on competition, is not always flexible with respect to delivery times, and it is largely organised. Furthermore Australian sport at times ignores the needs of those who feel that they are not capable of, or are anxious about, participating in sport. In other words, it is more likely for young, strong and healthy Australians to be catered for by organisations offering physical activities and sport than it is for older citizens.

With respect to participation in *club* sport as a proportion of those participating in *organised* S&R, this was not dominated by the younger cohorts, except for females in 2010. For males there was very little difference between age groups with proportions ranging from 72% to 75% in 2010. For those participating in *organised* PA, males were more likely than females to participate in *clubs*. Females' participation in *club* sport ranged from 42% for the oldest cohort to 58% in the youngest cohort for 2010. This is a comparable finding to that of other international studies where males are reportedly more active in sport than females (Birchwood et al., 2008; Palacios-Cena et al., 2012).

It is often reported that sport participation decreases as people age (Birchwood et al., 2008; Palacios-Cena et al., 2012). In a study of people aged 16 to 31 years, the steepest declines were between the ages of 16/17 and 23 (Birchwood et al., 2008). Similarly amongst people aged 15 to 74 years, the largest declines in sport participation were between the 15–25 and 26–35 year old cohorts (Palacios-Cena et al., 2012). However, in the present study *club* participation as a proportion of *organised* participation was higher for younger females than it was for older females, but this trend was not observed with respect to males.

The Australian *organised* and *club* participation for those in the younger cohort did not significantly increase over the past decade, except for *club* participation as a proportion of *organised* participation, for younger females. Other countries have also reported increases in sport participation for young females. In Finland, participation in organised sport among a cohort of people aged 12–18 years increased (2003–2007), and more so for females than males; however unorganised LTPA did not increase (Laakso et al., 2008). Other countries such as Spain have also seen increases in adult sport participation from 46% for males in 2000 to 52% in 2010, and for females from 27% to 33% (Palacios-Cena et al., 2012). These increases were evident in young and middle aged adults but not older adults (Palacios-Cena et al., 2012). It has also been suggested that the increases in participation are related to sports clubs offering a wider range of options (Eíðsdottir et al., 2008; Laakso et al., 2008). It is possible that there were not increases in *organised* or *club* participation in the Australian context because many sports programmes may not be providing an environment that promotes lifelong involvement in sport (Côté, Baker, & Abernethy, 2007); particularly as many are requiring higher levels of investment at younger ages and discouraging children from participating in a diversity of activities (Gould & Carson, 2004; Hecimovich, 2004).

A particular feature of the data was that in general there were significant decreases between 2004 or 2005 and 2007 in participation in all three contexts and for all age groups. In the context of *organised* and *club* participation this decline was

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more prominent in females than males. It is difficult to conjecture why this occurred. Female *club* participation was often lowest in the youngest cohort. There is evidence that females with young children are less likely to participate in sport than those who do not have young children (Birchwood et al., 2008). However, the number of Australian women aged 15–34 participating in club sport as a proportion of organised participation significantly increased between 2007 and 2010. In Spain whilst increases in sport participation for adult males and females were reported, increases did not occur for women aged 15–35 years (Palacios-Cena et al., 2012). As Birchwood suggests, life events can impact on participation, but predispositions also affect how individuals respond, and that a person's family and culture can influence participation (Birchwood et al., 2008).

As expected, younger people were consistently significantly more active than the older cohorts, for *any* S&R and *organised* participation; however this was not the case for *club* participation for males. Latest figures show that 64% of younger males, and 43% of older males who participate in PA are active through organised PA. For females these figures are lower with rates of 58% for the youngest and 42% for the oldest cohort. Of those participating in organised activities, 76% of young males and 72% of older males participated in *club* sport, compared to 59% of young females and 47% of older females. *Club* as a proportion of *organised* has increased significantly over the past decade for those in the youngest cohort, especially for females. We know that young persons who participate in sport are more likely to be physically active as adults (Scheerder et al., 2006; Telama, Yang, Hirvensalo, & Raitakari, 2006). Furthermore, there is evidence that if people are still active through sport at age 23 years, then they are more likely to remain participating in sport throughout their adult lives (Birchwood et al., 2008).

In summary, there were some positive trends in *any* S&R participation, but in general not for *organised* or *club* participation. Of those people who participate in *organised* S&R there was a significant increase in participation among younger males and females in a *club* context over the past decade, more prominently so for females. A large proportion of organised participation is via club participation, especially for males, and males participate more regularly in sport than females.

When investigating participation more closely, there are some distinct differences in relation to time, gender, age and the context of participation. A recent national report highlights the changing nature of Australian sport participation and suggests that the sport sector needs to respond accordingly to these changes (Hajkowicz et al., 2013). In particular, the sector must be mindful of different desires and motivations of population groups to participate in PA and sport (Hajkowicz et al., 2013). There is some evidence from this study to support reports that people are moving towards individual PA pursuits and drifting away from the traditional organised sports club (Eime, Harvey, Sawyer, et al., 2013; Hajkowicz et al., 2013). Our data shows that young people may be introduced to sport through the club system, but that with advancing age participation may be sought outside the boundaries and restrictions of sport and PA organisations. This is likely to have various consequences including participant development and elite pathways and individual health.

