

Evaluation of a physical activity promotion program: The example of Agita São Paulo

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Abstract

The evaluation of the Agita São Paulo Program, a multi-leveled and a multi-strategy intervention on promoting physical activity (PA) in a mega-community has shown that: (1) evaluation of the processes and impact has been permanent and essential to the decision-making process; (2) process evaluation included indicators, instruments and evaluation techniques such as questionnaires, meeting and general reports, documents, letters, interviews, database, organization and impact of mega-events, health indexes, investments and costs charts; (3) impact evaluation included individual changes in knowledge, attitudes, recall of the program, and PA levels, as much as the effects on policies, the environment, investment, costs and organization of the target settings of intervention; (4) community-based partners in the evaluation included stakeholders, program coordinators and external agencies.

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1. Introduction

Considering all the scientific evidence available over the last few decades, the positive relationship between physical activity (PA) and health has been clearly established. Epidemiological data show that PA is related to the prevention, control, treatment and rehabilitation of the main non-communicable chronic diseases (NCCD). In Brazil, initial data of the prevalence of sedentarism in the city of São Paulo indicated a prevalence of sedentary behavior of around 60% among men and 80% among women (Rego, Berardo, & Rodrigues, 1990). National data subsequent to the national census of 1996 and 1997 analyzed by Monteiro et al. (2003) showed that merely 13% of the population performed a minimum of 30 min of PA in their free time 1 or more days a week and that only 3.3% met recommendations of 30 min/day a minimum 5 times per week. With these initial data and the high prevalence of NCCD and taking into consideration that cardiovascular diseases are the principal

cause of morbidity and mortality in the state of São Paulo and in Brazil as a whole, the São Paulo State Health Secretariat organized a program of incentives for the practice of PA as a way of maintaining, improving, recovering and achieving an excellent state of health.

The costs of inactivity in the state of São Paulo appear to be high and consistent with the costs of inactivity reported in North America, Europe and Australia. An evaluation of the direct medical costs due to physical inactivity in the state of São Paulo based on public sector hospitalization costs for 10 diseases and conditions related to PA and statewide PA prevalence data suggests that more than 3% of direct medical costs are attributable to physical inactivity (Pratt, Andrade et al., 2006). This compares favorably with estimates in the scientific literature of between 1% and 6% of direct medical costs due to physical inactivity in several developed countries and represents a very large preventable health and economic burden (Andrews, Pratt, Lankenau, Wang, & Neiman, 2004).

Although the concern on the evaluation of the effectiveness in the promotion of health has been the object of recent publications (Salazar, 2004), to our knowledge there

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is little information on the effectiveness of the results or processes of evaluation of community PA programs. Some information in the most recent literature included evaluation of school-based health promotion (Mukoma & Flisher, 2004), interventions to reduce health inequalities (Abbema, Assema, Kok, Leeuw, & Dvries, 2004), and the prevention of smoking (Reinert, Carver, & Range, 2005), but not in relation to strategies for the promotion of PA based in the community. Understanding evaluation as defined by the Organization For Economic Co-Operation And Development (1998) as the objective and systematic assessment of a project, program or policy which is under development or has been completed, its design, implementation and results (Salazar, 2004). Evaluation should thus present information with credibility and be of use when incorporating the lessons learned in the decision-making process. The purpose of this article is to describe the experience of one of the pioneer programs of PA in Latin America in the evaluation strategies of actions for the promotion of PA in the general population of 40 million inhabitants.

The article is organized into six main parts: in the first part there is a brief description of the Agita São Paulo Program; in the second, authors describe all kinds of strategies and means of evaluations used by the program considering the new approach of the ecological model to promote PA. Following that, there is a description of the evaluation of the main mega-events, the use of the qualitative evaluation, and the evaluation of cost effectiveness. In the last two parts there is a list of the main indicators and instruments used by the Program and the lessons learned in the process of evaluation.

2. What is the Agita São Paulo program?

The Program is a multi-level plan that promotes messages about the health benefits of PA and coordinates activities and interventions for broader PA opportunities among more than 40 million inhabitants (in 645 municipalities) of the state of São Paulo, Brazil (Matsudo et al., 2003). The Program was launched in December 1996, by the Physical Fitness Research Center from São Caetano do Sul (Centro de Estudos do Laboratório de Aptidão Física de São Caetano do Sul—CELAFISCS), and the São Paulo State Health Secretariat. The World Health Organization (WHO) has praised it as a model for other developing countries. The main goal of the Program is to change the general population's PA behavior. The Program activities and messages are intended to turn sedentary individuals into somewhat active ones, persons who are not very active into active ones, those who are regularly active into even more active ones, and those who are already very active into individuals able to remain so, at no risk of suffering injury. The main message used by the Program recommended that adults should accumulate at least 30 min of moderate intensity PA per day either done in one session or in multiple sessions lasting at least 10 min each. The needed

energy expenditures can come from routine daily activities such as walking, sweeping the floor, running a vacuum cleaner, mowing the lawn, and washing windows (Blair & Nichaman, 2002). These activities can be performed at home (such as while doing household chores), at the workplace (both while carrying out job duties and traveling to and from work), and during leisure time (doing enjoyable activities) as recommended by the American College of Sports Medicine and the Centers for Disease Control and Prevention—CDC (Pate et al., 1995).

3. Evaluation of PA promotion using the mobile management of ecological model

The ecological model proposed by Sallis and Owen (1997) identifies the main influences in PA as the *Intrapersonal factors* (Demographics, Biological, Cognitive/Affective and Behavioral); *Social Environment factors* (Supportive Behaviors, Social Climate, Cultural, Policies Governing Incentives and Resources for Activity/Inactivity); and *Physical Environment factors*: including both *Natural Environment* (Weather and Geography) and *Constructed Environment* (Information, Urban/Suburban, Architectural, Transport, Entertainment and Recreation). The Agita São Paulo Program has organized its actions of PA promotion and intervention in the community to include mostly of the Intrapersonal, Social and Physical Environment factors. This innovative management style done in a synchronized and synergetic approach is called “Mobile” (see Fig. 1), and is fully described elsewhere (Matsudo, Matsudo et al., 2004; Matsudo, Guedes et al., 2004). In this approach, the multi-leveled components of the ecological model are distributed three-dimensionally in a dynamic balance as in a mobile.

Although desirable, it is not easy to address several components at the same time, and in most of the cases almost impossible. The experience of the Program in operating with Mobile Management was largely based on the use of a partnership strategy which has been used since the program started in 1996; thus, different partner institutions, among the 300 members of the coalition, target one or two components of the model, and the Program central office coordinates the “mobile” approach to best manage the equilibrium of the total intervention. In the next paragraphs, we give some examples (at least one component of each factor) showing how the central coordination of the Program has tried to match partner institutions to balance the different components of the ecological model.

Analyzing the actions developed by partners, over more than 8 years of activities of the Agita São Paulo Program and brought together recently in two publications on the “Best Practices on Physical Activity Promotion” (Programa Agita São Paulo 2004, 2005), we summarize the principal strategies for the promotion of PA used by the Program and some of the evaluation mechanisms which have been proposed and executed as a way of accompanying the evaluation of the

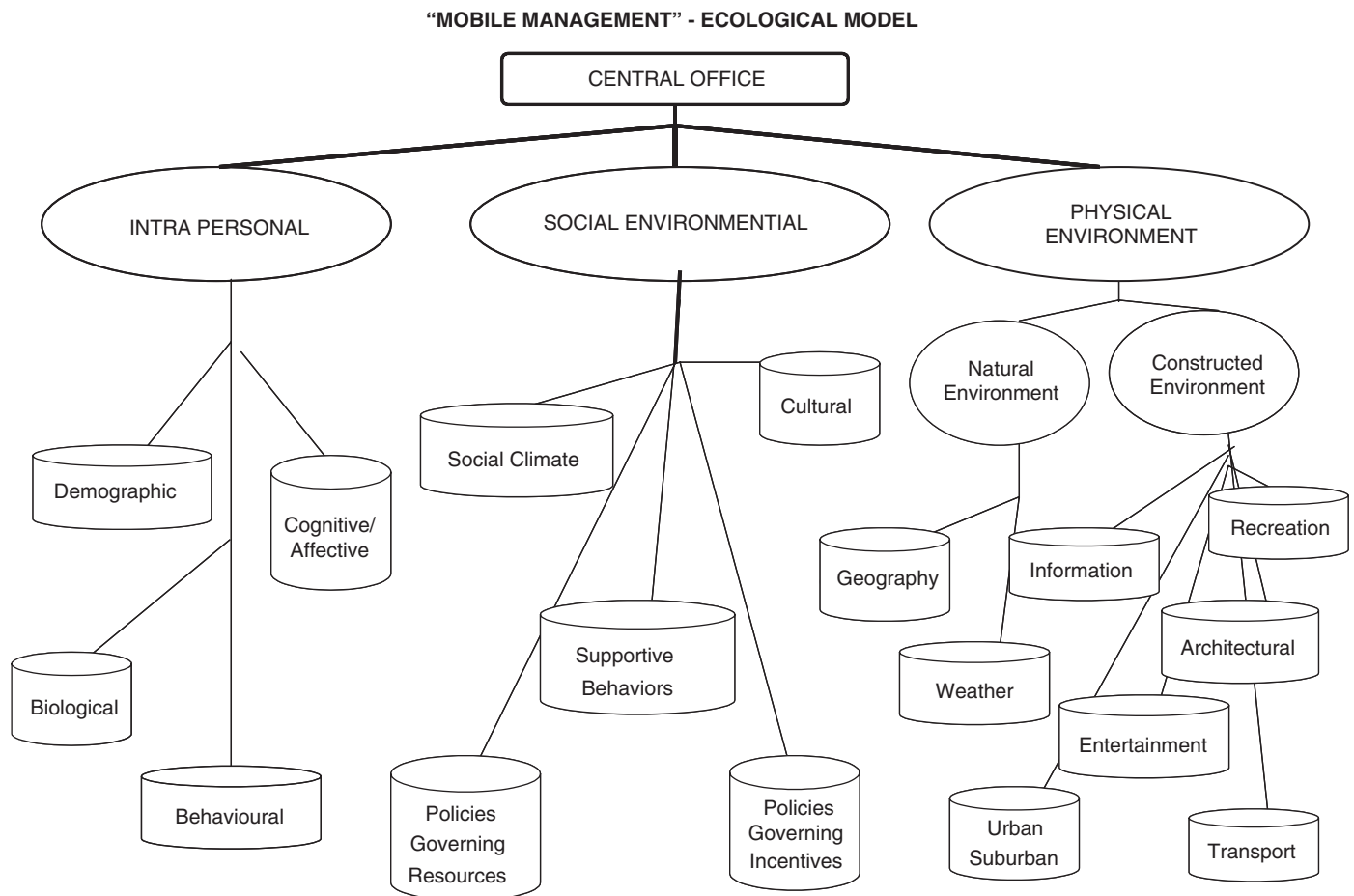


Fig. 1. The “Mobile Management” of the Ecological Model (Matsudo, Guedes et al., 2004).

Program’s impact and processes. A complete description of the intervention strategies used by the Program with the mobile management of the ecological model of PA promotion and the actions realized by different players in the promotion of PA were recently published by the program coordinators (Matsudo, Guedes et al., 2004; Matsudo, Matsudo, Andrade et al., 2002; Matsudo, Matsudo, Araújo et al., 2002; Programa Agita São Paulo, 2004).

The main evaluation strategies that have been used in accordance with the mobile management of the ecological model are presented in Table 1, describing main interventions and their respective forms of evaluation, as used by the Agita São Paulo Program in the promotion of PA.

4. Evaluation of mega-events for PA promotion in the community

In the context of Agita São Paulo, a mega-event is operationally described as one that is intended to reach the majority of the cities in the state of São Paulo and/or involve at least a million people. The two most important mega-events that Agita São Paulo Program yearly organizes to mobilize and sensitize the community on the importance of PA for health are:

4.1. World physical activity day—Agita Mundo

Since 2002 around 6 April, a mega-walk is organized in the city of São Paulo (with more than 15 million inhabitants) and other celebrations are encouraged in the 645 municipalities of the state. The evaluation of Agita Mundo Day in the state includes: (1) the number of partners and institutions that organize events on this day (almost over 300 per year in the State); (2) the number of events organized in the state (over 800 per year); (3) the number of people involved in the walking parade in São Paulo City (focus of the celebration) and other cities (in São Paulo city parade over 10,000 people take part in the 3 km trail through the main avenues of the city), and (4) the impact on media (TV, radio, newspapers and magazines). Media impact evaluation of 2002 event has shown that 80 articles were published in local, national and even international magazines and newspapers, some of them in the front page. Radio coverages comprised 3 h 23 min, in 54 programs from 13 different radio stations. Nine broadcasting TV stations have dedicated 52 min; 40 s in 22 programs (Oliveira et al., 2002). The estimated cost for material distribution concerning events around the State and the organization of the walking parade in the city is US\$ 72,000 per year.

Table 1

Forms of intervention and evaluation of physical activity promotion in the community using the mobile management of the ecological model proposed by the Agita São Paulo Program

| Factors | Intervention | Evaluation |
|---------------------------------|--|---|
| <i>I. Intrapersonal factors</i> | | |
| Demographic factors | PA promotion directed at different ages and socioeconomic groups, with messages and actions adapted to these conditions. | <p><i>Indicator/variable</i></p> <p>Diagnostic surveys of the level of PA, barriers and knowledge regarding PA and health, in different ages (children, workers and elderly), socioeconomic and cultural groups.</p> <p><i>Instrument</i></p> <p>Adapted, tested and standardized questionnaires from available international proposals, applied in individual form, in specific groups and in the form of randomized stratified home interviews of the general population.</p> |
| Biological factors | <p>Adaptation of the PA messages and materials according to gender, emphasizing different types of benefits and ways of maintaining an active lifestyle for men and women.</p> <p>The program also considers a specific message and recommendations for special groups like handicapped, and people with non-communicable chronic diseases like diabetes, hypertension, obesity and cardiovascular diseases.</p> | <p><i>Indicator/variable</i></p> <p>Comparative diagnostic surveys of the level of PA, barriers and knowledge regarding PA and health between men and women.</p> <p>Comparison of the adherence indices and PA levels between men and women.</p> <p>Identification of the barriers and motivation for men and women which facilitate the implantation of specific intervention strategies according to gender.</p> <p><i>Instrument</i></p> <p>Questionnaires on knowledge, motivation and barriers, applied in individual form, in specific groups and/or in randomized stratified home interviews of the general population.</p> <p>International PA questionnaire (IPAQ) short version applied in the form of an interview or self-administered in population studies.</p> <p>The use of pedometers and movement sensors as a form of complementary diagnosis of PA levels in specific intervention groups.</p> |
| Cognitive/affective factors | Realization of activities (talks, lectures, capacity building sessions, courses, informative material in printed form and on the homepage) to increase the level of knowledge regarding the benefits of a physically active life and the level of PA of the general population, as well as to establish affective components to stimulate the adoption of an active lifestyle. | <p><i>Indicator/variable</i></p> <p>Diagnostics which allow the identification of:</p> <ol style="list-style-type: none"> the physical, social and psychological benefits of PA for perceived health by the general population; the level of knowledge regarding the minimum PA necessary to obtain benefits for general health; knowledge of the forms and settings in which people can become more physically active; motivation and the existent barriers for the practice of PA; the number of talks, lectures, workshops, courses and participations in events realized, including information and the Program's message regarding PA. <p><i>Instrument</i></p> <p>Self-administered questionnaire.</p> <p>Certificates or documents certifying participation and the organization of events.</p> <p>Qualitative evaluation of specific intervention groups.</p> <p>Structured and semi-structured interviews realized in mega-intervention events.</p> <p>These instruments are used to being applied in pre- and post-intervention conditions (e.g.: before and after a talk, course or motivational workshop, or at the start of a specific PA intervention like walking, gymnastics, community groups, etc.). The identification of barriers and motivation are used as a way to establish priorities in intervention actions and specific strategies according to the results found.</p> |
| Behavioral factors | PA stimulus with specific messages and tips for behavioral changes for different stages of behavior in relation to PA. Using the "one step ahead model", the Agita São Paulo Program encourages actions of change that respect the behavior stage and proposes gradual changes which guarantees that the sedentary individual becomes at least irregularly active and goes on to become at least regularly active, while those who are already regularly active change to becoming very active and these | <p><i>Indicator/variable</i></p> <p>Identify changes in behavior in relation to the level of PA practice. Analyze the percentage of individuals, pre- and post-intervention, in the different behavioral stages.</p> <p>Identify the perceptions and sentiments related to actions already performed or yet to be implemented in specific environments: the positive and negative points of these actions; the actions and the form of disseminating a PA with the intervention location; the changes occurring in the life of the participants after the onset of their participation in the PA group; the adherence to the</p> |

Table 1 (continued)

| Factors | Intervention | Evaluation |
|---------------------------------------|--|---|
| | latter individuals manage to maintain this level without health risks. | activities offered in the respective intervention locations; the behavioral factors which facilitate and limit adhesion to the practice of PA. <i>Instrument</i> Standardized questionnaires and interviews. |
| <i>II. Social environment factors</i> | | |
| Behavioral support | Support approaches regarding the encouragement of the practice of PA through speeches and active incentives on the part of the directors and management of work places, institutions, government entities, or on the part of school directors and teachers and health professionals (especially doctors) in hospitals, medical offices and community health centers. | <i>Indicator/variable</i> (a) number of messages and actions of encouragement regarding the adoption of PA practices sent; (b) quantity and quality of support material produced for encouragement; (c) number of events specifically organized or associated with the theme of PA. <i>Instrument</i> Registration of the actions of partner institutions. Documents elaborated and divulged. |
| Social climate | One of the most relevant approaches of the Program in the creation of a “social climate” favorable to PA promotion in the community, is called the “two hat approach” or an “n hats approach”. This is a strategy created by the Program seeking to overcome the heterogeneity and instability of public structures subject to more abrupt political changes in developing countries. The formation of a Scientific Committee which guarantees the scientific basis of quality in the intervention and an Executive Committee which unites the representatives of government, private and social spheres for the discussion of permanent intervention actions and evaluation mechanisms. | <i>Indicator/variable</i> (a) The support of: (i) public powers (federal or state government, city hall, state and municipal health, education and sports secretaries and other sectors); (ii) private sector (business community) and commercial and industrial social service entities; (iii) civil society (NGOs, social clubs, scientific societies, sports clubs, community organizations, etc.); (b) The number of partners from different sectors at the launch and during the development of the intervention program who are part of the Executive Committee; (c) The total number of monthly/annual meetings of the Executive and Scientific Committees of the program; (d) Quantification and description of the current actions, participation in mega events and permanent actions executed by program partners annually. <i>Instrument</i> Acts of Executive and Scientific Committee meetings. Letters signed by partners of the program. Program monthly newsletter (<i>Agita News</i>). Documents (letters, official letters and documents). Reports and annual calendars of activities realized by partners. Registration of the number of scientific studies. |
| Culture | Municipalities have adapted the program mascot to local culture by developing icons or personalities which are easily identified and accepted by the community. Contests for the creation of municipal, regional or institutional logos, slogans and mascots were developed. Incentives for the formation of local executive committees in municipalities to develop local networks coordinated by community leaders for the promotion of PA in the community well-being. | <i>Indicator/variable</i> Number of adaptations made to the program logo and mascot. Number of executive committees created locally for the creation of municipal networks of PA. Number of meetings, encounters and partners present in municipal executive committees. Description and quantification of specific culturally adapted activities. <i>Instrument</i> