

# Does Sports Club Participation Contribute to Health-Related Quality of Life?

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## ABSTRACT

EIME, R. M., J. T. HARVEY, W. J. BROWN, and W. R. PAYNE. Does Sports Club Participation Contribute to Health-Related Quality of Life? *Med. Sci. Sports Exerc.*, Vol. 42, No. 5, pp. 1022–1028, 2010. Given the social nature of participation in sport, we hypothesized that club sports participants would have greater well-being and quality of life than participants in other forms of physical activity (PA). **Purpose:** The purpose of this study was to examine health-related quality of life and life satisfaction in women who participate in three contrasting forms of PA: club sport, gym activities, and walking. **Methods:** This was a cross-sectional study of the relationship between type of PA setting and measures of health-related quality of life (Short-Form Health Survey [SF-36]) and life satisfaction in 818 women living in rural Victoria, Australia, in 2007. Data were also compared with those from a normative sample of 2345 women. **Results:** After adjustment for potential confounders (age, education, marital status, children aged <16 yr, perceived financial stress, and level of recreational PA), four of the eight SF-36 subscales, the SF-36 mental health component summary score, and life satisfaction were significantly higher in the club sport group than that in the other groups. **Conclusion:** Although cross-sectional research cannot establish causal links, the results suggest that participation in club sport may enhance the health benefits of PA. **Key Words:** SPORTS, WOMEN, RURAL, PHYSICAL HEALTH, MENTAL HEALTH, PHYSICAL ACTIVITY

Several studies have reported on the associations between participation in physical activity (PA) and health-related quality of life (HRQoL) (5,7,8,15,17,19,21). Most of these have used the 36-item Short-Form Health Survey (SF-36) (33), which is a comprehensive, validated measure of HRQoL, with eight subscales (physical functioning, role physical, bodily pain, general health, vitality, social functioning, role emotional, and mental health) and two summary scores (the physical component summary (PCS) and the mental component summary (MCS)) (32,33). Most previous studies have reported positive associations between PA and general health (5,15,19), social functioning (5,19), and vitality (5,19,35) subscales in general population samples, but with the exception of walking (5), they have not examined the relationships between participation in different types of PA and HRQoL.

In Australia, most of the evidence on relationships between PA and HRQoL has come from the Australian Longitudinal Study on Women's Health (ALSWH) (8,9,19).

Because the ALSWH uses a generic measure of participation in walking and in moderate- and vigorous-intensity PA, the data cannot be used to provide insight into the associations between different types of PA, such as playing sport and going to the gym, and HRQoL. This is important because in Australia nearly 30% of people 15 yr and older participate in organized sport or recreation through a community sports club or organization (2).

A positive aspect of participation in club-based sport is that those adults involved in sports clubs are significantly more likely to achieve recommended levels of PA than those who are not (16). As community sports clubs provide opportunities for social interaction through both structured (organized and competitive) and unstructured (social) participation in sport (14), it has been suggested that involvement in club sport may impact positively on social and mental well-being (27,29,31). For example, clubs may work as social catalysts, leading to enhanced involvement and participation (24), with potentially greater physical and mental health benefits from club sport participation than from other forms of PA (26,30). It has been reported that elements of social and mental well-being, such as social connectedness, social support, peer bonding, increased life satisfaction, and self-esteem, may reduce stress, anxiety, and depression and can be enhanced by participation in organized sport (10,26,27,29,30). Relationships between participation in club-based sport and HRQoL have not however been examined.

The sport sector is beginning to adopt health promotion principles through the establishment of strategies such as

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the development of healthy and welcoming environments (13). The healthy and welcoming environments strategy incorporates social support principles and policies through a “welcoming and inclusive environment” component that focuses on engagement and maintenance of club participants (13). These principles are well supported in the PA literature because social support has been identified as a determinant for PA engagement and maintenance, and the promotion of PA in a social context is endorsed (27,28).

Because women are less likely to be physically active than men (3) and given that women living in rural areas have poorer health (34) and higher rates of overweight and obesity (4,9) than their metropolitan counterparts, women living in rural areas were the focus of this study. Among adult women living in Victoria, walking is the most common form of PA, with 32.7% reporting participation in walking for exercise. The next most common type of PA for women in this age group is aerobics/fitness (15.2%). The most popular sports played by Victorian women are netball (5.2%) and tennis (4.9%). Of all types of sports and physical recreation activities, these sports rank fourth and fifth in participation rates (2). Because of their relative popularity in Victoria, tennis and netball were selected as the club sports of interest, and walking and gymnasium-based activities were selected as the other forms of activity.

