News & Views

Symposium and workshop on healthy lifestyle programs for weight management

Rodolfo F. Florentino, MD, PhD
Nutrition Foundation of the Philippines, Quezon City, Philippines

Introduction

Overweight and obesity are becoming public health concerns in many countries in Asia. With the change in lifestyle now occurring in the population, not only is the problem growing among adults, but the problem now seems to be creeping into the children population. The shift toward a more sedentary lifestyle and the consumption of calorie-dense diets, coupled with improving economic base and environmental conditions, is apparently contributing to the transition from the problem of undernutrition to overnutrition in many segments of the population. While public health strategies for the control of this problem are being put in place in some countries of the region, the issues of impact and sustainability of these strategies remain to be elucidated. School-based intervention programs are an attractive strategy to prevent the problem from spreading, but again their impact and sustainability remain at issue.

The Second Asia-Oceania Conference on Obesity organized by the Malaysian Association for the Study of Obesity (MASO) on September 7-9, 2003, in Kuala Lumpur, Malaysia, provided an opportunity for the International Life Sciences Institute Southeast Asia Region (ILSI SEAR) to pursue its program on promoting healthy lifestyle and physical activity for weight management. ILSI SEAR sponsored a symposium within the MASO conference focusing on evaluating the impact and sustainability of public health strategies for the control of obesity, followed by a post-conference workshop on school-based intervention programs directed to the prevention and control of obesity in children.

Symposium: evaluating impact and sustainability of healthy lifestyle programs for weight management

The Symposium on Healthy Lifestyle Programs for Weight Management was chaired by Dato' Dr. M. Jegathesan, Deputy President of the Olympic Council of Malaysia, and co-chaired by Dr. Richard Winsley, University of Exeter of the United Kingdom.

In his paper, Dr M Jegathesan declared that while the principles of health-enhancing activities including exercise and physical fitness are fairly well understood, there are barriers to their application, both at the individual and community levels. At the individual level, behaviour change does not occur because of lack of conviction and motivation, inertia, lack of resources, and presence of competing interests. It requires the personal decision of the individual to make the change – demonstrated by the commitment to see it through and the motivation to sustain it. In fact, health-enhancing activities can be readily integrated into most people's lives by making relatively minor adjustments to their daily routines. At the community level, barriers to promotion of physical activity include lack of political will, contrary interests, inadequate resources, and inappropriate criteria for priority setting. Together with promotive policies, programs and facilities; local governments and public authorities must also build the awareness, provide the know-how, and promote an enabling and facilitating environment. Promotion of a healthy lifestyle should be broad-based and integrated into national policies involving many sectors such as health, development, education, housing, town planning and transportation. This requires intersectoral and even ministerial collaboration and cooperation. With modest investment, Dr. Jegathesan concluded that great returns could be achieved in terms of improved health and less health care costs.

Ms. Debra L. Kibbe, Acting Executive Director, ILSI Center for Health Promotion, USA, emphasized the important role of schools in promoting healthy nutrition and physical activity habits in children and adolescents. Ms. Kibbe reviewed several school-based programs that integrate physical activity and nutrition education and have produced successful results. She cited the Healthy Start and the Animal Trackers programs for preschool children focusing on development of healthful nutrition habits and gross motor skills; CATCH^{TM} (Coordinated Approach To Children's Health) for K – 8th grade children which showed positive differences in self-reported daily energy intake and vigorous activity; the TAKE 10!$^{®}$ program for K – 5th grade students which demonstrated reduced off-task and fidgeting behaviors among children; SPARK (Sports, Play and Active Recreation in Kids) for pre-K to middle school with its focus on quality physical education and self-monitoring; TEENS (Teens Eating for Energy and Nutrition in Schools) for 7th graders with its peer-led nutrition education strategy; and GEMS (Girls Health Enrichment Multi-site Program) for 8-10 year old African American females, which showed positive outcomes in terms of BMI, after school physical activity, and reduced television viewing. Finally, Ms. Kibbe described the School Health Index (SHI) developed by the Centers for Disease Control and Prevention in the US. The eight SHI modules (http://www.cdc.gov/nccdphp/dash/SHI/) address: Health Policies and Environment, Health Education, Physical Education and Other Physical Activity Programs, Nutrition Services, School Health Services; School Counseling, Psychological, and Social Services; Family and Community Involvement, and Staff Health Promotion. In summary, school-based programs in the US have demonstrated reduced hours of television watching, increased frequency and duration of physical activity, decreased time off task in the classroom, decreased intake of total and saturated fats, increased consumption of fruits and vegetables, slower rate of increase in BMI percentile, and improved blood lipid levels. Ms Kibbe concluded that school interventions

