

Original Article

Physical activity among adolescents in Taiwan

Li-Jung Chen MPE, Anne M Haase PhD and Kenneth R Fox PhD

University of Bristol, Department of Exercise, Nutrition and Health Sciences

Purpose: Most of the studies investigating prevalence and correlates of physical activity have been conducted in Western countries. To date, there are no internationally published data with nationally representative samples on physical activity prevalence among Taiwanese adolescents and little is known about the relevant factors associated with activity and inactivity. The objectives of this study were to assess the prevalence of physical activity in Taiwanese adolescents and to identify associated socio-demographic and behavioral variables.

Methods: Data were extracted from the 2001 National Health Interview Survey in Taiwan. The sample was 2235 adolescents (1157 boys and 1078 girls) aged 12-18 years. Univariate and multivariate logistic regression analyses were conducted to examine associations of demographic and behavioral variables with physical activity.

Results: Although 80% of adolescents reported engaging in some physical activity, only 28.4% of the sample met recommended guidelines. Boys and urban adolescents were more active than girls and rural adolescents; and the prevalence of physical activity declined with age. Mean sedentary time was 9.5 hours each day. Though the proportions of non-students, regular smokers or drinkers were small, around half of them were physically inactive.

Conclusions: The percentage of Taiwanese adolescents meeting recommended amounts of physical activity for health is low, particularly, girls in the 15-18-age range being the least active. Associated factors with physical activity include both demographic and health behavior variables (e.g. age, gender, smoking). These data provide a baseline for future comparisons and preliminary identification of groups at higher risk of low physical activity in Taiwan.

Key Words: adolescent, health, physical activity, Taiwan

Introduction

The World Health Organisation has calculated that poor diet and physical inactivity will soon become the leading contributor to disability, disease, and premature mortality.¹ Epidemiological research has also demonstrated that physically active people have reduced risk of several chronic diseases including heart disease, some cancers, type 2 diabetes, obesity and depression among adults.²⁻⁴ Although more studies are needed, the evidence indicates that physical activity results in some physical and psychological benefits for young people, including healthy bone and muscle development, reduced incidence of hypertension, healthy blood lipid profile, and enhanced psychological well-being.⁵⁻¹⁰

Despite the suggestion that physical activity is beneficial for youth and the inclusion of physical activity in most health promotion recommendations (e.g., Move for Health – Active Youth),¹¹ large sectors of the adolescent population in many countries are insufficiently active for optimal health benefits.^{4, 12, 13} Previous studies have investigated prevalence of activity and relevant factors that may be associated with low levels of participation. A consistent finding is that physical activity declines with age during adolescence in particular with girls at all ages substantially less active than boys.¹⁴⁻¹⁷ However, most of the studies have been conducted in Western countries. Three review studies in adolescent physical activity revealed that the majority of studies were conducted in the US,¹⁶⁻¹⁸ suggest-

ing a potential gap in the literature on understanding physical activity determinants in non-Western countries where inactivity is becoming a much more salient issue than in previous decades.

Very few studies have been conducted in Asian countries,^{19, 20} and even fewer studies having been conducted addressing Taiwanese adolescents' participation in physical activity.^{21, 22}

However, there are considerable socio-economic, political and cultural differences between South East Asian and Western countries that may influence patterns of physical activity. It is not clear whether the same determinants of physical activity for adolescents in most Western countries would be relevant, given these differences. Hence, any health promotion strategies and programmes would benefit from appropriate cultural understanding. Therefore, it is essential that physical activity is studied within a social and cultural context to tap into the most pertinent and appropriate factors for adolescents.

To date, there are no internationally published data on the prevalence of physical activity among Taiwanese adoles-

Corresponding Author: Li-Jung Chen, University of Bristol, Department of Exercise, Nutrition and Health Sciences, Centre for Sport, Exercise and Health, Tyndall Avenue, Bristol BS8 1TP, UK.

Tel: (044)-117-331 1110; Fax: (044) 117 331 1148

Email: Lijung.chen@bristol.ac.uk

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cents and little is known about the socio-demographic and/or behavioral factors associated with activity and inactivity. There is a need for baseline data on the activity levels and patterns of adolescents in Taiwan in order to provide guidance for more effective health promotion policies. The objectives of this study were therefore to (a) profile the prevalence of physical activity among Taiwanese adolescents, (b) identify groups at risk of low physical activity, and (c) examine the relationships between physical activity and other health-related behaviors.

