Participant characteristics of users of holistic movement practices in Australia.

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Abstract

Objectives: The aim of this study was to compare the characteristics of users of holistic movement practices in Australia to people who were physically active but not using holistic movement practices. A second aim was to compare characteristics of users of specific holistic movement practices (yoga/Pilates and t'ai chi/qigong).

Design: We performed a secondary data analysis on pooled data of a nationally-representative physical activity survey conducted yearly 2001-2010 (n=195,926).

Setting: Australia-wide Exercise, Recreation, and Sport Survey (ERASS).

Main outcome measures: A range of socio-demographic and participation characteristics were documented and compared between users and non-users of holistic movement practices and between yoga/Pilates and t'ai chi/qigong users, employing descriptive statistics, chi square, and multiple logistic regression analyses.

Results: Users of holistic movement practices (n = 6,826) were significantly more likely than non-users to be female, older, have fewer children at home, and have higher levels of education, socio-economic background, and physical activity involvement ($p<0.001$). Yoga/Pilates (n = 5,733) and t'ai chi/qigong (n = 947) users were also found to differ on a number of characteristics, including age, sex, socioeconomic background, and marital status.

Conclusion: As a group, Australian users of holistic movement practices differ on a range of characteristics from those Australians active in other types of physical activities. However, differences between yoga/Pilates and t'ai chi/qigong users suggest these practices attract somewhat different sub-populations. To what extent these differences are due to characteristics inherent to the practices themselves or to differences in delivery-related parameters needs to be examined in future research.

Keywords

Holistic; mind-body; participation correlates; participation determinants; yoga; tai chi; qigong; Pilates

1. Introduction

1.1 Background

Holistic movement practices (HMPs), like yoga and t'ai chi, are increasingly being investigated for their physical and mental health benefits [1, 2]. Many reviews report on the associations of these practices with a wide range of health outcomes, and there is growing evidence of beneficial effects, for healthy as well as clinical populations [3-8]. With increasing appreciation of these potential health benefits, the question of who participates in HMPs and who does not becomes a relevant one to ask, in particular from the perspective of public health. Historically, however, public health research on determinants and correlates of physical activity has predominantly focused on aerobic moderate-to-vigorous physical activity [9], and more recently sitting [10].

Typically, what makes HMPs holistic and sets them apart from traditional exercise modes is their embedding in integrative philosophies that link the physical practice with holistic well-being. The most well-known HMPs are yoga, whose philosophy is often summarized into "eight limbs" [11], and t'ai chi and qigong, which are embedded in concepts from Traditional Chinese Medicine [12]. The practices include multiple inter-related components, variedly emphasizing elements such as musculoskeletal training, breath regulation, concentration, mindfulness, subtle energy, alternative health philosophy, spirituality, ethics, mind-body-spirit coordination, transcendence [11, 13-18]. Furthermore, they tend to call for a level of inner involvement and engagement with one self that is not typically part of other exercise contexts [19, 20]. Due to these holistic and self-involved characteristics, HMPs may attract people specifically interested in benefits beyond physical fitness – although they may deter others [21-24].

A limited number of nationally representative studies have investigated the characteristics of people participating in certain HMPs and compared them to non-participants. These studies have predominantly been conducted in the United States, and focused on yoga [25-28] and t'ai chi/qigong [28-30]. One study examined characteristics of yoga users in England [31]. Consistent findings across the yoga studies indicate that, compared to non-users, yoga users are more likely to be female, to have reached tertiary levels of education, and to rate their health as good-to-excellent. Other findings are less consistent (e.g., regarding income, age, ethnicity, mental health) or have only been investigated in one or two studies (e.g., BMI, occupational & leisure time physical activity). T'ai chi/qigong users in the United States have consistently been found to be similar to non-users in sex and income level, while differing in age, race, and education [28-30]. Users are more likely to be older, of Asian, African American, or other non-white ethnicity, and educated beyond high school level. A tendency to participate in multiple HMPs has also been noted, with almost half (49.3%) of t'ai chi/qigong users also using yoga [29].

Population-based profiles of user characteristics may serve several purposes. First, they provide information about the population subgroups who currently seem naturally attracted to these practices, and this may inform both referral strategies and marketing practices. Second, they provide information about the population subgroups who currently are *not* participating in these practices, which may give direction to efforts aimed at identifying and overcoming participation barriers. Furthermore, an accumulation of profiles of HMP users from different countries may help refine our understanding of factors that shape participation patterns in these practices.