should be culturally and linguistically sensitive, grade- and age-appropriate, comprehensive in coverage of health issues, convenient, and low in cost.

Dr Andrew P Hills of the Queensland University of Technology, Australia, addressed the importance of a multisectoral approach in promoting sustainable physical activity programs. He described three levels of physical activity prevention programs in the form of a pyramid: Level 3: Public health approach to physical activity promotion, which is the area of health professionals; Level 2: Limited advice such as generalized activity prescription; and Level 3: Individualized approach through specific exercise prescription, which is the province of exercise physiologists. Dr Hills pointed out salient barriers to physical activity promotion according to socio-economic level. For those in the higher socio-economic levels, an 'unpredictable lifestyle' and long and erratic work hours prevent them from doing physical exercise; for those in the middle level, 'lack of interest' is the main factor; for those in lower classes, 'inconvenient access', geographical location, and physical and psychological health are the principal barriers. For all socio-economic levels, inclement weather or lack of time is often to blame. Thus, physical activity intervention programs should be tailored to the needs of specific sub-groups, such as the different socio-economic classes, men vs. women, older vs. young adults. Dr Hills described a simple evaluation framework for assessing the impact of public health programs of this nature: determining Reach, assessing Effectiveness, determining the extent of Adoption and Implementation, and assessing sustainability and Maintenance (REAIM). Dr Hills concluded that the key question is how to promote physical activity and prescribe exercise to maximize enjoyment, adherence, and tolerance.

Dr Teh Kong Chuan, Director of the Sports Medicine & Sports Science Division, Singapore Sports Council, described the Singapore experience in promoting physical activity at the national level. In Singapore, physical activity is promoted by many organizations, with the Singapore Sports Council as the main player. The Council has been promoting sports in the country since its inception in 1973, through the provision of sports facilities, the implementation of 'Sports for All' programs and activities, and marketing of sports to the general population. The provision of sports facilities follows the Master Plan of Sports Facilities first formulated in 1975. In 1985, the Master Plan called for providing sports facilities within 3 km radius of the homes of most Singaporeans. In 1996, the Sports for Life program was launched, targeting the less physically active population including senior citizens, housewives and working adults. A nationwide survey in 2001 showed that 38% of the population played sports one or more times a week (16% three or more times a week), compared to 34% in 1997, and daily physical activity averaged 65 minutes per day (compared with 88 minutes per day in 1997), with household chores accounting for 24.6 minutes. Dr Teh concluded that with the activities of daily living becoming less physical in nature, participation in physical activity needs to be further improved. The medical personnel should play a more prominent role in promoting regular physical activity.

Discussion

The discussion that followed the symposium papers dealt with the issue of getting the involvement of teachers and parents. Getting the cooperation of the schools and teachers should involve a top-down approach where both physical fitness and academic achievement are emphasized starting with the principal, and finding a champion in the school for physical education. Getting the teachers to be physically active themselves is also important. Involving the parents is more difficult. Encouraging parents to limit television viewing time and encouraging children to reduce hours of total screen time (computer, video, and TV) are simple, specific, and proven messages.