Methods

Sample

Data were extracted from the 2001 National Health Interview Survey conducted by the Department of Health in Taiwan between 2001 and 2002. The details of research design, sampling procedures and data collection methods have been described elsewhere.^{23, 24} Briefly, the survey was a cross-sectional study with a total of 25464 participants and used multi-staged stratified systematic sampling design with probability proportional to size. For this study, data on 12-18 year olds were extracted, providing a sample of 2235 (1157 boys and 1078 girls) adolescents in Taiwan.

Measures

The data reported were taken from the Personal Health Behaviors and Adolescent Questionnaire in the National Health Interview Survey. The socio-demographic variables, sedentary time, and physical activity were collected from the Personal Health Behaviors section, which were self-reported through face-to-face interview. The information for parents' education levels and health-related behaviors (smoking, drinking, and using drugs) was taken from the Adolescent Questionnaire, which was self-reported through a questionnaire. All the questionnaires, based on literature, were developed collaboratively by a multidisciplinary team of researchers with three pilot studies conducted to ensure consistency and reliability.

Physical activity and sedentary time

Participation in physical activity was assessed using the following question: 'Did you participate in any physical activity in the past 2 weeks?' The respondents answered either 'Yes' or 'No'. Respondents who answered 'Yes' were asked to identify the type of physical activity they engaged in from 13 named activities (including walking, jogging, rope skipping, swimming, gymnastics, ball sports, aerobic dance, dance, cycling, mountain climbing, weight lifting, stair climbing and playing hoola hoop) and an open category for other activities was also available. Then, respondents indicated the frequency with which they performed each activity in the past 2 weeks and the average duration per session. The total frequency was divided by 2 for a weekly estimate. They were also asked to report the intensity of breathing during engagement. Respondents who reported participating in physical activity 3 or more times a week for at least 30 minutes that made them breathe hard were classified as 'Active' (meeting the recommended level),²⁵ which is similar to the classification of sufficient vigorous activity in the

US.¹² Respondents defined as 'Insufficiently active' were those who took part in physical activity but did not meet the recommendation. Those who engaged in no physical activity were categorized as 'Inactive'. The validity and reproducibility for these physical activity questions have been reported in previous research.²⁴

In addition, respondents were asked the average numbers of hours spent sitting down each day. The responses for sedentary time were subsequently grouped into 3 levels: under 8 hours, $8 \leq \text{hours} < 12$, and over 12 hours.

Demographic factors

This study also assessed socio-demographic variables and estimates of other health-related behaviors. Respondents were categorized by age into early adolescence (age 12-14) and late adolescence (age 15-18). Other variables were gender, education status (non-students, junior high school, senior high school, and college/university), parental education level (low, middle, and high), residential location (urban and rural), and body mass index (BMI) (normal/underweight, overweight, and obese). Non-students included those who had left school and currently worked or did not work. The level of education attained by respondents' mothers and fathers were coded as 1) no formal education (no schooling), 2) primary school (1-6 years schooling), 3) junior high school (7-9 years schooling), 4) senior high school (10-12 years schooling), 5) college and higher (more than 13 years). A parental education variable was created by adding father's and mother's education score. Then, the parental education scores were further categorised into three levels: low (score 2-4), middle (score 5-8), and high (score 9-10). Residential location was classified in 2 categories based on the population of the areas: urban (population $\geq 150,000$) and rural (population $< 150,000$). BMI was calculated as weight (kg) divided by height (m) squared (kg/m^2) using self-reported weight and height. BMI scores were initially grouped into 3 categories (normal/underweight, overweight, and obese) by the International Obesity Task Force criteria,²⁶ which have been used in many recent studies.^{27, 28} After initial calculations found low obesity prevalence, BMI was recoded for some analyses into a binary variable: weight status, which included 2 groups: overweight/obese and normal weight.