1.2 Objectives

The aim of this study was to examine the characteristics of Australians participating in HMPs, specifically yoga, t'ai chi, qigong, and Pilates, through a secondary data analysis of a

nationally representative survey of Australian adults. Additionally, we aimed to compare people participating in HMPs with people who were physically active but not participating in HMPs in order to capture differences related to choice of physical activity. Furthermore, we aimed to examine similarities and differences between specific holistic movement practices by comparing the characteristics of yoga/Pilates and t'ai chi/qigong users.

2. Method

2.1 Survey and sample

We used data from the Exercise, Recreation and Sport Survey (ERASS), a series of Australia-wide independent cross-sectional national surveys, conducted yearly between 2001 and 2010, with a focus on assessing information about the exercise-, recreation- and sport-related physical activities Australians participate in [32, 33]. Various aspects of the ERASS data set have previously been examined [34-38], including its usefulness for public health surveillance [39].

The ERASS involved a random survey stratified by state and territory, with data collected quarterly, using a computer-assisted telephone interview (CATI) system. Respondents were aged 15 years and over residing in occupied private dwellings. Households were sampled from the Electronic White Pages (2001–2006) or by Random Digit Dialling (2007-2010) [33]. On being contacted by telephone, respondents were informed about the purpose and background of the ERASS, assured of confidentiality and given the opportunity to ask questions. Verbal informed consent was indicated by respondents' willingness to participate in the survey. Ethics approval was granted by the Human Research Ethics Committee of the Federation University, Australia.

Annual response rates averaged 36.5% between 2001 and 2010, culminating in a total of 195,926 respondents over the 10 years. Averaged across the decade, 49.4% of respondents were male, 37.1% were aged 50+ years, 24.3% were university educated while 29.6% had below high school education, 37.9% were in the two most disadvantaged socioeconomic quintiles [40], and 68.4% were from Metropolitan areas. An overview of sample characteristics is provided in Appendix 1. Details of sample characteristics by year can be found in Bennie et al. [35]. Of the 195,926 people surveyed, 81.3% engaged in some level of leisure-time physical activity in the 12 months prior to the date of interview. Previous analyses showed that overall participation levels in yoga/Pilates and t'ai chi/qigong did not increase linearly across the 2001-2010 decade [37].

2.2 ERASS questionnaire

The ERASS questionnaire focused on participation in leisure-time physical activity, defined as '*any physical activity done for exercise, recreation or sport in the past 12 months'*. Physical activities associated with work, household or garden chores were excluded. Those respondents who indicated having participated were asked to list up to 10 types of activity undertaken. Several follow-up questions were asked for each activity, including the frequency of participation during the previous 12 months. Activities were coded according to a predefined list including many sport activities and a range of non-sport leisure-time physical activities. The predefined list assigned one code to yoga and Pilates. T'ai chi and qigong were coded separately. For this study, we used the jointly coded *yoga/Pilates* variable, and combined t'ai chi, qigong, and Chinese exercises into a *t'ai chi/qigong* variable. The questionnaire also assessed the following socio-demographic variables: age, sex, educational level, home postcode, marital status, and number of children below the age of 18 living with the respondent. In 2008, as an indicator of ethnicity, a question was added on language

spoken at home. Additionally, in 2009, a question was added about the presence of a physical condition or disability that restricts life in some way. Respondents' postcodes were used to determine regionality and socioeconomic status, using the "Accessibility/Remoteness Index of Australia (ARIA)" [41] and the "Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD)" [40], respectively.

2.3 Groups

We defined HMP-users as those respondents who indicated that they had participated at least once in yoga/Pilates and/or t'ai chi/qigong during the last 12 months (n=6,826). Non-HMP-users were defined as those respondents who indicated that they had participated in any activity other than yoga/Pilates or t'ai chi/qigong during the last 12 months (n=152,468). Additionally, to examine characteristics within HMP users, we distinguished those who participated in yoga and/or Pilates only (yoga/Pilates users, n=5,733), and those who participated in t'ai chi and/or qigong only (t'ai chi/qigong users, n=947). We excluded those who participated in *both* yoga/Pilates and t'ai chi/qigong (n=146).