The main aim of this research was to compare levels of HRQoL and life satisfaction in members of sporting clubs and those who participate in other common forms of PA. Given the suggested benefits of participation in sports clubs and teams on many aspects of social and mental well-being, we hypothesized that HRQoL and life satisfaction would be greater among sports club participants than among those who participate only in the more individual PA and members of a normative population of women.

## METHODS

**Design.** This cross-sectional survey was designed to compare HRQoL and life satisfaction in female participants in three types of PA: active participation in a sport club (tennis or netball), in gymnasium-based programs, and in leisure-time walking (alone, in a group of up to three participants, or with a dog).

**Participant recruitment.** Participants were recruited from three settings in and around a rural city (population = 88,137) in the state of Victoria, Australia: tennis and netball clubs, commercial public gymnasiums, and an established walking track around a lake. Women in each setting were approached by the researchers either before or after their activity. If they were 18 yr or older, they were invited to complete the written self-report survey, which took up to 10 min to complete. Survey participants were informed that the study sought to investigate relationships between PA and well-being in women. In accordance with University Ethics Committee regulations, participant consent was

implied by completion of the survey. The research was endorsed by two relevant sports governing bodies (Tennis Victoria and Netball Victoria), local associations, and gymnasium managers.

Data from the “young” and “mid-age” cohorts of wave 4 of the Australian Longitudinal Study on Women’s Health (ALSWH) (37) were used as a reference group for comparative purposes. Data from ALSWH participants living in rural Victoria who indicated that their health did not limit them in bathing or dressing themselves were included.

**Measures.** The outcome measures (dependent variables [DV]) were the eight SF-36 subscales and the PCS and MCS summary scores (33) and the ALSWH life satisfaction score (37,38). For the life satisfaction score, respondents were asked how satisfied they are with what they have achieved in each of nine areas of their lives: work, career, study, family relationships, partner/closest personal relationship, friendships, social activities, and motherhood/children. Responses are on a four-point Likert scale: very satisfied, satisfied, dissatisfied, and very dissatisfied. Responses to the nine items were averaged to derive a mean score for life satisfaction, with a higher score indicating greater life satisfaction.

For all DV, a higher score represents a greater level of health-related well-being. The primary explanatory variable was type of activity. Many survey respondents participated in more than one of the three forms of activity, and many sports club participants participated in sports other than the setting in which they were recruited and surveyed. In light of the hypothesized benefit of involvement in structured PA settings such as clubs on participant social and mental well-being, participants were allocated to one of three mutually exclusive categories, in descending order of the level of organization and structure of the setting. These were as follows: club—all sports club participants (who may also participate in gymnasium or walking), gymnasium—gymnasium participants who are not sports club participants (but may be walkers), and walk—walking participants who are not gymnasium participants or sports club participants. The first category was predominantly made up of tennis and netball players recruited in club settings but also included a small number of players of other sports recruited in the gymnasium or walking settings.

The potential confounders were age, education level, marital status, having children aged less than 16 yr, perceived financial stress, and overall recreational PA level. The last of these was calculated as the total duration of recreational PA in sporting club, gymnasium, and walking settings in the week before the survey.

**Statistical analyses.** ANOVA was used to investigate differences between groups with respect to the 11 DV. ANCOVA was used to adjust differences for the effects of the potential confounders. The primary three-group analysis was based on the data collected in the current study, with data from the club category used as the referent for pairwise comparisons with the other two groups. A separate

four-group analysis, which also included the ALSWH data, was conducted to compare the three study samples with the independently established norms for rural Victoria from the ALSWH. This analysis was undertaken separately for two reasons. First, for all DV, the variance within the more broadly based ALSWH group was larger than for the three study groups, which violates the assumption of constant error variance underlying ANOVA and is likely to result in overestimation of *P* values and hence lead to conservative conclusions regarding differences between means. Second, it was not possible to include overall PA level and education level as confounders in the four-group analysis because in the ALSWH a different measure of overall PA was used, and concurrent data on education level were not available for one of the two cohorts used for reference (midage).

There is evidence to indicate that a difference of around two to three points on the standardized MCS scale of the SF-36 (for which the normative SD = 10) represents a clinically significant difference in well-being (1,19). Setting  $\alpha = 0.05$ , power = 0.80, SD = 10, and a target difference of two points between adjacent group means led to target sample sizes of approximately 122 in each of the three activity categories or a total sample size of 366. However, because of the hierarchical relationship of the categories and in the absence of any prior information about the proportions of participants engaged in multiple types of activity, it was anticipated that many participants recruited in gymnasium or walking settings would be allocated into the club group, leading to imbalance and consequent loss of efficiency. To achieve adequate sample sizes in each of the three subsamples, the overall recruitment target was doubled to 732, and the proportions in the gymnasium and walking categories were monitored as sampling proceeded.

