

Implementation of sunshine sports in secondary schools in Tianjin, China: Barriers and prospects

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Abstract

The purpose of the present study was to evaluate the implementation of sunshine sports in secondary schools of Tianjin, China. A total of 450 physical education (PE) teachers in 34 secondary schools drawn from six districts in Tianjin participated in the study. A standardized questionnaire was used to obtain information regarding time allocation, extracurricular activities, teacher qualifications and facilities. The results showed that in 64.71% of the secondary schools the time allocation for physical activity fell short of the recommended 60 minutes per day for moderate to vigorous physical activity. However, when the number of weekly PE classes was calculated across the schools, the results showed that 67.65% of the secondary schools in Tianjin met the official requirement for teaching sunshine sports, except during examination period in which 80% of PE classes were substituted by other 'academic' lessons. A total of 75 teachers (60%) were not qualified to teach PE and 62% of the secondary schools had inadequate PE facilities and equipment. It was concluded that most secondary schools in Tianjin did not meet the minimum guidelines on sunshine sports recommended by the Central Committee of the Chinese Communist Party. Deficiencies in physical activity time allocation, insufficient qualified PE teachers and inadequacies in facilities and equipment are considered significant barriers to providing opportunities for developing sunshine sports in the PE curriculum. It is therefore imperative that attention should be given to development of sunshine sports in Tianjin schools. Long-term strategies for developing sunshine sports to enhance high quality PE in prominent secondary schools are recommended.

Keywords: Sunshine sports, secondary school, physical education, statutory requirements, Tianjin, China.

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Introduction

The health of today's youth in China continues to deteriorate, which highlights the link to sedentary lifestyle (Xu, 2009). Physical inactivity has become more prevalent in all populations, regardless of age, gender, ethnicity, or socio-

economic status, and it has been shown to increase the potential health implications like obesity, cardiovascular disease, metabolic diseases, hypertension and other comorbidities (Holt *et al.*, 2013). According to World Health Organization (WHO) (2009), physical inactivity is predicted to be the major cause for almost 21–25% of colon and breast cancers, 27% of diabetes and nearly 30% of ischaemic heart disease liabilities. The 2001-2002 study on Health Behavior in School-Aged Children (HBSC) examined the association between overweight and physical activity patterns and found a significant negative relationship between physical activity participation and BMI among school-aged youths in 29 out of the 33 countries (Sacchetti *et al.*, 2013). As a result of the increased prevalence of sedentary lifestyle in China, it is imperative that physical activity guidelines should be established for youth to promote positive attitudes towards physical activity among school-aged children. This would potentially have a positive impact on the health and well-being of the general population (Rainer *et al.*, 2012).

In view of the declining levels of physical health among young students in China, a national conference on “sunshine sports” was proposed by Department of Education, State Sports General Administration in 2007. The conference was aimed at developing a curriculum on sunshine sports as part of the PE which will provide ample opportunity for students to sun-bath in the outdoors and enjoy movements associated with physical activity. The purpose of the programme is to encourage majority of young students to actively participate in physical activity, effectively improving their health and develop positive physical activity habits (Ministry of Education, State Sports General Administration, 2007).

As recommended by the sunshine sports guidelines, students should accumulate at least 60 minutes per day of moderate to vigorous physical activity allowing for multiple physical activity strategies at a variety of levels of intervention (e.g. individual, social and policy), encourage students to go out of the classroom to breathe fresh air and increase the range of extra-curricular sporting activities, help students to improve personal skills, self-efficacy and at least acquire two basic movement skills. The guidelines also prescribe that more than 85% of students’ physical activity participation should meet the recommendations. As stipulated in the guidelines, the physical activity programme should extend into the classroom, recess time, before and after school hours, and attract family and community involvement. The underlying purpose of sunshine sports is to facilitate and promote life-long participation in physical activity. Many examples of the impact of sunshine sports on physical activity promotion in different tiers of Chinese education system have been investigated (Liu & Yuan 2007; Zhang, 2008; Ma, 2009). However, despite the positive health benefits of sunshine sports, it is inconclusive whether these activities have been implemented according to government’s guidelines in Tianjin secondary schools. No study could be found that has investigated the implementation of sunshine sports in

Tianjin secondary schools; which underscores the salience of the present study. Therefore, the purpose of this study was to evaluate the implementation of sunshine sports in Tianjin secondary schools and provide valuable information to improve the teaching of sunshine sports in view of its health benefits and curriculum implications.