2.4 Analyses

Analyses were conducted using the Complex Samples module of SPSS version 22 (SPSS Inc. an IBM Company, Chicago, IL). For the purpose of this paper, participants were pooled across the 2001-2010 surveys for all but two variables. For language spoken at home, and physically restrictive condition, only data from the later surveys (2008-2010 and 2009-2010, respectively) were included, due to the later addition of the associated questions (see section 2.2). We calculated percentages across variable categories (e.g., male/female for sex) for socio-demographic and participation variables for HMP-users and non-HMP-users, and employed chi square tests to examine differences between the two groups (Table 1, first three columns). The same was done for yoga/Pilates users and t'ai chi/qigong users (Table 1, last three columns). Additionally, we conducted two multiple logistic regression analyses on the

sociodemographic variables to examine the odds ratios of participating in an HMP when active (Table 2), and the odds of doing t'ai chi/qigong when participating in an HMP (Table 3). These analyses were performed for complete cases and involved mutual adjustments for each of the variables included, as well as for survey year to adjust for yearly variations. Language spoken at home and restrictive physical condition were not included in this analysis because data were not available for the full ten years. Where suitable, the odds ratios were tested for heterogeneity and linear trend using Wald chi-square test and polynomial contrasts method, respectively. A p-value of <0.05 was used to indicate significance for all statistical tests.

3. Results

[insert Table 1 approximately here]

3.1 HMP-users versus non-HMP-users

Comparing the characteristics of people participating in HMPs and people who were active but not involved in HMPs shows significant differences on all socio-demographic and participation characteristics, except for language spoken at home and physically restrictive condition (Table 1). Specifically, compared to non-HMP-users, HMP-users showed significantly higher proportions of people who were female, aged between 35 and 54 years, highly educated, from higher socioeconomic levels, living in major cities, married, with one or two children living at home, more frequently active, and engaged in a higher number of different physical activities ($p<0.001$ for all except marital status, $p=0.003$). In the adjusted logistic linear regression analysis (Table 2), the odds of being a HMP-user were higher for females, those above the age of 34, and those with a high level of education, higher socio-

economic status, and fewer children at home. Regionality and marital status were no longer significant in this adjusted analysis.

[insert Table 2 approximately here]

3.2 Yoga/Pilates users versus t'ai chi/qigong users

Comparing the characteristics of those who participated in yoga/Pilates with those who participated in t'ai chi/qigong shows significant differences on all of the socio-demographic and participation characteristics, except for frequency of physical activity (Table 1). Compared to yoga/Pilates users, t'ai chi/qigong users represent significantly higher proportions of people who were male, aged 55 years or over, from lower socio-economic levels, living in regional and remote areas, non-married, and English-speaking, and who had medium levels of education, more physically restrictive conditions, and no children living at home ($p<0.001$ for all except language, $p=0.002$). The two groups did not differ in frequency of physical activity participation but t'ai chi/qigong users took part in a larger variety of activities ($p<0.001$). The adjusted logistic linear regression analysis (Table 3) shows that the odds of doing t'ai chi/qigong (rather than yoga/Pilates) when being an HMP-user were higher for males, those aged 55 years or over, and those with lower levels of education, lower socio-economic status, not married, and without children living at home.

[insert Table 3 approximately here]

4. Discussion

This is the first study to compare characteristics of holistic movement practice users with others who are active but not engaged in HMPs, using a nationally-representative sample of Australian adults. The results showed that HMP-users differed significantly from those active in other types of physical activities on most of the assessed characteristics, including sex, age,

education, socio-economic background, marital status, number of children, and physical activity engagement. This suggests that HMPs may appeal to some subpopulations more than to others. There were also significant differences in characteristics between yoga/Pilates and t'ai chi/qigong users, however, implying that there is also heterogeneity within the group of HMP-users.

One aspect where Australian HMP-users clearly differed from non-users was sex, with HMP-users showing a strong dominance of females, among both yoga/Pilates users and t'ai chi/qigong users. A predominance of women is a common finding in yoga research [25-27, 31]. A possible explanation for this finding was offered by Sointu [42, 43], who argued that complementary and alternative medicine (CAM) practices, including yoga, represent an ethos of well-being-seeking that fits better with conceptions of femininity than with traditional conceptions of masculinity. Participating in such an ethos would mean a renegotiation of typical masculinity for men, which might form a considerable barrier to participation. Given a high CAM-use among Australian women [44], and Australian masculinity traditionally constructed around values like strength, physical toughness, and stoicism [45], this might be a relevant explanation for the findings. Although also dominated by women, relative to yoga/Pilates, t'ai chi/qigong appears to have a stronger appeal to Australian men. It is possible that t'ai chi's association with forms of martial art [12, 46] may give it a somewhat more masculine flavour compared to yoga. Future research could explore the roles of varying constructions of femininity and masculinity within different HMPs and different countries, including ways in which they serve as barriers and facilitators to participation.

