ORIGINAL ARTICLE

Social Physique Anxiety and physical activity behaviour of male and female exercisers

RUNNING HEAD: SPA and PA behaviour of males and female exercisers

KEYWORDS: Body Composition, Exercise, Fitness, Gender, Health.

Abstract

Despite females consistently reporting greater Social Physique Anxiety (SPA), previous literature has yet to demonstrate whether SPA gender differences are linked to the way males and females perform physical activity. This study investigated an association between SPA and physical activity frequency, history of exercise, and physical activity intensity. Participants were represented by currently active users (N = 33 males; N = 31 females) of an on-campus university-run gym and completed a background physical activity questionnaire and the 9-item Social Physique Anxiety Scale. Participants also performed an exercise session at a self-selected level of exertion, with the intensity of each session measured via heart rate monitor. SPA was not associated with physical activity frequency, history of exercise (length of gym membership), or intensity for male and female exercisers. With respect to male participants, females reported higher SPA and a preference for performing higher intensity physical activity. Females and males also indicated a preference for performing aerobic and anaerobic physical activity respectively. Our findings suggest the experience of SPA does not deter body-conscious individuals from the performance of regular physical activity. Findings also suggest the discrepancy in male and female SPA is not linked to differences in the way physical activity is performed.

Introduction

The performance of regular physical activity can be remarkably beneficial to long-term physiological (Blair & Morris, 2009; Jeon, Lokken, Hu, & Van Dam, 2007; Wilson, Ellison, & Cable, 2016) and psychological well-being (Kowalski, Crocker, & Kowalski, 2001; McAuley, Blissmer, Katula, Duncan, & Mihalko, 2000). Nevertheless, a considerable proportion of the general population commonly report failing to meet basic weekly physical activity recommendations (Townsend et al., 2012). Social Physique Anxiety (SPA) (Hart, Leary, & Rejeski, 1989) has previously been identified as a potential barrier to regular physical activity participation for body conscious individuals (Kowalski et al., 2001; Treasure, Lox, & Lawton, 1998), and refers to a negative affective response to the perception that others are unfavourably evaluating aspects of one's physique (*e.g.*, highlighting the presence of excess body fat, assessing evidence of muscular toning, and the general assessment of body proportions) (Hart et al., 1989). SPA's origins are deeply rooted in impression management and self-presentation theory (Leary, 1992), with an individual striving to present themselves in a socially desirable manner in order to reap perceived associated social benefits (Benzeval, Green, & Macintyre, 2013; Weiss & Feldman, 2006). Those with heightened self-presentational concerns may opt to avoid situations where they believe their ability to promote a desirable social impression may be compromised (Brewer, Diehl, Cornelius, Joshua, & Van Raalte, 2004). Accordingly, individuals with high SPA may be deterred from performing regular physical activity as they are apprehensive about displaying their physique in a physical activity context where it is likely to be scrutinized (Sabiston, Pila, Pinsonnault-Bilodeau, & Cox, 2014). Females of all ages have consistently been demonstrated to experience greater SPA compared to similar aged males (Chu, Bushman, & Woodard, 2008; Kowalski et al., 2001; Treasure et al., 1998). However, heightened female SPA has yet to be linked to differences in physical activity behaviour (Chu

et al., 2008; Lanfranchi, Maïano, Morin, & Therme, 2015).

SPA and physical activity frequency

A clear obstacle when attempting to delineate an association between SPA and physical activity frequency relates to the potential for similarly high levels of body-image concern to manifest as contradictory physical activity behaviour (Kowalski et al., 2001; Leary, 1992). For example, highly body-anxious individuals may perform significantly less physical activity (than those with low SPA) as they opt to avoid fitness environments due to the heightened threat of negative interpersonal evaluation (Hart et al., 1989; Sabiston, Sedgwick, Crocker, Kowalski, & Mack, 2007). In contrast, high SPA individuals may be motivated to exercise frequently in an attempt to improve the appearance of their physique and thus reduce the prospect of experiencing future body-related anxiety (Sabiston et al., 2007). The commonly reported non-significant association between SPA and physical activity frequency (Chu et al., 2008; Crawford & Eklund, 1994; Lanfranchi et al., 2015) suggests these influences counterbalance each other in a manner that prevents a directional association between SPA and physical activity frequency from being suitably discerned. The distinction between individuals who feel similarly high levels of evaluative threat but choose different coping mechanisms, withdrawal or adherence, is becoming an increasingly important variable in identifying the influence of SPA on physical activity behaviour (Focht & Hausenblas, 2004). As is the identification of factors that may influence this decision (Raedeke, Focht, & Scales, 2007).