Associated health behavior

With regard to health-related behaviors, respondents were asked 'Are you trying to control your weight?' The answers included 'trying to: 'lose weight', 'maintain weight', 'gain weight', and 'not controlling'. In addition, smoking status was classified into 3 groups: 'Never', 'Occasional: have smoked but less than 5 packs of cigarettes throughout their lifetime', and 'Regular: smoked more than 5 packs of cigarettes throughout their lifetime'. Drinking status was divided into 3 categories, which were classified as 'Never', 'Occasional': those who consumed alcoholic drinks once or less than once a week on average, and 'Regular': those who consumed alcoholic drinks twice or more than twice a week on average. The levels of drug use had 2 categories, yes and no. The answer 'Yes' meant respondents had used illegal drugs.

Table 1. Physical activity, sedentary time, and socio-demographic variables

Variable / Age	Age 12-14		Age 15-18	
	Boys	Girls	Boys	Girls
Sample size (N)	423	450	734	628
Mean height (cm)	161.0	156.2	171.5	59.4
Mean weight (kg)	52.8	47.4	62.4	50.9
Mean BMI (kg/m ²)	20.3	19.4	21.1	20.0
Education status (%)				
Non-students	0	0	9.6	7.2
Junior high school	98.2	99.0	8.8	7.8
Senior high school	1.8	0.7	65.7	64.1
College/university	0	0.2	15.9	21.0
Parental education level (%)				
Low	9.8	7.7	13.2	14.5
Middle	66.5	70.9	67.6	64.7
High	23.7	21.4	19.3	20.9
Residential location (%)				
Urban	55.8	55.6	59.7	59.2
Rural	44.2	44.4	40.3	40.8
Engage in physical activity (%)				
No: Inactive	10.9	16.7	23.7	30.7
Yes: Insufficiently active	52.2	54.9	47.3	47.5
Yes: Active (Meet the recommended level)	36.9	28.4	29.0	21.8
Sedentary time (%)				
Under 8 hrs	19.2	15.8	31.1	22.1
8 ≤ hrs <12	49.1	54.2	41.7	45.4
Over 12 hrs	31.8	30.0	27.2	32.5

Data analysis

Descriptive statistics on activity levels by age and gender were calculated to describe the characteristics of the groups of respondents. T-tests were used to compare group means on key variables. Univariate logistic regression analysis was performed to evaluate the relationships between physical activity and demographic and associated health behavior variables. Variables showing significant relationships were then entered into a multivariate logistic regression model to explore the most powerful determinants of engaging in physical activity. All the statistical analyses were carried out using the SPSS 12.0 statistical package.

Results

Prevalence of physical activity and sedentary time

The prevalence of physical activity, sedentary time, and the socio-demographic characteristics of respondents are presented in Table 1. The prevalence of engaging in any level of physical activity was 78.2% among adolescents (81% for boys and 75.1% for girls, respectively). Among boys, more than 89% of adolescents aged 12-14 engaged in physical activity, while only 76.3% of adolescents aged 15-18 participated in physical activity. Likewise, more early adolescent girls engaged in physical activity than late adolescents (83.3% and 69.3%, respectively). When the Taiwan recommendation of physical activity was considered, it was found that only 28.4% of adolescents met the recommended level. For boys, 36.9% of early adolescents reached the recommended level, while less than 30% of late adolescents met this level. In girls, 28.4% of early adolescents and only 21.8% of late adolescents met the recommendation.

The mean amount of sedentary time for all respondents

was 9.5 hours per day. The majority of respondents (76.7%) reported sitting more than 8 hours each day and the proportion sitting more than 12 hours was over 30% (ranged from 27.2% for older boys to 32.5% for older girls) (Table 1). Results revealed that there was a significant difference in the average sedentary time between boys (Mean=9.3, SD=3.50) and girls (Mean=9.7, SD=3.25) ($t=-2.884$, $p=.004$). For boys, those engaging in physical activity had higher sedentary time than those having no physical activity ($t=-3.438$, $p=.001$). The 12-14-year-old boys spent more time being sedentary than 15-18-year-old boys ($t=3.898$, $p<.001$). The overweight/obese had higher sedentary time than normal weight adolescents ($t=2.765$, $p=.006$). Urban youth, students, non-smokers, non-drinkers, and those trying to control weight had higher sedentary time than compared groups ($t=2.043$, $p=.041$; $t=6.932$, $p<.001$; $t=6.582$, $p<.001$; and $t=2.801$, $p=.005$, respectively). For girls, only three variables showed a difference in sedentary time. Those girls engaging in physical activity had higher sedentary time than those having no physical activity ($t=4.132$, $p<.001$). Female students and non-smokers also spent more time being sedentary ($t=6.053$, $p<.001$ and $t=2.354$, $p=.019$, respectively).