In terms of age, HMP-users were more likely to be somewhat older than non-HMP-users. However, it must be noted that all age groups were represented among the HMP-users, though distributions varied between practices. The patterns suggest a stronger presence of younger Australians among yoga/Pilates users, and of older Australians among t'ai

chi/qigong users. Given their relatively gentle and controlled nature, both t'ai chi and yoga are recommended explicitly in the Australian physical activity guidelines for older people [47, 48]. It is plausible this may have an effect on their uptake by older adults. In this respect, it is worth mentioning that participation in yoga/Pilates among the older age group did increase between 2001 and 2010 [37]. What might explain the relative unpopularity of t'ai chi/qigong for younger populations remains to be investigated.

High levels of education and more advantaged socioeconomic backgrounds were considerably more common among HMP-users than among non-HMP-users. Both of these seem to be mainly accounted for by yoga/Pilates users and are in line with research on yoga [25, 31, 49]. T'ai chi/qigong users presented a different picture, with higher representations of participants with medium levels of education, and more equally distributed representations from the various socioeconomic categories. These findings suggest that lower levels of education and socioeconomic status are more likely to act as barriers to yoga/Pilates participation than t'ai chi/qigong participation. Which aspects of the delivery and marketing process might be related to such differences require further investigation. Factors such as commercial versus community/subsidized delivery might play a role for example.

The findings for physical activity involvement suggest that HMP-users were more likely to be active in a larger variety of activities and more frequently than non-HMP-users. What could account for this association, and where HMPs fit in a more active lifestyle needs to be addressed in future research. Playing an active role in one's health has been found to be an important motivator for CAM-use in general [50], and such an attitude may be an underlying factor in the involvement in HMPs. Having said that, HMPs have sometimes been found to be taken up for health-management-related reasons [22, 51] but in our study, HMPs did not appear to be a more popular choice than other forms of physical activity among those with physically restrictive conditions.

While survey differences in sampling and questionnaire design make direct comparisons between countries difficult, a rough comparison with nationally representative data from England and the United States suggests a reasonable amount of variation among the characteristics of HMP-users between countries. For example, the percentages of t'ai chi/qigong users who also engaged in yoga/Pilates was considerably lower at 13.4% than the 49.3% reported for the United States [29]. Additionally, in the United States, significantly higher proportions of Asian residents have been found among t'ai chi/qigong users compared to non-users [28, 29]. Given t'ai chi/qigong's Chinese origins, this might suggest that HMPs could be more appealing or accessible to those from a similar culture. Such a "cultural match" did not appear evident in Australia, even though it is a culturally and linguistically diverse country with an increasing Asian population [52]. There may thus be country-specific influences in the attractiveness of HMPs to different subpopulations and/or in the avenues and infrastructure of delivery.

Furthermore, our data suggest differences between types of HMPs. To what extent these may be due to differences inherent in the physical and philosophical aspects of the practices themselves or to differences in the socio-cultural and geographical infrastructures through which they are offered is unknown. Varying systems of teacher education, promotion by local governments, practice locations, community, and marketing and market factors may all play a role. We still know very little about the factors that shape the delivery of these practices. There is a need for future research to examine the socio-cultural and environmental infrastructures that determine the delivery of the various HMPs in different locations. Such factors may also tie into different barriers to participation for currently underrepresented groups. Uptake of yoga in more remote areas may be hindered by limited access to indoor facilities for example [38].

While knowing which subpopulation groups seem to naturally feel attracted to HMPs may help inform targeted interventions to reach specific populations [53], it is also important to investigate participation barriers to currently underrepresented groups and design and test interventions aimed at overcoming such barriers. It is plausible, for instance, that the participation dominance of certain subgroups acts as deterrent to members of non-dominant subgroups (for example, the overabundance of women in yoga has been reported as a barrier to non-participating men [21], and the front covers of yoga life style magazines have been shown to predominantly feature slim, White women in their 20s and 30s [54]). We know little about attempts to overcome these effects.