Methodology

Study design

A descriptive survey, involving qualitative and quantitative methods of assessments, was used for data collection.

Sample

A total of 34 prominent secondary schools (these are similar to college preparatory schools in other countries) drawn from six districts in Tianjin, China volunteered to participate in the study. The schools were selected from a comprehensive list of secondary schools in Tianjin obtained from the municipal education office.

Questionnaire

A self-administered questionnaire was used to collect data. It consisted of open and closed ended items and validated by a statistician at Tianjin University of sport, Tianjin, China. A Cronbach alpha correlation coefficient (r) of 0.84 was obtained for the questionnaire items ($p < 0.01$), which is the most frequently used statistic to establish internal consistency reliability (DeVon *et al.*, 2007). The questionnaire was designed based on literature on physical activity under sunshine sports and the Chinese official document on sunshine sports (Ministry of Education, State General Administration of Sport, 2007). The PE teachers had to reflect on general issues such as physical activity during PE lessons related to implementation of sunshine sports in general.

The questionnaire had four sections, which addressed various aspects of the guidelines on sunshine sports. Typical themes in each section included the following: Section A: Basic Information (Teachers' ages and qualifications); Section B: Knowledge of Sunshine Sports (Knowledge of the content and types of sunshine sports); Section C: Government Management of Sunshine Sports (Adequacy of funds provided for the implementation of sunshine sports) and Section D: Contents of Sunshine Sport in PE Curriculum (Number of weekly PE lessons, time allocation, activities and didactics).

Procedure

Permission to carry out the study was obtained from the school principals, following standard ethical guidelines (Thomas, Nelson & Silverman, 2011). The PE teachers were requested to complete the questionnaire, as this would reflect a more realistic picture of implementation of sunshine sports in the schools. The questionnaire was administered to a total combined sample of 450 PE teachers from six district secondary schools in Tianjin. Of these, 418 questionnaires were correctly completed and returned; thus yielding a response rate of 92.89%.

Statistical analysis

Data were coded using Microsoft Excel 2003 and analyzed in percentages with SPSS statistical software (version 21).

Results

Time allocation for physical education

According to the Ministry of Education, State General Administration of Sport (2007), schools should offer at least 60 minutes per day of moderate to vigorous physical activity to secondary school students. Based on data collected from the PE teachers in 64.71% (n=22) of secondary schools in Tianjin the time allocation for physical activity was not sufficient. In only 35.29% (n=12) of the schools was physical activity carried out more for than 60 minutes per day (Figure 1).