Previous research has primarily investigated SPA in relation to variations in short-term (*i.e.*, weekly) physical activity frequency (see Chu et al., 2008; Crawford & Eklund, 1994; Lanfranchi et al., 2015). In respect of these studies' non-significant findings, it may suggest operationalizing exercise frequency to represent such a short period of time may

provide a poor representation of an individual's true exercise behaviour. Whilst individuals with high SPA may not always appear to engage in more or less frequent physical activity on a weekly basis, they may be less likely to adhere to a consistent exercise programme over a prolonged period of time (Mülazimoğlu-Balli, Koca, & Aşçi, 2010). For example, Mülazimoğlu-Balli et al. (2010) reported participants presenting with the lowest SPA also reported a greater volume of weekly physical activity and had been performing regular physical activity for a considerably longer period of time than those with higher SPA. It should also be considered physical activity frequency may remain constant, whilst individual physical activity sessions can fluctuate considerably in terms of duration and intensity (Cox, Gorely, Puddey, Burke, & Beilin, 2003). Individuals reporting similar physical activity frequency but of longer duration and higher exercise intensity may be expected to reap greater physiological benefits from their physical activity performances, which may have important consequences for SPA. To date, there has been a surprising lack of investigation into a potential association between SPA and physical activity intensity. Ekkekakis'(2003) dual-mode theory of physiological exertion suggests an individual's ability to seek and form negative cognitive appraisals becomes markedly reduced during the performance of vigorous intensity physical activity. In this regard, it may be possible those with high SPA are opting to perform physical activity in a more physically intense manner in an attempt to combat their heightened self-presentational concerns during exercise.

The present study

The reported lack of association between SPA and weekly exercise frequency (Chu et al., 2008; Crawford & Eklund, 1994; Lanfranchi et al., 2015), may indicate those with SPA are finding ways to perform regular physical activity regardless of their heightened self-presentational concern (Kowalski et al., 2001). However, there has been a lack of empirical

investigation whether regularly physically active individuals differ in the way they perform physical activity in relation to their SPA. It is possible body-conscious exercisers may modify their physical activity behaviour in terms of frequency, duration, and intensity in a manner conducive to their experience of SPA. The identification of training patterns commonly employed by regularly physically active individuals with high SPA may allow the provision of guidelines designed to make the performance of physical activity less daunting for body conscious individuals (Focht & Hausenblas, 2004; Raedeke et al., 2007; Sabiston et al., 2007).

This study investigated the relationship between SPA and physical activity behaviour in regularly active male and female exercisers. The primary aim was to investigate whether higher SPA was associated with the adoption of particular training methods (*e.g.*, higher or lower frequency, duration, or intensity of physical activity sessions) compared to low SPA exercisers. The decision to compare physical activity behaviours of male and female exercisers may also provide further understanding regarding the commonly reported SPA discrepancy between males and females (Chu et al., 2008; Greenleaf, McGreer, & Parham, 2006; Lanfranchi et al., 2015). A deliberate attempt was made to preserve high ecological validity by avoiding extraneous experimental manipulation. A limitation of previous SPA literature has been the inclination for researchers to manipulate the research environment in order to maximise the experience of body-related anxiety. For example, participants have previously been required to wear standardized forms of attire (Focht & Hausenblas, 2004), exercise in specific locations within the fitness environment (*e.g.*, directly in front of a full length mirror) (Focht & Hausenblas, 2004), and perform designated forms of physical activity (Ekkekakis, Lind, & Vazou, 2010). While this research has been valuable in identifying specific sources of anxiety-inducing stimuli within the physical activity

environment (Focht & Hausenblas, 2004), it is likely a poor reflection of how regular exercisers navigate the fitness environment on a day-to-day basis.

Similarly, we utilised HR monitors to measure physical activity intensity to limit the possibility for participant response bias to confound a potential relationship between SPA and physical activity intensity. For example, during Appleton's (2013) investigation into the effectiveness of a short-term exercise intervention to reduce SPA, participants were instructed to perform moderate intensity physical activity using the definition of ''an exercise intensity capable of resulting in shortness of breath and perspiration'' (Appleton, 2013, p.112). Such an approach to operationalizing physical activity was deemed unsuitable for the current study as it is susceptible to subjectivity (*e.g.*, participants may fail to correctly classify the intensity of their performed activity as moderate rather than strenuous, or vice versa), and invites the possibility for response bias (*e.g.*, participants may willingly under, or overestimate true exertion levels).