Last, it is important not to forget that people with the non-dominant characteristics *do* participate in HMPs, albeit in lower numbers. It is thus worth investigating not only the constraints but also the affordances that shape participation of these "minority" participants. While from a public health perspective, any type of physical activity engaged in would be better than none, it can be argued that HMPs, because of their holistic orientation and benefits [13, 15, 55-58], offer potential additional experiences that may be valuable, even for people who are already active in other forms of physical activity. Given that participation rates are relatively low [37], there is ample scope to enhance participation in any type of subpopulation, though different strategies may be needed for different groups.

This study had several limitations. First, HMPs in this study were defined as yoga, Pilates, t'ai chi and qigong. This excluded other physical practices embedded in holistic philosophies that were not recorded separately in the ERASS (e.g., 5Rhythms, Nia, Biodanza). However, participant numbers in these activities are likely to have been very low. Furthermore, yoga and Pilates were assessed as a joint activity. While they share various similarities [14, 49], there are also substantial differences, in particular in underlying philosophy. This was an inherent limitation in the data set, and means it was not possible to draw conclusions about

the participant characteristics for each of the two practices separately. In general, the HMPs were assessed at a global level, without differentiation between different styles that exist within each of the four practices. Some styles will contain more holistic elements than others, and these may have their own impact on participation. Strengths of this study include the use of a large and nationally representative sample, implying generalizability across the Australian population.

5. Conclusion

As a physical activity participation group, Australian HMP-users differ on a range of socio-demographic characteristics from those Australians active in other types of physical activities. However, within HMP-users there are also differences between those engaging in different types of HMPs, suggesting HMP-users are not a homogenous group of practitioners. To what extent these differences are due to characteristics inherent to the HMPs themselves or to differences in delivery-related parameters will need to be addressed in future research.

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Table 1: Sociodemographic and activity characteristics of HMP-users and non-HMP-users, as well as a breakdown into yoga/Pilates and t'ai chi/qigong users.

	HMP-users[1]	**Non-HMP-users[2]**	**HMP-users *vs* non-HMP-users[3]**	**Yoga/ Pilates-users[4]**	**T'ai chi/ qigong-users[5]**	**yoga/Pilates only *vs* t'ai chi/qigong-users[6]**
	n=6,826	n=152,468	n=159,293	n=5,733	n=947	n=6,680
	n (%)	n (%)	p-value	n (%)	n (%)	p-value
Sex						
Male	846 (12.4)	78381 (51.4)	<0.001	658 (11.5)	166 (17.5)	<0.001
Female	5979 (87.6)	74087 (48.6)		5075 (88.5)	781 (82.5)	
Age						
15-34	2200 (32.9)	58212 (38.7)	<0.001	2103 (37.3)	84 (9.2)	<0.001
35-54	2698 (40.3)	54014 (35.9)		2439 (43.3)	202 (22.2)	
55+	1789 (26.8)	38194 (25.4)		1092 (19.4)	624 (68.6)	
Education[a]						
High	2899 (43.1)	39665 (26.4)	<0.001	2607 (46)	232 (25.4)	<0.001
Medium	2672 (39.7)	68032 (45.4)		2180 (38.5)	432 (47.3)	
Low	1152 (17.1)	42286 (28.2)		876 (15.5)	249 (27.3)	
IRSAD[b]						
1st (most disadvantaged)	648 (9.5)	23844 (15.7)	<0.001	448 (7.8)	179 (19.0)	<0.001
2nd	1042 (15.3)	31166 (20.5)		817 (14.3)	189 (20.0)	
3rd	1225 (18.0)	29965 (19.7)		994 (17.4)	204 (21.6)	
4th	1449 (21.2)	30078 (19.8)		1262 (22.0)	167 (17.7)	
5th (most advantaged)	2457 (36.0)	37088 (24.4)		2208 (38.5)	205 (21.7)	
ARIA[c]						
Major cities	5226 (76.6)	105406 (69.2)	<0.001	4490 (78.3)	637 (67.3)	<0.001
Inner regional Australia	1021 (15)	29769 (19.5)		798 (13.9)	194 (20.5)	
Other regions of Australia	576 (8.4)	17119 (11.2)		444 (7.7)	115 (12.2)	
Marital Status[d]						
Married	4045 (59.6)	86389 (56.9)	0.003	3514 (61.6)	465 (49.5)	<0.001
Not married	2742 (40.4)	65370 (43.1)		2191 (38.4)	473 (50.5)	
Children[e]						
0	4736 (69)	105723 (69)	<0.001	3758 (65.6)	858 (90.6)	<0.001
1-2	1750 (26.0)	36186 (24.0)		1649 (28.8)	79 (8.4)	
3 or more	338 (5.0)	10544 (7.0)		325 (5.7)	9 (1.0)	
Language[f]						
English	2048 (87.6)	44056 (87.7)	0.927	1704 (86.7)	299 (93.2)	0.002
Non-English	290 (12.4)	6179 (12.3)		261 (13.3)	22 (6.8)	
Physically restrictive condition[g]						
None	822 (87.4)	16470 (87.8)	0.510	730 (90)	73 (69.8)	<0.001
small extent	43 (4.6)	708 (3.8)		29 (3.5)	11 (10.9)	
medium extent	51 (5.5)	917 (4.9)		33 (4.0)	16 (15.5)	
large extent	24 (2.6)	653 (3.5)		19 (2.4)	4 (3.8)	
Frequency of PA[h]						
low	654 (10.0)	25491 (16.7)	<0.001	543 (9.5)	109 (11.5)	0.122
medium	855 (13.0)	22190 (14.6)		705 (12.3)	136 (14.4)	
high	5316 (78.0)	104678 (68.7)		4485 (78.2)	702 (74.1)	
Number of activities[i]						
1	819 (12.0)	60939 (40.0)	<0.001	641 (11.2)	178 (18.8)	<0.001
2	2210 (32.4)	46292 (30.4)		1788 (31.2)	396 (41.9)	
3 or more	3797 (55.6)	45236 (29.7)		3304 (57.6)	373 (39.4)	