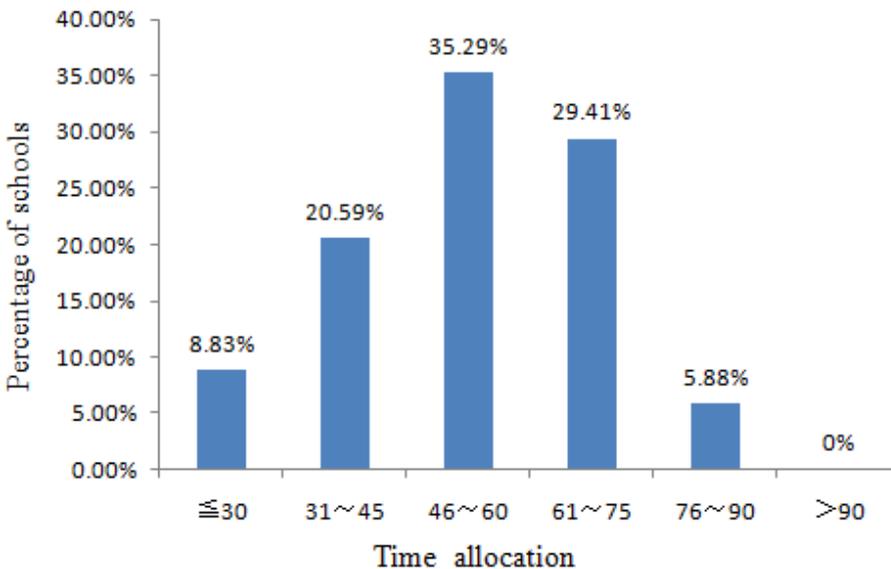


Figure 1: Time allocated for physical activity per lesson

Therefore, the results showed that most secondary schools in Tianjin did not meet the recommended time allocation for teaching sunshine sports in the curriculum.

Figure 2 illustrates the results of weekly time tabling of PE in the schools. Specifically, 67.65% (n=23) of the schools taught PE lessons for more than 3 times a week, while in 32.35% (n=11) of the schools it was taught for less than thrice a week. Therefore, the results indicate that many secondary schools in Tianjin met the official requirement for teaching of sunshine sports in terms of weekly scheduling of PE, although some schools still need to increase the amount of time allocated for PE teaching per week.

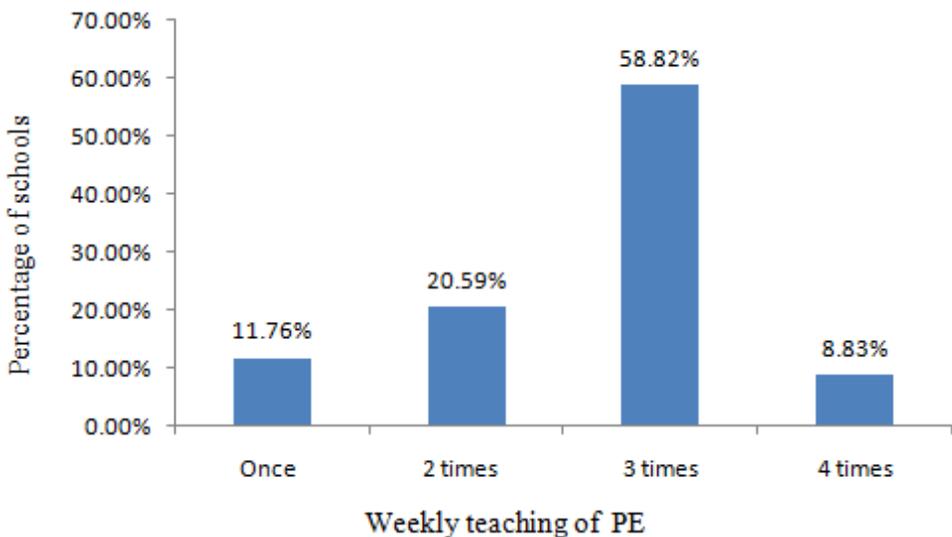


Figure 2: Weekly time tabling for physical education class

In addition, on whether the PE classes were often interchanged or substituted during examination period, 20% of the respondents reacted negatively. It was found that 80% of PE classes were carried out less than twice a week, as they were usually displaced by other ‘academic’ classes or activities.

Extracurricular activities

In order to implement the sunshine policy guideline on enhancing youth sports activities and strengthening young people’s health, the first guiding principle is to ensure that youths engage in one hour of supervised daily physical activities on campus. Extracurricular activities can encourage more students to participate in varieties of activities including students with disabilities to develop wide range of learning experiences and consequently achieve breadth across the curriculum.