This study will test the hypotheses (H) that there will be a significant association between SPA and physical activity behaviour in terms of frequency (H1), gym membership length (H2), and intensity of physical activity (H3), and that there will be a significant difference in the physical activity behaviours reported by male and female exercisers (H4). Additionally, consistent with previous literature we expect a significant difference in SPA according to gender (H5).

Method

Participants

Data collection took place in a north of England University-run gym. There were 64 participants, ranging in age from 18-53 years, with a mean (*SD*) age of 25.2 years (7.8 years). There were similar numbers of males [*n* = 33, mean age 27.2 years (9.2 years) and females [*n* = 31, mean age 23.0 years (5.2 years); just under half were students (students *n* = 29; 45.3% *vs.* non-students *n* = 35, 54.7%). Participants were predominantly Caucasian (*n* = 58, 90.6%) and used the gym approximately three times per week with male participants reporting using the gym for significantly longer than the female participants at time of data collection. Table 1. displays participant physical activity behaviour [Table 1 near here].

Measures

Social Physique Anxiety Scale (SPAS)

The 9-item Social Physique Anxiety Scale (SPAS) was administered to measure the degree of anxiety an individual experiences as a result of perceived negative interpersonal evaluation of their physique (Martin, Rejeski, Leary, McAuley, & Bane, 1997). Participants were presented with a series of 9 statements and asked to respond according to how well that statement fitted their interpersonal body-image beliefs. For example, participants were presented with the statements 'It would make me uncomfortable to know others were evaluating my physique or figure', and, 'In the presence of others, I feel apprehensive about my physique or figure'. Participants respond via a 5-point Likert scale with possible answers ranging from 1 (*not at all characteristic of me*) to 5 (*extremely characteristic of me*). Two of the items represent positively worded body-image statements and require reverse scoring (Items 5: 'I am comfortable with how fit my body appears to others.' and 8: 'I usually feel relaxed when it's

obvious that others are looking at my physique or figure'). Individual item scores are totalled to provide a total score for social physique anxiety; Scores can range from 9 to 45, with a higher score indicating greater social physique anxiety. Adequate internal consistency and convergent and divergent validity have previously been demonstrated using the 9-item SPA (Hausenblas & Martin, 2000; Martin et al., 1997), with Cronbach's alpha for the 9-item SPAS in the current study reporting similarly high internal consistency ($\alpha = 0.92$).

Demographics

Participants were asked to report their age, gender, employment status and ethnicity. Participants were also asked to report how long they had been an active gym member, and how many times they use the gym in a typical week in order to build a profile of each participant's exerciser status.

Heart rate monitors

The Polar FT2 heart rate monitor is comprised of a synchronised chest strap and wrist watch component. The monitor displays the wearer's current heart rate as beats per minute (BPM) and provides information regarding the duration, average heart rate and maximum heart rate achieved as a result of each physical activity session. Each participant's age-predicted maximal heart rate (max HR) was calculated using the following formula:

(220 – age = max HR)

Maximal heart rate was then divided by the average beats per minute (avg BPM) of each participants' session and multiplied by 100 to give percentage of maximal heart rate, *e.g.*:

220 – age (21) = 199 max HR; (avg BPM (140) / max HR (199)) = 0.70 x 100 = 70% average exercise intensity.

Percentages of age-predicted maximal heart rate were used to classify physical activity intensity and allow accurate comparisons of physical activity intensity in a sample that included participants of varying age. In consideration of the lack of a recognised classification system to distinguish between exercise intensity boundaries (Scully, 1998), frequency distributions were performed on the current data to differentiate between low, moderate, and vigorous intensity exercisers. Exercise intensity in the current study was operationalized as avg HR ≤64.9% representing low intensity, 65% - 79.9% representing moderate intensity, and ≥80% as representing vigorous intensity physical activity.