The research was approved by the University of Ballarat Human Research Ethics Committee.

## RESULTS

Of 1173 persons approached, 818 (69.7%) completed the survey. Response rates were 92.3% (358 of 388) in tennis and netball clubs, 75.5% (225 of 298) in commercial public gymnasiums, and 48.3% (235 of 487) for walkers. After assignment of each participant to the appropriate PA group, as described in the Methods section, and the exclusion of 25 respondents who provided insufficient information, the sample sizes are as shown in Table 1.

The demographic characteristics of the women in the three samples and the participants in the ALSWH are shown in Table 1. The group with the highest mean age was the ALSWH group. Women in the ALSWH group were also more likely than women in the other groups to be in a married or a de facto relationship. Those in the walking group were more likely to be married or in a de facto relationship than those in the club group. University-educated women were well represented, particularly in gymnasium and walking groups. Walking participants had lower overall levels of recreational PA than sports club or gymnasium groups.

In unadjusted analyses (results not tabulated), the three-group comparison showed significant differences between the club group and the gymnasium and/or walking group(s) for 8 of 11 DV, with the club group having higher scores in each case.

Notwithstanding the fact that the groups differed with respect to the characteristics summarized in Table 1, most of the significant difference in the DV between groups persisted after adjustment for any effects of these characteristics.

TABLE 1. Characteristics of participants.

	Group <sup>a</sup>			
	Club	Gymnasium	Walk	ALSWH
Sample size ( <i>n</i> )	499	185	109	2345
Age, mean $\pm$ SD (yr)	33.9 $\pm$ 13.7	38.5 $\pm$ 12.9	44.5 $\pm$ 13.2	46.8 $\pm$ 11.9
Married/de facto (%)	54	57	73	98
Children 16 yr and younger (%)	39	32	45	23
Total duration of recreational PA in sporting club, gymnasium, and walking settings in the week before the survey, mean $\pm$ SD (h)	5.6 $\pm$ 5.3	5.0 $\pm$ 6.0	2.5 $\pm$ 2.6	NA
Ability to manage on income				
It is impossible (%)	2	1	3	2
It is difficult all the time (%)	10	7	10	9
It is difficult some of the time (%)	24	26	20	29
It is not too bad (%)	47	46	42	44
It is easy (%)	17	20	25	15
Highest educational level attained				
Secondary school not completed (%)	14	12	18	NA
Completed secondary school (%)	33	20	15	NA
Trade/apprenticeship/certificate/diploma (%)	21	21	23	NA
University degree (%)	23	25	25	NA
University higher degree (%)	10	21	20	NA

Data are presented as mean  $\pm$  SD or percent.

<sup>a</sup> Club group: all sports club participants, including those who also participate in gymnasium or walking. Gymnasium group: includes gymnasium participants who also walk. Walking group: consists of those who walk only. ALSWH group: young and midage rural Victorian cohorts from wave 4 of the ALSWH. NA, not available.

TABLE 2. Mean values of 11 measures of health-related quality of life (HRQoL): by group, adjusted for six confounders (age, education,<sup>a</sup> marriage, children, financial stress, overall level of recreational PA<sup>b</sup>).