[1] respondents participating in any HMP (yoga, Pilates, t'ai chi and/or qigong)

[2] respondents not participating in an HMP but engaged in other physical activities

[3] Chi Square tests for differences HMP-users and non-HMP-users
[4] respondents participating in yoga/Pilates but not in t'ai chi/qigong
[5] respondents participating in t'ai chi/qigong but not in yoga/Pilates
[6] Chi Square tests for differences between those who did yoga/Pilates only and those who did t'ai chi/qigong only
[7] all respondents (active and inactive) minus those participating in an HMP
[8] respondents participating in both yoga/Pilates *and* t'ai chi
[a] high = university; medium = high school or trade qualification; low = not completed highest level of high school
[b] Index of Relative Socio-economic Advantage and Disadvantage expressed in Quintiles: 1 = most disadvantaged; 5 = most advantaged.
[c] Accessibility/Remoteness Index of Australia
[d] married = married, or defacto or living together; not married = never married, divorced, separated but not divorced, or widowed
[e] number of children under the age of 18 living with respondent
[f] language spoken at home; based on 2008-2010 surveys only
[g] restrictive to small, medium or large extent; based on 2009-2010 surveys only.
[h] frequency of participation in physical activity: low = less than 52 times per year; medium = between 53 and 104 times per year; high = 105 times per year or higher
[i] number of activities = overall number of physical activities engaged in (including yoga/Pilates and/or t'ai chi/qigong)

Table 2

Multiple logistic regression analysis on socio-demographic variables among all physically active respondents: adjusted odds ratios[1] (OR), and their 95% confidence intervals (95% CI), of being an HMP user. (n=153,889)

Explanatory variable	**OR (95% CI)**	**p-value**	**Trends**	
			linear	**quadratic**
Sex (ref: Male)		<0.001		
Female	7.79 (6.94-8.75)			
Age group (ref: 15-34 years)		<0.001	+**	-**
35-54 years	1.28 (1.16-1.41)			
55+ years	1.23 (1.11-1.36)			
Education[a] (ref: High)		<0.001	-**	+*
Medium	0.59 (0.54-0.64)			
Low	0.40 (0.36-0.45)			
IRSAD[b] (ref: 1st, most disadvantaged)		<0.001	+**	
2nd	1.20 (1.04-1.38)			
3rd	1.43 (1.24-1.64)			
4th	1.58 (1.37-1.82)			
5th (most advantaged)	2.02 (1.75-2.33)			
Regionality[c] (ref: Major cities)		0.639		
Inner regional	0.95 (0.85-1.06)			
Outer regional/remote	0.98 (0.87-1.11)			
Marital Status[d] (ref: Married)		0.075		
Not married	0.93 (0.85-1.01)			
Children[e] (ref: None)		<0.001	-**	-**
1-2 children	0.86 (0.78-0.96)			
3 or more children	0.58 (0.49-0.69)			

[1]Adjusted for all other explanatory variables in the model, and year.