Policy makers need convincing evidence that physical inactivity is in fact increasing and that physical activity is effective in promoting health. Several indicators were mentioned such as monitoring increase in steps taken per day, weight maintenance in children, and examining specific health outcomes including mental and psychosocial concerns among children. Food provided in school canteens should be examined and modified, for example, portion size, nutrient content, and pricing of foods that are being recommended to improve health. The issue of vending machines is controversial in some schools in the US because some of the proceeds actually go to supporting physical education, sports or other extracurricular activities. The challenge of intervention sustainability is still one area that requires further research. Strategies that have proven effective in some programs were mentioned, including convincing the principals and teachers on the link between health and learning; adequate training of the teachers; having a champion at the local level; and utilizing curriculum tools that are easy to integrate with the existing curriculum.

The Post-MASO conference satellite workshop on school-based intervention programs for healthy weight management

The Satellite Workshop that immediately followed the Second Asia-Oceania Conference on Obesity provided a review of successful strategies and programs in schools that aim to prevent and manage overweight and obesity in children and a discussion of the lessons and challenges learned from such programs. The objective of the Workshop was to encourage nutrition planners and health educators to include balanced and science-based pro-grams that teach sound nutrition and encourage physical activity among school children. As in the above Symposium on Evaluating the Impact of Healthy Weight Management, the Workshop was chaired by Dato' Dr. M. Jegathesan. Mrs.Yeong Boon Yee, Executive Director, ILSI SEAR, welcomed the 24 participants from Brunei, Malaysia, Philippines, Singapore, and Thailand, together with invited experts from USA and Australia.

Debra Kibbe observed that in the US, physical

education and physical activity opportunities in schools are on the decline. For example, in order to increase time for academic instruction, many US schools have reduced or eliminated recess apparently with the assumption that sedentary environment will foster learning. On the contrary, Ms. Kibbe presented studies that showed the link between physical activity and academic achievement. Ms. Kibbe cited the Planet Health program for 6^{th} – 8^{th} graders, with its goal of being physically active, watching TV for less than two hours and eating fruits and vegetables everyday, together with eating fat in moderation; a study of the California Department of Education, which showed that as fitness scores increased, increase in reading and math scores followed; the Brain Gym program which demonstrated the link between movement and academic achievement; the TAKE 10!® program, which showed reduction in off-task time and fidgeting; as well as other studies that showed improved classroom mood and improved memory with increased physical activity. Ms Kibbe concluded that a positive relationship does exist between physical activity and nutrition, and children's ability to perform academically. Areas that need further research include the effect of micronutrient deficiency and physical performance and gross motor skill development, the influence of exercise on specific academic objectives, standardized test scores in very fit children vs those that are unfit, and how the effect of physical activity promotion in childhood tracks into adulthood.

Dr Andrew P Hills expressed the view that the school is an under-used setting for providing and facilitating innovative physical activity strategies in children. Dr. Hills emphasized the need for favorable school policies, improved teacher training and support, improved curriculum, and provision of physical facilities that promote physical activities. However, there should be a greater interaction among parents, teachers, and children, such that parents should be actively involved in any school program promoting physical activity in children. Among the strategies that engage parents in promoting physical activity of their children, Dr Hills cited the "Walk to/Walk from School" program, aside from actually playing with their children, providing encouragement, serving as active role models, and providing transport to the children's activity settings. In addition to the schools and parents, Dr Hills pointed to the Early Childhood Care and Education Centers working together with the whole community, in promoting physical activity in young children. Dr Hills suggested the application of the Natural Learning Theory Framework for Learning to the promotion of physical activity in children. Dr Hills recommended that the physical activity setting should provide an environment that is relaxed and friendly, supportive and caring, fun and enjoyable. Other strategies include focusing on health instead of weight *per se*, fostering enjoyment, encouraging "can do" mentality, and downplaying shame and blame associated with body fatness. During the discussion, Dr Hills emphasized that the key for involving the schools is the active leadership of a local champion to promote physical activity in schools.

Case studies

The next session in the workshop dealt with case studies of on-going school-based programs including their strategies and methods, an assessment of their impact, and the problems and challenges facing them.

Ms Kibbe described the TAKE 10!® program in greater detail. TAKE 10! is a classroom-based program designed for elementary school children in kindergarten through fifth grade. The curriculum tool integrates 10-minute periods of physical activity with academic content and learning objectives in math, science, language arts, and social studies. The program is now distributed to over 4500 schools in 46 states in the US. An evaluation of the program indicate that teachers use the program on average of 3-5 times per week, students demonstrate less fidgeting and time off-task, and that each activity takes 35-50 kcal of energy expenditure. The TAKE 10!® Middle School program for students Grades 11 to 14 (6^{th} through 8^{th} in the US), encourages students to accumulate at least 10,000 steps daily while taking an imaginary trek in the United States, at the same time addressing important learning objectives. Using an electronic step counter, each student monitors his/her physical activity throughout the day. Results of qualitative evaluations suggest an average increase of 21% of the reported daily step counts from baseline. Focus group discussions also indicated favorable reactions from teachers and students. Ms Kibbe also described the Animal Trackers Pre-School program, which is a gross motor skill development program for 3 to 5 year old children. The program activities integrate various motor skills with preschool content and learning areas. The implementation results demonstrated an average increase of structured physical activity by 50 minutes per student per week.

Dr Andrew Hills pointed to other strategies arising from their experience in Australia, such as prescribing activities in and out of school, e.g weekend activities; providing teachers with adequate tools for implementation; training teachers as well as parents; and providing teachers and parents with their main goal. The objective is to fill the gap that is not being provided by physical education in school.

Dr Sangsom Sinawat, Ministry of Health, Thailand, described the overweight and obesity control program among school children in the country following the survey in 12 big cities in 2001. The strategies being employed include creation of awareness among policy makers, administrators, health care personnel and the public sector; meeting with school administrators; development of support tools such as manuals; putting up weight reduction camp prototype; and setting up monitoring and evaluation mechanism. Lunch menus have been developed for the school canteens in project schools; overweight children are asked to submit food record everyday; and physical exercises in school and after school are extensively promoted. Parents are involved as partners for the project through the PTAs. After the program has been set up, there has been a slight improvement in prevalence of overweight in school

children, from 13.6% to 12.3% (N = 1.2,984). The plan is to expand the program to cover all schools in the country and integrate the program with health promotion scheme to make it sustainable.

Dr Kallaya Kijboonchoo, Institute of Nutrition, Mahidol University, Thailand, described the Nutrifit program, a nutrition education and physical fitness training package developed by INMU. The program was tested in two private schools in Bangkok Metropolitan Area and two government provincial schools. A fitness corner with physical fitness equipment and a healthy fitness zone chart display were set up in each school, except that in the intervention schools, INMU staff facilitated the nutrition and physical activity training components every other week for 7 months. No differences in nutritional status and in physical fitness test using Fitnessgram (developed by Cooper Institute for Aerobic Research in the US) were found between the control and intervention groups. Among the lessons learned from the project are the importance of involving the school authorities, peer pressure, and access to a physical fitness corner and equipment.

Dr Ruzita Abdul Talib, Department of Nutrition and Dietetics, Universiti Kabangsaan Malaysia, discussed the impact of a school-based nutrition education program on nutrition knowledge and food habits of Malaysian school children, which is part of the Healthy Lifestyle in Malaysian Children (HELIC) study. The education package consists of five topics focused on healthy food pyramid, fiber and health, healthy menu, food and disease, and healthy lifestyle. The tools used included compact disk, flipchart, food picture card, pamphlet and poster, together with a teacher's manual and student activity book. The project was tested in four secondary schools serving as intervention schools, and four other schools serving as control. In the intervention schools, three to four classes were randomly selected to receive the education lessons for five weeks. Evaluation of the program showed significantly higher scores in nutrition knowledge and eating habits after 6 months of intervention among the students in the intervention schools compared to the control, while no significant differences were found in the students' average weight, height and food intake.

Mrs Anna Jacob of ILSI Southeast Asia Region, Singapore, described the Power Kids Eat Smart™ & Power Kids On the Go™ package that has now been made available to all 210 primary schools in Singapore as a tool for the Trim and Fit Club (TAF) being run by the Singapore schools. The Power Kids Eat Smart™ which is the nutrition module in the package, uses a story format meant to encourage children to adopt healthy eating habits by relaying messages in a fun way, accompanied by activity sheets and goal cards. The Power Kids On the Go™ package provides teachers with an instruction manual and activity cards for warm up and cool down exercises as well as aerobic and game activities. In 2001 when the package was made available to all Singapore schools, the teachers received it very enthusiastically. The post-program survey conducted by ILSI SEAR in 2002 showed mostly positive responses from the teachers and children. At the same time, the survey also showed areas where the program could be improved. Among the challenges facing the program are the high turnover of school staff, the need to retrain teachers and to revitalize the program for ease in implementation, and the need for greater parental involvement.

Dr Visal Kantaranakul of the Board of Rehabilitation Medicine, Ramathibodi Hospital, Thailand, described the results of the pilot implementation of the Powerkids Program in a convent school in Thailand after the translation of the package by Dr Suttilak and further adapted to fit Thai culture and the curriculum with the help of an advisory committee. According to the teachers, the parents have no time to complete the food diaries and physical activity logs, and the program competes for time with other school activities. Before the program is expanded to other schools, there is a need for more support from the Ministry of Education and to further revise the Powerkids package for clearer understanding. The sustainability of the program needs to be planned.

The last of the case studies presented in the workshop was described by Dr Rodolfo F. Florentino of the Philippine Association for the Study of Overweight and Obesity (PASOO). The Whiz Kids Through Fitness project of PASOO patterned after the Powerkids program of Singapore, is a program directed to schoolchildren to promote healthy lifestyle, with emphasis on physical activity and proper diet. The project is being piloted among Grades I to III pupils in one private school in Manila. The program consists of a physical activity component and a nutrition education component that are integrated in the curriculum. The nutrition education component includes ten simple nutrition messages spread throughout the school year, while the physical activity component consists of physical activities and exercises in and outside the classroom. The preliminary evaluation among a random sample of the children showed a decrease in the prevalence of overweight over less than a year's time, from 16.7% to 14.3% using NCHS standards. The greatest challenge of the program is in improving the extent and manner of integrating the Whiz Kids lessons and activities into the busy curriculum of the children. Physical education sessions are irregular, and so are classroom physical exercises. The plan is to expand the program in the pilot school to the higher grades, while promoting the program in other schools, both public and private.

Round Table Discussion

The round table discussion that followed was chaired by Dr. Tee E-Siong, President of the Nutrition Society of Malaysia. The discussion focused on program design, implementation challenges, evaluation, and other issues including research. In designing school-based programs directed towards healthy weight management, the involvement of parents, and even the whole family, should be considered. Aside from parents, teachers are important role models, so that the education of the teachers themselves, not to mention their own health, should also be considered. The program should have clear and specific objectives with defined behavioral goals, taking into account the need for a balance between science and practicality. In the Asian situation

consideration should be given to the presence of both undernourished and overnourished children in the same class. Since school canteens exert a strong influence on children's dietary practice, their policies, content, and procedures should be examined and their operators co-opted into the program. In fact, the whole school environment should be conducive to including wholesome and safe physical activities for the children. Apart from strategies to promote physical activity, strategies to decrease inactivity are also important.

As a whole, the program design should be culturally specific. Thus the program should be adaptable to differences in ethnic groups and environmental change opportunities. Likewise the program should be age-specific (and potentially gender-specific), so that the design of the program would accommodate the needs of the target group. In this regard, concern should also be directed to preschool children as targets of health promotion programs as a means to prevent pediatric overweight. Among the challenges to program implementation, getting the involvement of parents appeared to be the most difficult. Several suggestions were given such as focus group discussions with parents and giving incentives such as free lectures with giveaway materials or behavior tools of interest to them. The parents should see what is in it for them as well as their children, such as improving their own habits, preventing family conflicts around food or activity, and reducing their child's social isolation or teasing experiences related to weight or size. Raising the over-all awareness of the importance of proper food and nutrition and physical activity in families would promote parent involvement.

Integrating the program into the busy school curriculum is another challenge. It was pointed out that having a separate program outside of the school curriculum will not work. This will add extra load to the task of the teacher who is already overburdened with academic tasks. Convincing school authorities to adopt a program in the school to promote the integration on nutrition and physical activity is another challenge. The program will have to be adapted to the school environment. On a higher level, how to put forward a national policy, or even local level policy, on a school-based program for weight management is another big challenge, as it competes with national and subnational priorities. Involving top-level school authorities in orientation programs on the benefits of physical activity and nutrition education in schools could be a start. The issue of sustainability was discussed at length. Again, a national policy expressing the political will to pursue school-based programs for weight management should be sought. Awareness of political and program leaders of the growing problem of obesity in children and its short- and long-term effects including its burden on health care while convincing them on the benefits of a preventive program, has to be promoted. In this regard, the important role of professional organizations concerned with the control and prevention of obesity was pointed out. Continuous monitoring of the problem by such organizations would help influence decision making. On the other hand, revitalization of programs that are already in operation in order to achieve greater effectiveness should be continually pursued. To achieve greater sustainability, involving other health professionals and child care providers in the program should be sought. Appropriate educational aids are important in bringing about greater effectiveness. The tools should be simple, clear, easily implementable, and appropriate to the school and environment. Involvement of the school and the teachers themselves in laying out the content and design of the aids was suggested.

The workshop emphasized the importance of process and impact evaluation in attaining success of school-based programs. Several simple techniques and tools for evaluation were discussed. Qualitative and quantitative evaluation may start from a simple starting point, progressing into more complex matching of goals and objectives with accomplishments related to the intervention. The method of evaluation should be defined ahead of time. The use of REAIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) evaluation model was suggested. In evaluating the program, it is important to seek a balance between what we want to know and what the school wants to know. For example, an evaluation of behavioral change achieved by the program could be an important criterion for success. The workshop suggested important research areas that need to be explored. The appropriate indices and cut-off points for the assessment of overweight and obesity in Asian children still need to be defined. The effect of physical activity on very fit vs unfit children need further investiation, so does the effect of physical activity in toddlers on physical performance and academic achievement in the long term.

As a final note, the workshop suggested closer networking among the countries in the region as a means of knowing more about what is going on in the other countries, such as through an inventory of programs, and sharing of experiences, strategies and approaches that work through follow-up workshops. The workshop ended with a synthesis of the round table discussion by Dr Rodolfo Florentino and the closing remarks by Mrs Yeong Boon Yee.

Future Events

March 10-13, 2005

8th National Rural Health Conference, Alice Springs, NT. Contact: http://www.ruralhealth.org.au, conference@ruralhealth.org.au

September 19-24, 2005

***IUNS 18th International Congress of Nutrition: Nutrition Safari for Innovative Solution*.** Durban, South Africa. The Congress will focus on innovative solutions for global nutrition problems and will aim to build capacity among "young" nutritionists. Contact: http://www.puk.ac.za/iuns, safari@puk.ac.za

October 4-9 2009

19th International Congress of Nutrition, Bangkok, Thailand

Global Nutrition Initiative. Contact: tmscb@mahidol.ac.th; tel/fax: 662-590-4333