Procedure

The current study employed a correlational design to investigate potential relationships between SPA and physical activity behaviour in male and female participants in a naturalistic fitness environment. Ethical approval was granted by the School Research Ethics Panel (SREP) at the University of Huddersfield prior to data collection. Recruitment posters were positioned in and around the gym informing participants that data collection would be taking place on selected dates. The study was also advertised via announcements posted on the gym's corresponding social media outlets (*e.g.*, Facebook, Twitter). Data were collected during 16 days (2 days per week) over an 8-week period (March - May 2016), with the first researcher (RMP) stationed near the entrance where members had to pass through in order to gain access to fitness equipment. Convenience sampling was used to recruit any individual over the age of 18 years that used the gym during times of data collection. Participation was not dependent on gender, ethnicity, or body composition and was open to both students and non-students. Individuals were approached and invited to participate by the researcher before the onset of their exercise regime. Subsequent volunteers were presented with a participant information sheet and asked to provide written consent. Participants were then fitted with a

Polar FT2 heart rate monitor and instructed to perform their session of physical activity as they were originally intending upon entering the gym before opting to take part in the study. The fitness environment was representative of a typical gym in its provision of a varied selection of free weights, and weight and cardio machine apparatus, with participants permitted to use any apparatus at their disposal and encouraged to perform physical activity at their preferred level of exertion. After successful completion of their exercise session, participants returned the HR monitor equipment and were fully debriefed with regards to the study's aims. The debrief sheet contained contact information for the research team as well as details of the University's counselling service should they have any concerns about their participation. Readings for each participant's exercise duration and average HR readings were taken from the monitors before being sanitised ready for next participant use.

Data analysis

Sample size calculations indicated an optimal sample of 64 participants for medium effect size at power = 0.80 for $\alpha = 0.05$ to investigate potential relationships between SPA and physical activity behaviour (Cohen, 1992). Participant data from the SPAS and demographic questionnaire were entered into the statistical package SPSS (Version 22; IBM Corp, 2013), with preliminary checks for accuracy and data entry error indicating no mistakes. Kolmogorov-Smirnov tests of normality indicated data were normally distributed enabling the use of parametric testing to investigate gender invariance in SPA and the relationship between SPA and PA behaviour ($KS = 0.94$, $P = > 0.20$). Data were analysed using a combination of independent sample t-test and Pearsons correlations, with Chi-square tests for independence used to compare categorical data in lieu of appropriate parametric alternatives.

Results

Mean (*SD*) SPAS for the total sample was 24.35 (9.15), with scores ranging between 9.00 and 41.00.

Correlates of SPA and PA behaviour

Pearson correlation coefficients were calculated to investigate the relationship between SPA and physical activity behaviour. There was no relationship between SPA and weekly physical activity frequency for the whole sample (r = -.0114, P = 0.26), for females (r = 0.023, P = 0.90) or for males (r = -0.046, P = 0.80); no relationship with length of gym membership (r = -0.193, P = 0.13, females r = 0.145, P = 0.44, males r = 0.084, P = 0.64); and no relationship with intensity of physical activity (r = 0.103, P = 0.42, females r = -0.070, P = 0.71, males r = -0.186, P = 0.30).

Gender differences in PA behaviour

Table 2 shows differences in male and female participant gym use [Table 2 near here]. Type of workout was significantly different by gender, with men preferring anaerobic and women preferring aerobic workouts (X^2 (2, n = 64) = 19.897, P <0.001, *Cramer's V* = 0.59). Analyses revealed no significant association between gender and weekly physical activity frequency X^2 (1, n = 64) = 3.00, P = 0.08, *phi* = -0.25, or gym membership length X^2 (1, n = 64) = 1.64, P = 0.20, *phi* = -0.19. There was a significant association between gender and physical activity intensity, with female participants reporting significantly higher HR responses, X^2 (2, n = 64) = 10.200, P = 0.006, *Cramer's V* = 0.40.

Gender differences in SPA

Table 3 displays SPA differences by gender [Table 3 near here].

Males reported significantly lower SPA compared with females [(M = 18.76, SD = 5.60 *vs.* M = 30.32, SD = 8.43), t (52) = -6.423, P <0.001, two tailed]. The magnitude of the difference in the means (mean difference = -11.57, 95% *CI*: -15.18 to -7.95) was considered moderate (*eta squared* = 0.74) in accordance with guidelines proposed by Cohen (1992) for interpreting effect sizes.