	Group <sup>b</sup>	n	Mean	95% CI	Significance <sup>c</sup>	Significance <sup>d</sup>
SF-36 physical functioning scale	Club	455	89.90	86.65–93.15	Referent	*
	Gymnasium	157	88.93	85.04–92.82		
	Walk	87	87.55	83.09–92.02		
	ALSWH	2245	83.53	81.96–85.10		
SF-36 physical role functioning scale	Club	458	86.79	81.37–92.21	P = 0.477 Referent	Referent P < 0.001
	Gymnasium	159	79.82	73.36–86.29		
	Walk	89	79.64	72.24–87.04		
	ALSWH	2250	71.13	68.04–74.21		
SF-36 bodily pain scale	Club	459	77.03	72.92–81.13	P = 0.008 Referent	Referent P < 0.001
	Gymnasium	159	76.81	71.94–81.68		
	Walk	89	74.03	68.47–79.59		
	ALSWH	2260	68.08	66.12–70.04		
SF-36 general health scale	Club	457	70.98	67.44–65.46	P = 0.477 Referent	Referent P = 0.003
	Gymnasium	158	67.58	63.33–71.79		
	Walk	90	68.08	63.25–71.92		
	ALSWH	2229	67.95	66.20–69.69		
SF-36 vitality scale	Club	459	62.06	58.66–65.46	P = 0.090 Referent	Referent P = 0.25
	Gymnasium	158	56.58	52.51–60.65		
	Walk	89	57.50	52.51–60.65		
	ALSWH	2255	51.63	52.84–62.17		
SF-36 social functioning scale	Club	457	81.67	77.09–84.26	P = 0.001 Referent	Referent P < 0.001
	Gymnasium	157	76.84	72.58–81.11		
	Walk	89	76.16	71.31–81.01		
	ALSWH	2260	74.19	72.24–76.14		
SF-36 emotional role functioning scale	Club	457	74.78	68.91–80.65	P = 0.022 Referent	Referent P < 0.001
	Gymnasium	159	69.71	62.72–76.71		
	Walk	88	68.83	60.81–76.85		
	ALSWH	2248	72.45	69.46–75.44		
SF-36 mental health scale	Club	458	71.25	68.33–74.18	P = 0.091 Referent	Referent P = 0.019
	Gymnasium	158	67.17	63.66–70.68		
	Walk	90	67.96	63.96–71.96		
	ALSWH	2253	67.26	65.75–68.77		
SF-36 physical health component score (PCS)	Club	446	53.27	51.82–54.72	P = 0.008 Referent	Referent P = 0.001
	Gymnasium	155	52.81	51.08–54.54		
	Walk	82	52.44	50.45–54.54		
	ALSWH	2202	49.42	48.62–50.21		
SF-36 mental health component score (MCS)	Club	446	45.72	43.88–47.55	P = 0.587 Referent	Referent P = 0.004
	Gymnasium	155	43.14	40.95–45.33		
	Walk	82	43.87	41.35–46.39		
	ALSWH	2202	43.96	43.01–44.90		
Life satisfaction	Club	460	3.13	3.04–3.22	P = 0.008 Referent	Referent P < 0.001
	Gymnasium	158	2.97	2.86–3.07		
	Walk	90	3.06	2.94–3.17		
	ALSWH	2235	2.91	2.87–2.96		

<sup>a</sup> The four-group analyses (see Note 4) did not incorporate adjustment for overall level of recreational PA and educational qualifications. This is due to incompatibility between the measures used in the ALSWH and in this study.

<sup>b</sup> Club group: all club participants, including those who also participate in gymnasium or walking. Gymnasium group: includes gymnasium participants who also walk. Walking group: consists of those who walk only. ALSWH group: young and midage rural Victorian cohorts from wave 4 of the ALSWH.

<sup>c</sup> Based on a three-group ANOVA (ALSWH excluded) with six covariates. The club group is the referent for pairwise comparisons.

<sup>d</sup> Based on a four-group ANOVA (ALSWH included) with four covariates. The ALSWH group is the referent for pairwise comparisons.

\* Pairwise  $P < 0.05$ .

Table 2 shows that after adjusting for six potential confounders, there were significant differences between groups for 6 of 11 DV: four of the SF-36 subscale scores (physical role functioning,  $P = 0.008$ ; vitality,  $P = 0.01$ ; social functioning,  $P = 0.022$ ; and mental health,  $P = 0.009$ ) as well as for the mental health component score ( $P = 0.008$ ) and the life satisfaction score ( $P = 0.002$ ). In each case, the club group had the highest mean score, with significant

differences between club and gymnasium groups for all six variables and between club and walk groups for three variables.

The four-group analysis showed significant differences between the ALSWH group and the club group for all variables except the general health subscale score. In each case, the club group had a significantly higher mean score. In addition, there were significant differences between ALSWH



and gymnasium groups for bodily pain, vitality, and PCS and between ALSWH and walk groups for life satisfaction. In all cases, the study groups had higher mean scores than the normative ALSWH group.

## DISCUSSION

This is the first study to examine relationships between HRQoL, life satisfaction, and participation in different types of PA. The results showed that club sport participants had higher scores on the majority of indicators than gymnasium and walking participants. The hypothesis that the HRQoL and the life satisfaction of sports club participants would be greater than those who participated in only gymnasium and/or walking activities was generally supported. Although there were considerable differences between the groups with respect to six potential confounders, after adjusting for confounders, most DV were significantly higher in the sport club group than that in the gymnasium and/or walk groups. Notably, the mean difference in MCS scores between sports club and gym groups (adjusted 2.58) is of a magnitude that has been identified as representing a clinically significant difference in mental well-being (1,19).