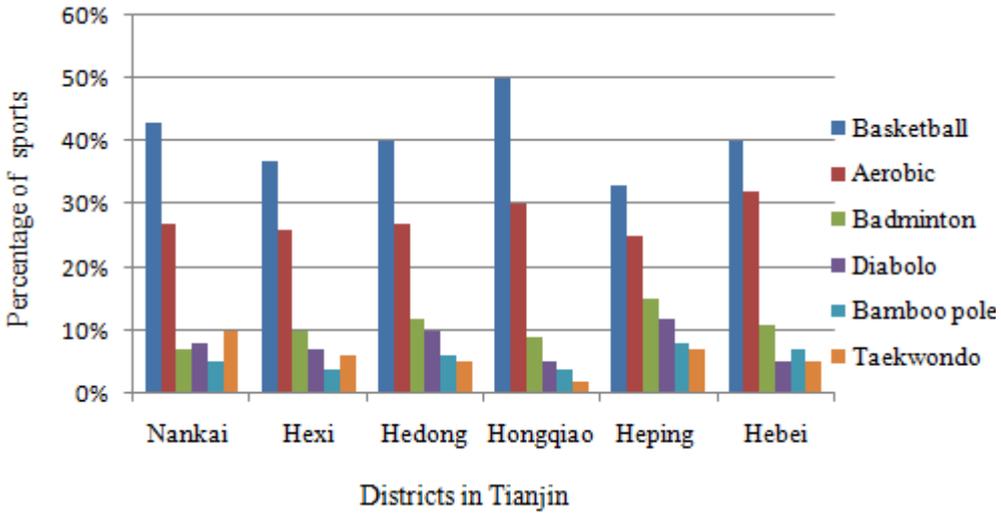


Figure 3: Extracurricular programmes in six district secondary schools

Based on PE teachers’ responses, the extracurricular programmes presented in six district secondary schools did not only include traditional sports like basketball, football, aerobics and Kong Fu, but also have local events like bamboo pole dance and diabolo (Figure 3).

Physical education teacher qualification

PE teachers from six district secondary schools in Tianjin indicated that many of them were not qualified to teach sunshine sports in the PE curriculum. It was clear that they were not familiar with the details of the sunshine sports and relevant documents being circulated to their schools. Regarding the question whether the PE teachers participated in professional development activities related to the organization of sunshine sports, 79% of the schools organized less than two sunshine sports workshops in the past three years (Figure 4). In addition, few PE teachers were aware of the importance of research; 60% of the teachers didn’t have experience of paper publication. Therefore, this highlights the need to establish professional organizations and offer PE teachers professional development opportunities to improve their qualifications and skills.

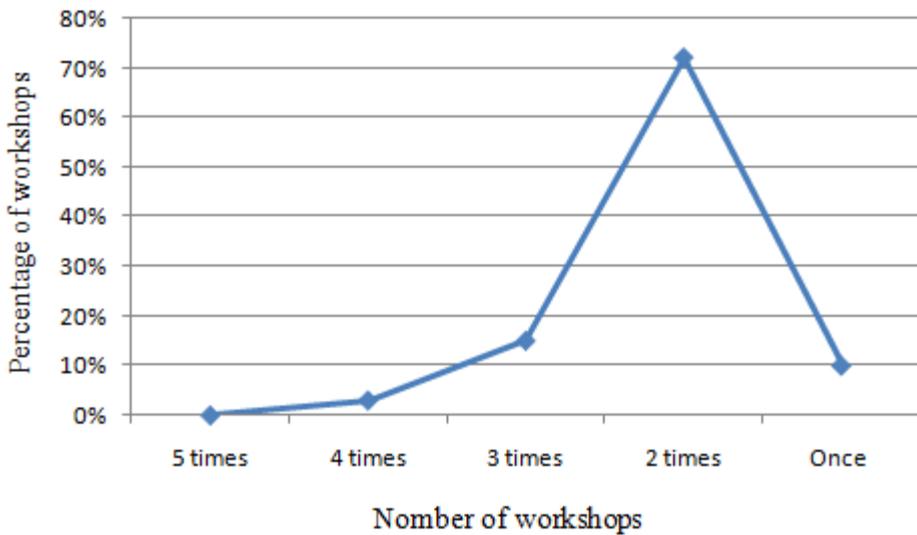


Figure 4: The number of sunshine sports workshops organised

School facilities and equipment

This study also indicated that most secondary schools in Tianjin had problems regarding insufficient facilities and equipment to teach PE. The results showed that 62% of schools still had inadequate facilities and equipment. Specific responses in this regard indicated that 49% and 26% were dissatisfied and strongly dissatisfied, respectively with the PE equipment and facilities in their schools. Only 7.9% of the teachers were satisfied with the teaching resources, while 18% were undecided.