Discussion

The aim of this study was to explore whether variations in key principles of physical activity behaviour (*i.e.*, physical activity frequency, length of gym membership, and intensity of physical activity) were linked to feelings of SPA in male and female exercisers. Previous literature has predominantly focussed exclusively on identifying a relationship between SPA and physical activity frequency, often failing to associate SPA with either frequent or infrequent physical activity performance (Chu et al., 2008; Crawford & Eklund, 1994; Lanfranchi et al., 2015). Similarly, the current study revealed no relationship between SPA and physical activity frequency, adding further support to Kowalski et al's. (2001) contention that individuals with high body-related anxiety are not definitively deterred from the performance of regular physical activity.

A strength of the current study related to the consideration of long-term adherence (gym membership length) and physical activity intensity, allowing a more in-depth investigation into links between physical activity performance and SPA. However, the current study failed to identify a significant association between SPA and gym membership length, as participants reported similar SPA whether they had been performing regular physical activity for a sustained period of time (*i.e.*, over 12 months), or not. There was also no relationship between SPA and physical activity intensity, suggesting those with heightened self-presentational concerns do not perform physical activity more or less strenuously. In consideration of Ekkekakis'(2003) dual-mode theory of exertion, the current study proposed body-conscious individuals may perform physical activity at higher intensity in an attempt to combat the experience of SPA. However, the lack of relationship suggests regular exercisers do not purposefully modify their behaviour in this regard. Subsequent analyses indicated the lack of association between SPA and physical activity behaviour to be consistent among both males and females, with no identified differences between the physical

activity performances of males or females with high SPA compared to their low-SPA counterparts.

Females reported significantly higher SPA than males, providing further support for the consistent SPA gender gap prevalent throughout the literature (Mack, Strong, Kowalski, & Crocker, 2007; Melbye, Tenenbaum, & Eklund, 2007). However, whilst this SPA gender imbalance has led to an abundance of research conducted using female-only samples, the current study attempted to illuminate this discrepancy by investigating potential differences in the way males and females perform physical activity. However, males and females did not differ significantly in terms of physical activity frequency or gym membership length. Males and females did differ significantly in regards to physical activity intensity and the type of physical activity performed. Females performed at a higher intensity and were significantly more likely to perform an aerobic form of physical activity (*i.e.*, stationary cycling, treadmill use), whereas males performed anaerobic physical activity at lower levels of physiological exertion (*i.e.*, weightlifting/resistance training). The strong inclination (*i.e.*, large effect size separating males and females) for males to favour anaerobic and females to favour aerobic activity in the current study may provide support for the prominence of culturally perpetuated physique goals to influence physical activity behaviour (McCreary & Sasse, 2000). Females and males opting to perform their culture-salient forms of physical activity is likely a reflection of the emphasis for minimizing body fat for females and the pursuit of enhanced muscular mass, muscle definition and achieving a low body fat percentage for males (Brunet & Sabiston, 2009; Corson & Andersen, 2002; McCreary & Sasse, 2000).

Accordingly, the significant gender difference in physical activity preferences suggests the finding for females to perform physical activity at a significantly higher intensity must be interpreted with caution. For example, it may be logical to assume those performing anaerobic activity (*i.e.*, weightlifting) to report lower average heart-rate responses due to the

incorporation of regular rest periods (to allow adequate recovery time in-between sets), and the flexibility to perform their session of physical activity whilst isolating specific body parts. In contrast, those performing aerobic activity may ultimately perform a more physiologically demanding workout (*i.e.*, utilising the full body) in an uninterrupted manner (*i.e.*, without regular rest periods). Participants in the current study were given free-rein over their choice of exercise apparatus in a bid to maintain high ecological validity. Whilst instructing male and females to have performed physical activity using the same standardised apparatus may have allowed a more comprehensive comparison between male and female exercisers preferred levels of exertion, it likely would not have provided an accurate representation of the exercises each gender typically opts to perform (as highlighted by our findings). Nevertheless, it must be considered the significance reported here may simply reflect discrepancy between male and female exercise preferences rather than true gender differences in the performance of physical activity intensity. Gender differences among SPA literature are commonly ascribed to a stronger emphasis for females to adhere to the corresponding cultural norms for body attractiveness (Greenleaf et al., 2006), with heightened female SPA interpreted to represent a psychological manifestation of the enhanced externalised pressure. In this regard, the finding for females to report significantly higher heart rate even before their intended physical activity session had begun suggests heightened SPA may also manifest physiologically in the guise of an elevated HR.