A further feature of this study was the addition of the ALSWH sample of women that allowed a comparison with HRQoL levels in a normative sample of women; for most measures, scores were higher in the club group than that in the ALSWH sample. It was not surprising that there was only one significant difference between the walking group and the ALSWH sample because the latter group included a large proportion of women who walk (6). Blacklock et al. (5) also found that HRQoL scores were similar for their walking and general PA (inclusive of walking) groups, with the exception that general health scores were greater for the general PA group than for the walking group.

Our results indicate that participation in club sport is associated with better levels of mental well-being and life satisfaction than are seen in women who engage in predominantly individual-based activities such as going to a gymnasium or walking. Not surprisingly, there were no significant differences between the physical health (bodily pain and physical functioning) of the three groups, given that all forms of PA confer physical benefits, and a certain level of physical health is required to participate in PA generally. The club group as defined in this study included some women who also participated in gymnasium-based and walking activities. Nevertheless, there were many significant differences between the club group and the gymnasium group. As Blacklock et al. (5) suggest, in reference to general health, it seems that doing PA over and above regular walking may produce additional benefits.

The results of the current study support the notion that being active in a socially engaged manner, although not preferable for all, can contribute to mental well-being (27,29,31), with specific evidence of improvements in HRQoL and life satisfaction. As has been reported by other

researchers (10,26,27,29,30), these mental health benefits may result from the enhancement of social connectedness, social support and peer bonding, life satisfaction, and self-esteem, which may be provided by club sport.

Several researchers make a strong argument that enjoyment of PA is critical for mental health gain (10,28). Furthermore, if an activity is enjoyable and coupled with social support, there is an increased likelihood of maintenance (10,28). When sports clubs provide a welcoming and an inclusive environment, it is possible that engagement in club sport may enhance this key element to promote sustainable forms of PA.

With reference to ecological models (25), research into PA, particularly into the adoption and maintenance of PA, has focused primarily on the intrapersonal and interpersonal aspects and not on the organizational and physical environments. Improved understanding of supportive organizational environments in relation to choices of PA could assist in the development of strategies for increasing PA for the general population, with particular reference to the promotion of participation in club sport. The sporting sector has only recently been identified as a potential setting for health promotion (12,13,18). Given the large number of participants, the extent of community reach, and the “healthy participation in PA” culture of the community sport sector, there is significant potential for this sector as a setting in which to promote health to the general population (11,12,23).

Recent efforts to curb obesity levels have focused heavily on walking as a form of PA, with intrapersonal, interpersonal, and environmental promotional strategies being used. Walking is inexpensive and can be easily carried out in a range of settings. It appears, however, that walking alone may not produce the additional mental health benefits that can potentially be gained through club sport participation. Strategies should therefore be developed and promoted to encourage people to participate in club sport where both mental and physical health benefits can be achieved. In saying that, sporting clubs should develop specific strategies to encourage and to welcome involvement from a wide variety of population groups and levels of ability. In addition to efforts to encourage currently inactive people to become more active, greater effort to maintain participation is required for those who commence participation in sport club-based PA. Social support through interaction with others can clearly be beneficial. Promotion of sport participation that includes social interaction may assist engaging the least active population groups (22).

**Study limitations.** Although this study has extended our understanding of the relationships between PA and HRQoL, the cross-sectional design means that better health outcomes cannot be attributed directly to involvement in a sporting club. The converse could also apply—that those with better health are more attracted to participation in sports clubs. Because participation in the survey was voluntary, it is also possible that there could be a bias due

to participants willing to answer questionnaire having higher HRQoL than those who declined participation. Any such response bias might have also affected the strength of association between type of PA and HRQoL because the response rate was highest in the sport club group and lowest in the walking group. Furthermore, the delimitations of the study, including the particular geographical location and PA settings selected, potentially limit the generalizability of the results.

## CONCLUSION

The World Health Organization defines health as the state of complete physical, mental, and social well-being (36). We have shown that participation in sport is associated with better mental well-being than other forms of PA. Although cross-sectional research cannot definitively establish a causal link, our results suggest that sport club settings are likely to enhance the health benefits of PA and hence provide support for the notion that club sport is a beneficial

setting for health promotion. Given the obesity epidemic in the general population (20), the fact that sport is available to general population, and the associated benefits of the social nature of participation, it is recommended that sport for health is promoted. Many different sports are available and accessible to people throughout the community. However, sport clubs and organizations must develop strategies to attract people who face health and social barriers to participation, if they are to capitalize on the opportunities of promoting health through sport participation.

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The results of the present study do not constitute endorsement by the American College of Sports Medicine.

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