Discussion

The results of the present study regarding the implementation of sunshine sports in secondary schools in Tianjin showed that most of the schools acknowledged the challenges of developing and implementing sunshine sports. Deficiencies in time allocation for physical activity, insufficient qualified PE teachers and inadequacies in facilities and equipment were considered as the most significant barriers to developing sunshine sports and implementing it under the PE curriculum. .

These results are consistent with those of Xin (2009) which indicated that similar problems existed in the implementation of the guidelines concerning physical activity participation of 60 minutes per day in Yichun middle schools. Moreover, Ren and Tang (2008) found that insufficient professional physical education teachers, inadequate physical activity management and equipment were still problematic in many secondary schools. To overcome these barriers, ministries

of education and institutions should dedicate sufficient funds for the provision and maintenance of facilities and equipment, which may help to improve the current situations in many schools.

A comparison with the findings of a study on primary and secondary school learners in Shanxi Province indicated that increase in extracurricular sporting activities and strengthening curriculum resource development can motivate more students to participate and develop a variety of interests and skills (Qin, 2008). According to Ding (2013), studies on extracurricular games in the United Kingdom and its promotion are consistent with the above findings, and emphasized that it is necessary to enhance the physical activity levels and fitness of students. It is also expedient to learn from the practices in foreign schools concerning extracurricular activities so as to promote the development of sunshine sports in Chinese primary and secondary schools. Expanding the range of benefits of sunshine sports programme especially for students with disabilities, forms a functional system of the linkage at school, community and family level which includes culturally recognized creative games (Ding, 2013).

With regard to PE teacher qualification, our study showed that many teachers were not qualified to teach sunshine sports. This situation is exacerbated by the fact that in majority of the schools the teachers were not afforded the opportunity to participate in PE professional development activities related to the organization of sunshine sports. The results of Liu (2013) and Zhao *et al.* (2009) also corroborate the findings of this study; indicating that shortage of teaching resources and qualified teachers are major concerns in schools. Similar findings have also been reported by Xu (2009). From another perspective, Napper-Owen *et al.* (2008) believe that active participation in professional development are essential in helping teachers stay current in their field. These authors stated that professional development provide teachers the opportunity to improve their teaching practices and acquire the skills of writing articles for professional journals; and offer to share their expertise and knowledge through presentations at workshop. Morgan and Bourke (2008) found a strong relationship between teachers' training in PE and their perceived confidence to teach the subject.

Provisions of appropriate facilities, equipment and well-designed PE programme in schools have a positive effect on the students' perception and behavior towards physical activity (Rainer *et al.*, 2012). Our findings, however, showed that many of the prominent schools in Tianjin still had inadequate facilities and equipment. Consistent with the results of Xu (2009) and Barroso *et al.* (2005) the same problem concerning inadequate indoor and outdoor facilities was a major obstacle in schools in Shandong Province of China and Texas, respectively. Xu (2009) further suggested that schools should dedicate sufficient funds for provision of sports facilities and equipment. Addressing the condition and maintenance of facilities are important considerations for enhancing its

sustainability. In general, the present findings are in agreement with Rainer *et al.* (2012) suggesting that whatever the challenge for PE delivery in school, efforts should be made to ensure that it is effectively delivered.

Conclusions and recommendations

The findings of this study revealed that most prominent secondary schools in Tianjin did not achieve the recommendations of the sunshine sports policy. Deficiencies in physical activity time allocation, insufficient qualified PE teachers and inadequacies in facilities and equipment were considered to be significant barriers to the effective teaching and development of sunshine sports as part of the PE curriculum. It is therefore imperative that attention should be given to developing sunshine sports in Tianjin's prominent secondary schools. Tianjin municipal government should devise strategies to promote the development of sunshine sports in schools. Furthermore, future studies are needed to provide information needed to enhance high quality teaching of PE and provide a long-term strategy to develop sunshine sports in Tianjin's prominent secondary schools.

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