A limitation of the present study relates to the failure to recognise other forms of physical activity participants may have performed outside of the gym. The decision to isolate exercise frequency pertaining to participant gym use was made as individuals with existing self-presentational concerns typically self-select ‘fitness-type’ behaviours as their preferred form of physical activity (Frederick, Morrison, & Manning, 1996). Accordingly, variation in the frequency of which individuals perform such activity is likely indicative of their desire to

modify certain aspects of their body and may be considered directly analogous to their sense of body-satisfaction and feelings of SPA (Murnen & Don, 2012). Nevertheless, it must be considered the sole focus on gym-going exercise frequency may have served to obfuscate the relationship between SPA and physical activity frequency.

A further limitation relates to the utilisation of heart rate monitors to assess physical activity intensity. HR monitors were selected in an attempt to promote standardisation in the assessment of participant physical activity intensity (Yuen et al., 2013). This decision was also made as HR monitors were reasoned to be less invasive than the metabolic analysis systems used to collect other pertinent physiological data (*e.g.*, Oxygen uptake, Carbon Dioxide production) (Sylvia, Bernstein, Hubbard, Keating, & Anderson, 2014). Heart rate responses in the current study are likely to reflect a combination of both physical activity-induced, and anxiety/affect-induced, physiological activation (Ekkekakis, Hall, & Petruzzello, 1999). Accordingly, the reported discrepancy between male and female physical activity intensity may be a consequence of heightened female SPA manifesting as heightened physiological activation, rather than reflecting a true inclination for females to favour the performance of more strenuous physical activity.

Conclusion

While considerable gender differences remain a prominent feature of SPA and may influence the type of physical activity males and females perform, our findings suggest discrepant experiences of SPA are unrelated to differences in the performance of physical activity. However, the absence of a relationship between SPA and PA behaviour should not be interpreted to suggest there are no differences between high and low SPA exercisers in a physical activity context. High inter-individual variability may remain in terms of how regular exercisers with body image concerns interact and present themselves within an

exercise environment (Brewer et al., 2004). Given the presence of mirrors and the wearing of form-fitting attire has been associated with enhanced SPA during physical activity (Crawford & Eklund, 1994; Focht & Hausenblas, 2004; Raedeke et al., 2007), it is recommended those with high self-presentational concerns take this information into consideration before entering the exercise environment. With the current study providing the latest evidence for females to be more prone to negative experiences of SPA, these recommendations may be particularly salient for female exercisers. Future research should endeavour to maintain ecological validity when attempting to identify behavioural strategies regular exercisers use to minimise their experiences of SPA. Further investigation is needed to develop a better understanding of the factors that influence body-conscious individual's decision to adopt or avoid the performance of regular physical activity.

Disclosure Statement

No potential conflict of interest was reported by the authors

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Table 1. Mean (*SD*) weekly gym use, length of physical activity session, and number of months as an active gym member, for the whole sample and by gender.

	Total		Males		Females	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*
Weekly gym use (days/week)	2.79	1.46	3.09	1.53	2.48	1.34
Duration (mins/session)	46.81	14.22	48.60	13.26	44.92	15.17
Gym member (months active)	29.39	46.07	43.59	59.21	14.27	16.14

Table 2. A comparison of the number (n) and percent (%) of males and females by workout type, weekly physical activity, gym membership length, and physical activity intensity.

	Males		Females		X^2	*df*	*P*	Effect size
	n	%	*n*	%				
Type of workout								
Anaerobic	18	86	3	14				
Aerobic	7	23	23	77	19.897	2, 64	<0.001	0.59†
Mixed	8	62	5	39				
Weekly PA frequency								
≤ 2 times	10	37	17	63				
> 2 times	23	62	14	38	3.00	1, 64	0.08	-0.25‡
Gym membership length								
≤ 12 months	15	43	20	57				
> 12 months	18	62	11	38	1.64	1, 64	0.20	-0.19‡
PA intensity								
Low	13	87	2	13				
Moderate	11	37	19	63	10.200	2, 64	0.006	0.40†
Vigorous	9	47	10	53				

Note: PA = physical activity, X^2 = Chi-square, *df* = degrees of freedom and number of participants, effect size † = *Cramer's V* and ‡ = *phi*.

1 Table 3. Differences in SPA by gender
2

	Male		Female			
	Mean	*SD*	*Mean*	*SD*	*P*	Effect Size
SPA	18.76	5.60	30.32	8.43	<0.001	0.74

3