Whilst this study provides some insight into trends over time in organised and club-based sport participation, a thorough understanding is far from being established. There is a lack of depth in the information available about organised and club-based participation components of S&R. For instance, we are unaware of any comprehensive overviews of programmes, facilities, and where participation in community sport occurs. This limits the ability of the S&R sector to make important strategic decisions in sport policy that seek to achieve PH outcomes. There is a need for broad national surveys such as ERASS to be supplemented by in-depth studies of sport participation, including more information about programmes, facilities, frequency and intensity.

From a PH perspective, as long as people are sufficiently active for health gain, broadly the context of participation would not be important. However, there is a growing body of evidence of additional health benefits of participation in sport compared to PA in general (Eime et al., 2010; Eime, Young, Harvey, Charity, Payne, 2013a; Westerbeek, 2009). Some unique features of sport include youth appeal, the facilitation of social interaction and other positive health impacts (Westerbeek, 2009). Two recent systematic reviews reported that sport participation, by children, adolescents and by adults, was associated with improved psychological and social health, above and beyond those gained from other forms of PA (Eime, Young, Harvey, Charity, Payne, 2013a; Eime, Young, Harvey, Charity, Payne, 2013b). For adults, greater mental and physical health benefits have been found amongst club sport participants than those engaged in individual pursuits (Eime et al., 2010).

To move forward, we need quality sport participation data to provide the evidence to inform well-structured programmes and policies to meet the community needs. This is not possible if sport participation remains hidden in the broader PA context, or is not investigated in more detail. The current situation is that individual sporting organisations collect participation data; however, there is no systematic integration of these data. The integration of sports participation data could provide a sector-wide approach to understanding participation for SM policy and programme development. In addition it could provide a platform for sport to play more strategically within the PH domain. Sport is falling behind the broader PA field where there is extensive integration of data providing evidence and knowledge to inform policy. Hallal et al. (2012) recently published PA levels and trends for adults from 122 countries and for adolescents from 105 countries. From extensive studies such as these, it can be stated that 31% of adults worldwide are physically active (Hallal et al., 2012).

The nexus between PH and SM needs to be further developed, as currently there is a disconnect (Rowe et al., 2013). On the one hand, there are many specific PA interventions to improve population health, and on the other hand sport seems omnipresent in the community; however, many people do not actively participate in sport. We concur with others (Rowe et al., 2013) that a balance is required through the integration of PH and SM fields of research to better understand sport

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participation and its health benefits. For example Rowe et al. (2013) highlighted that SM could benefit from adopting a Socio-Ecological theoretical approach, which has been used extensively in the PH field to understanding sport participation behaviours. In doing so, the field of SM can learn from PH research approaches to understanding participation trends and determinants. Furthermore it has been advocated for increased research attention on the full spectrum of participation from community to elite that would then inform policy and funding developments (Rowe et al., 2013). Specifically it has been suggested that SM research should focus on mass participation sports that can act as interventions promoting health (Henderson, 2009). We may then better understand why and how more people could be active in sports clubs, which is important for SM, and what are associated health benefits with this level of activity, which is important for PH. By integrating the two fields, sport has the potential to grow and sustain participation/membership and contribute to a healthier nation. The need for a cross-sectoral approach (sport and health) has been previously advocated (Westerbeek, 2009). In this approach, cross-departmental (government) planning is required to maximise health benefits of participation in sport (Westerbeek, 2009).

5. Strengths and limitations

A major strength of this study is that it is based on data from a broad representative national survey, with a large enough sample each year to provide sufficient statistical power to detect quite small differences in participation rates between cohorts and small changes in participation rates within cohorts. From the SM perspective, a limitation is that frequency data does not discriminate between the different settings of participation. For example we do not have knowledge of how many times people participated in different settings that could be useful for programme and facility planning and development. From the PH perspective, a limitation is that no data was collected regarding intensity of participation, which is an important aspect for health; consequently, we cannot understand the specific health benefits of the participation.

The reported ERASS interview schedule (Australian Sports Commission, 2010) is clearly focused on PA on the part of the individual being interviewed. However, it is conceivable that some respondents may have included participation as a volunteer in organised or club activities as coaches or parent leaders for their children. Of course, umpiring and coaching may involve PA, and we would expect that respondents would draw this distinction and report accordingly. However, no instructions regarding this potential issue are included in the reported ERASS interview schedule. While we think it is unlikely, any such misconceptions could have the effect of increasing the reported level of particular types of activity in particular age ranges.

6. Conclusion

In conclusion, there were some significant increases in S&R participation in general over time, however this was not the case in the specific contexts of organised and/or club participation which remained steady across the decade. Whilst surveys such as these provide broad population trends we also need more detailed sport specific data to provide the evidence for programme and policy development. SM could benefit from further integration with PH and learn from available extensive research on PA participation. Whilst an abundance of sport-specific data is collected by sports organisations, it is not integrated. It is advocated that a sector-wide approach to monitoring sport participation and trends is driven and/or supported by State and National Governments, so that decisions regarding the development and implementation of strategies to increase and sustain S&R participation through sports clubs can be driven by a more detailed evidence-based approach.

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