[a] high = university; medium = high school or trade qualification; low = not completed highest level of high school

[b] Index of Relative Socio-economic Advantage and Disadvantage expressed in Quintiles: 1 = most disadvantaged; 5 = most advantaged.

[c] based on Accessibility/Remoteness Index of Australia (ARIA)

[d] married = married, or defacto or living together; not married = never married, divorced, separated but not divorced, or widowed

[e] number of children under the age of 18 living with respondent

*significant trend ($p < 0.05$)

**significant trend ($p<0.001$)

Table 3

Multiple logistic regression analysis of socio-demographic variables among HMP-users: adjusted odds ratios[1] (OR), and their 95% confidence intervals (95% CI), of being classified as a t'ai chi/qigong-user (versus being a yoga/Pilates-user). (n= 6,149)

Explanatory variable	**OR (95% CI)**	**p-value**	**Trends**	
			linear	**quadratic**
Sex (ref: Male)		0.001		
Female	0.56 (0.40-0.78)			
Age group (ref: 15-34 years)		<0.001	+**	+**
35-54 years	2.43 (1.57-3.77)			
55+ years	12.76 (8.41-19.36)			
Education[a] (ref: High)		0.003	+**	-*
Medium	1.56 (1.20-2.03)			
Low	1.50 (1.12-2.02)			
IRSAD[b] (ref: 1st, most disadvantaged)		<0.001	-**	
2nd	0.58 (0.40-0.83)			
3rd	0.55 (0.38-0.80)			
4th	0.37 (0.25-0.56)			
5th (most advantaged)	0.27 (0.18-0.40)			
Regionality[c] (ref: Major cities)		0.379		
Inner regional	0.83 (0.62-1.11)			
Outer regional/remote	1.02 (0.73-1.44)			
Marital Status[d] (ref: Married)		<0.001		
Not married	1.50 (1.20-1.87)			
Children[e] (ref: None)		0.005	-**	+**
1-2 children	0.60 (0.41-0.87)			
3 or more children	0.39 (0.17-0.91)			

[1]Adjusted for all other explanatory variables in the model, and year.

[a] high = university; medium = high school or trade qualification; low = not completed highest level of high school

[b] Index of Relative Socio-economic Advantage and Disadvantage expressed in Quintiles: 1 = most disadvantaged; 5 = most advantaged.

[c] based on Accessibility/Remoteness Index of Australia (ARIA)

[d] married = married, or defacto or living together; not married = never married, divorced, separated but not divorced, or widowed

[e] number of children under the age of 18 living with respondent

** significant trend ($p < 0.001$)

* significant trend ($p < 0.05$)

Supplementary Table 1: Sociodemographic characteristics of the total ERASS sample, pooled 2001-2010.

	Pooled 2001-2010 (n=195,926)
	n (%)
Sex	
Male	96,827 (49.4)
Female	99,099 (50.6)
Age	
15-34	48,851 (24.5)
35-54	72,721 (36.5)
55+	71,325 (37.1)
Education[a]	
High	47,586 (24.3)
Medium	86,330 (44.1)
Low	58,082 (29.6)
IRSAD[b]	
1st (most disadvantaged)	33,047 (16.9)
2nd	41,185 (21.0)
3rd	38,630 (19.4)
4th	37,606 (19.2)
5th (most advantaged)	45,013 (23.0)
Regionality[c]	
Major cities	133,977 (68.4)
Inner regional	38,767 (19.8)
Outer regional/remote	22,950 (11.7)
Marital Status[d]	
Married	111,341 (56.8)
Not married	83,511 (42.6)
Children[e]	
0	136,531 (69.7)
1-2	46,083 (23.5)
3 or more	13,287 (6.8)
Language[f]	
English	55,186 (86.7)
Non-English	8,493 (13.3)

[a] high = university; medium = high school or trade qualification; low = not completed highest level of high school

[b] Index of Relative Socio-economic Advantage and Disadvantage expressed in Quintiles: 1 = most disadvantaged; 5 = most advantaged.

[c] based on Accessibility/Remoteness Index of Australia (ARIA)

[d] married = married, or defacto or living together; not married = never married, divorced, separated but not divorced, or widowed

[e] number of children under the age of 18 living with respondent

[f] language spoken at home; based on 2008-2010 surveys only