Figure 1 shows the percentage of adolescents being inactive and being sedentary more than 12 hours each day by age. The peaks of 'sedentary over 12 hours' occurred at age 14 during early adolescence, and at age 17 during late adolescence. However, the prevalence of inactivity grew with increasing age. Of those being sedentary over 12 hours, 19.8% were inactive, while more than 80% of them still engaged in some level of physical activity. All in all, adolescents engaging in physical activity sat down more than those being inactive and girls had higher

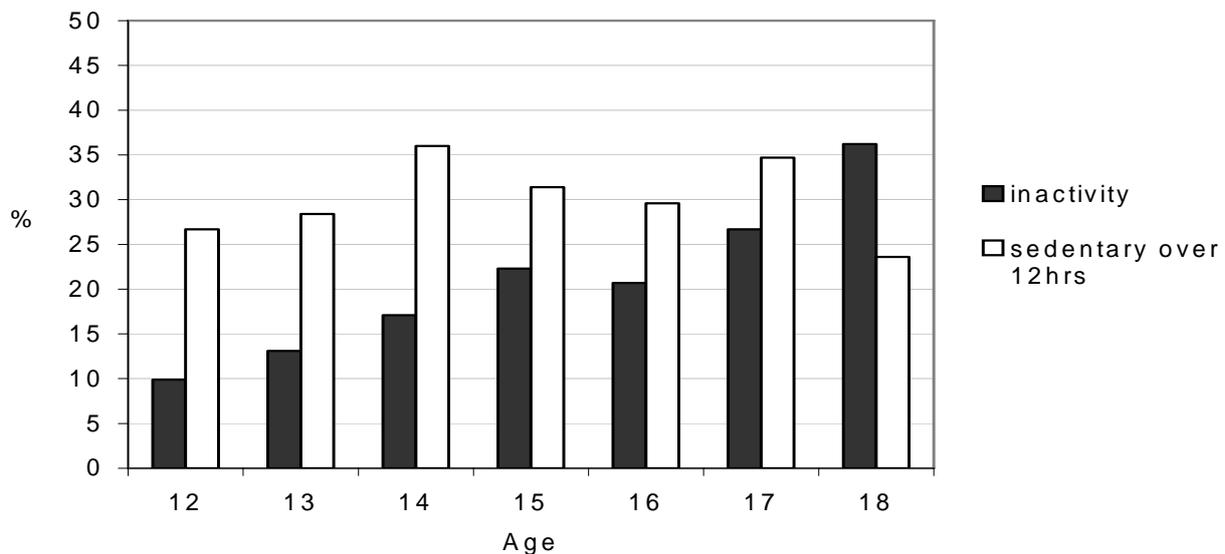


Figure 1. Percentage of being inactive and sedentary over 12hrs

Table 2. The top five popular activities in Taiwanese adolescents

Ranking	Age 12-14		Age 15-18	
	Boys (N=377)	Girls (N=375)	Boys (N=560)	Girls (N=435)
1 (%)	Ball sports (61)	Ball sports (38)	Ball sports (66)	Ball sports (37)
2 (%)	Cycling (16)	Cycling (15)	Cycling (9)	Jogging (12)
3 (%)	Jogging (6)	Jogging (13)	Jogging (7)	Gymnastics (11) [†]
4 (%)	Gymnastics (4) [†]	Gymnastics (13) [†]	Gymnastics (4) [†]	Cycling (8)
5 (%)	Swimming (3)	Swimming (6)	Swimming (3)	Hoola hoop (8)

[†]Gymnastics: including Gymnastics, Tai Chi, Kung Fu and Martial Art

sedentary time than boys.

Type of physical activity

The most common physical activities in Taiwanese adolescents are presented in Table 2 by age group and gender. The preferences of physical activity were the same in all boys and young girls with ball sports being the most popular activity, followed by cycling, jogging, gymnastics, and swimming. For older adolescent girls, ball sports also occupied the first place. However, jogging jumped into the second place, replacing cycling, which slipped to the fourth place behind gymnastics. Meanwhile, hoola hoop replaced swimming as the fifth most popular activity in this subgroup.

Relationships with socio-demographic variables and health-related behaviors

The results of the univariate and multivariate logistic regressions are presented in Table 3. The univariate analyses showed that eight variables were significantly associated with physical activity. Upon completion of univariate analyses, significant variables were selected for the multivariate analysis. In this study, three variables (parental education level, weight status and drug use) were not significant in the univariate test ($p=.078$, $p=.242$, and $p=.280$, respectively). However, since parental education level and weight status p -values were less than .25, the two variables were still considered candidates for the multivariate model. Hosmer *et al.*²⁹ and Wang and Ghou³⁰ suggested that variables whose univariate test had a p -value

<.25 should be included in the multivariate model, since using a more traditional level (such as 0.05) often failed to identify variables known to be important. Use of the traditional level has the disadvantage of excluding variables that are potentially important at the model building stage.

In the multivariate model, eight variables including sedentary time, age, gender, education status, residential location, smoking status, drinking status, and weight control behaviors were significantly associated with engaging in physical activity. Early adolescents and boys had two times greater odds of engaging in physical activity than late adolescents and girls, respectively. College/university students were more likely to be active than non-students (AOR= .30, 95%CI= .17-.55); senior high school students were nearly 60% more likely to engage in physical activity than college/university students. Respondents living in urban areas were 30% more likely to engage in physical activity than those living in rural areas. In addition, adolescents who did not control their weight were less likely to engage in physical activity than those who wanted to lose weight (AOR=3.17, 95%CI= 2.08-4.81) and those who wanted to maintain weight (AOR=2.48, 95%CI= 1.65-3.72).

With regard to health-related behaviors, results indicated that smoking and drinking had significant associations with physical activity engagement. In the univariate model, adolescents who smoke or drink regularly were more inactive than those who never smoke or drink (AOR=3.09, 95%CI= 2.09-4.57 and AOR=4.36, 95%CI=

Table 3. Univariate and Multivariate logistic regression analyses of engaging in physical activity

Variable	N	Engaging in physical activity (%)		Univariate Model			Multivariate Model		
		No	Yes	COR [‡]	CI 95%	p	AOR [§]	CI 95%	p
Age						<.001		1.45-4.15	.001
Age12-14	870	13.9	86.1	2.29	1.83-2.87		2.45		
Age15-18	1361	26.9	73.1	1			1		
Gender						.001		1.65-2.77	<.001
Boys	1155	19.0	81.0	1.41	1.15-1.72		2.14		
Girls	1076	24.9	75.1	1			1		
Education status						<.001			<.001
Non-students	110	65.5	34.5	.21	.13-.34		.30	.17-.52	<.001
Junior high school	916	14.7	85.3	2.27	1.62-3.17		1.19	.68-2.08	.553
Senior high school	853	20.4	79.6	1.53	1.10-2.12		1.59	1.12-2.26	.010
College/university	238	28.2	71.8	1			1		
Parental education level						.078			.969
Low	237	24.5	75.5	.65	.44-.96		1.00	.64-1.57	.998
Middle	1343	21.4	78.6	.77	.58-1.03		1.03	.75-1.42	.835
High	419	17.4	82.6	1			1		
Residential location						.010			.034
Urban	1293	19.9	80.1	1.31	1.07-1.60		1.31	1.02-1.69	
Rural	939	24.5	75.5	1			1		
Weight status						.242			.054
Overweight/obese	293	18.8	81.2	1.21	.88-1.65		.69	.48-1.01	
Normal weight	1794	21.8	78.2	1			1		
Smoke						<.001			.020
Never	2005	20.9	79.1	3.09	2.09-4.57		1.53	.87-2.69	.139
Occasional	117	16.2	83.8	4.21	2.27-7.83		3.22	1.42-7.34	.005
Regular	109	45.0	55.0	1			1		
Drink						.002			.032
Never	2082	21.1	78.9	4.36	1.46-13.05		.68	.13-3.39	.633
Occasional	133	30.1	69.9	2.71	.86-8.58		.36	.07-1.83	.216
Regular	13	53.8	46.2	1			1		
Drug use						.280			
No	2098	21.1	78.9	1.64	.67-4.01				
Yes	23	30.4	69.6	1					
Sedentary time						<.001			.003
Under 8 hrs	519	31.8	68.2	.53	.41-.69		.72	.52-1.00	.050
8≤hours<12	1042	18.2	81.8	1.10	.86-1.41		1.22	.91-1.62	.181
Over 12 hrs	673	19.8	80.2	1			1		
Weight control						<.001			<.001
Loss weight	313	13.4	86.6	2.16	1.53-3.05		3.17	2.08-4.81	<.001
Maintain weight	284	14.4	85.6	1.99	1.40-2.82		2.48	1.65-3.72	<.001
Gain weight	52	13.5	86.5	2.16	.96-4.82		2.59	.97-6.91	.058
Don't control	1582	25.1	74.9	1			1		

[‡]:Crude Odds Ratio [§]:Adjusted Odds Ratio (Omnibus Tests of Model Coefficients: .000; Hosmer and Lemeshow Test: .162; Classification Table: Predicted Percentage Correct is 80.5 (The cut value is .500))

1.46-13.05, respectively). Regular smokers were also less active than occasional smokers in both univariate and multivariate models (AOR=4.21, 95%CI= 2.27-7.83 and AOR=3.22, 95%CI= 1.42-7.34, respectively). No significance was found among drinking levels in the multivariate model.

Discussion

This study illustrates that nearly 80% of Taiwanese adolescents engage in some level of physical activity. There was a decline in activity with age, a clear gender difference with girls being less active, and girls in the 15-18-age range being the least active sector. These findings are similar to most published studies,¹³⁻¹⁶ but have not been previously reported in a representative sample of Taiwanese adolescents.

A high proportion of adolescents (nearly 80%) reported being sedentary more than 8 hours a day. Academic per-

formance is highly valued for Chinese, and students study for eight hours per day in schools in Taiwan. Two peaks occurred in mean sedentary time when assessed across age groups. These were at 14 and 17 in both genders, which coincide with years of study for national examinations for secondary schools and university entrance in Taiwan. However, it is noticeable that about 80% of this group still participated in some physical activity. A meta analysis of the association between sedentary behavior and physical activity has been found to be relatively weak with small and negative relationship between TV viewing and physical activity.³¹ Feldman, *et al.*³² examined the relationship between different types of sedentary pursuits and physical activity. The results suggested that increased time spent in positively sedentary behaviors (e.g., reading or doing homework) was associated with increased physical activity. Therefore, some Taiwanese youngsters are probably attempting to counteract their long study periods

Table 4. Physical activity preferences in various countries

Ranking	Taiwan (Sample size = total 2235; age 12-18)		Japan ³⁵ (Sample size = total 1800; age 10-19)		Hong Kong ¹⁴ (Sample size = total 856; age 5-14)	
	Boys (N=937)	Girls (N=810)	Boys (N=622)	Girls (N=559)	Boys	Girls
1	Ball sports	Ball sports	Soccer	Badminton	Basketball	Swimming
2	Cycling	Jogging	Baseball	Volleyball	Swimming	Badminton
3	Jogging	Cycling	Basketball	Basketball	Soccer	Jogging
4	Gymnastics	Gymnastics	Muscular strength training	Walking	Table tennis	Cycling
5	Swimming	Swimming	Swimming	Swimming	Badminton	Dancing
6	Mountain climbing	Hoola hoop	Jogging/running	Rope skipping	Jogging	Basketball
7	Stair climbing	Aerobic dance	Table tennis	Jogging/running	Cycling	Volleyball
8	Others	Stair climbing	Bowling	Soft tennis	Track and field	Callisthenics
9	Weight lifting	Mountain climbing	Volleyball	Bowling	Taekwondo	Track and field
10	Aerobic dance	Walking	Badminton	Muscular strength training	Hiking	Table tennis

by engagement in sport or exercise. However, it is not possible to distinguish academically-relevant sedentary behaviors from recreational sedentary behaviors in this study due to the lack of specificity of the sedentary behavior measure.

Consistent with other findings, more urban adolescents participated in physical activity than rural adolescents. This parallels evidence in Spain and Australia, suggesting that culture or societal background has little impact on urban/rural differences and that it is perhaps a ubiquitous occurrence.^{15, 33} The reasons may be that urban adolescents have more opportunities to access sport facilities and also have more choices for recreational and leisure activities.

For Taiwanese adolescents, physical education lessons seem to have strong influence on popular types of physical activity, because ball sports and swimming are important topics for physical education in Taiwan. Gordon-Larsen, *et al.*³⁴ also found important associations between participation in school physical education with activity patterns of adolescents in their study. In other Asian countries such as Hong Kong and Japan,^{14, 35} ball sports remained the most popular physical activity (Table 4). Differences among countries were also noticed. Track and field (athletics) was popular only in Hong Kong; cycling was not in the Japanese top ten; mountain climbing and stair climbing were preferred by Taiwanese. Japanese girls played rope skipping and Taiwanese girls played hoola hoop, which might due to body image concerns (e.g. using hoola hoop to try and achieve a smaller waist).

The prevalence of unhealthy behaviors is much lower than in the US and UK,^{12, 36} especially for girls (Smoking: 16% in boys and 4% in girls; drinking: 10% in boys and 3% in girls; using drugs: 1% in both boys and girls). Although the numbers in these subgroups were small, about half of the regular smokers or drinkers were totally inactive suggesting that these unhealthy behaviors might cluster together in Taiwanese adolescents. These findings compare with the equivocal findings for adolescents from westernized countries. In a review, Sallis, *et al.*¹⁶ concluded that the relationship between smoking and physical activity was indeterminate and alcohol use was unrelated to physical activity among adolescents. Drug con-

sumption was also found to have no association with physical activity by Lasheras and his colleagues.¹⁵ On the other hand, other research has shown that those engaging in regular physical activity were less likely to smoke, consume alcoholic drinks, or abuse substances.³⁷⁻³⁹ In this study, smoking and drinking behaviors had significant negative associations with physical activity engagement in the univariate model, but the relationships were weak in the multivariate model.

Limitations imposed by the physical activity measurement should be borne in mind when considering the results presented in this study. Societies construct and understand physical activity in different ways. Westernized countries tend to address overall or composite physical activity.^{40, 41} Several forms of activity such as household and yard work activities, occupational activity, and self-powered transport (i.e. walking to work or school) are excluded within surveys in Taiwan. Moreover, questionnaires in different countries examined activities for different time periods, for example during the last 7 days in the US and UK,^{12, 40} through 2 weeks in Taiwan to 1 year in Japan.³⁵ These differences make for difficult cross-country comparisons.

Despite these limitations, the findings suggest that there are high-risk groups for high sedentary and low physical activity levels among Taiwanese. Physical inactivity is likely to be contributing to poor health in Taiwanese adolescents as with adolescents in many westernized countries. It seems that high cultural values for academic achievement, that is reflected in study habits and restricted time opportunity for engagement in recreational physical activity may be at least a partial explanation.

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Original Article

Physical activity among adolescents in Taiwan

Li-Jung Chen MPE, Anne M. Haase PhD and Kenneth R. Fox PhD

University of Bristol, Department of Exercise, Nutrition and Health Sciences

台灣青少年的體能活動

目的：調查體能活動盛行率及其相關因素的研究大多數在西方國家。迄今，在台灣仍未有以全國代表性樣本，探討青少年體能活動盛行率之文章在國際期刊刊登，跟體能活動與否的相關因子也所知不多。本研究目的為評估台灣青少年的體能活動盛行率，並找出與其相關的社會人口學及行為變項。

方法：資料取自 2001 年國民健康訪問調查。樣本為 2235 名年齡在 12-18 歲的青年人(1157 名男性及 1078 名女性)。採用單變項及多變項羅吉斯迴歸分析評估人口學及行為變項與體能活動之相關性。

結果：雖然 80% 的青少年自陳從事一些體能活動，但只有 28.4% 的樣本達到建議量。男孩與居住在城市的青少年比起女孩及居住在鄉村的青少年活動量較高；且體能活動盛行率隨著年齡遞減。平均每天靜坐的時間為 9.5 小時。雖然非學生、規律抽菸者或飲酒者只佔人數的一小部分，但其中約有一半是不運動的。

結論：台灣青少年中活動量能達到健康建議量的百分比很低，尤其 15-18 歲的女孩活動量最低。與體能活動相關的因素包含人口學變項及健康行為變項(例如：年齡、性別、抽菸)兩者。這些資料提供未來比較及初步確認台灣有較低體能活動的高危險族群的基礎。

關鍵字：青少年、健康、體能活動、台灣。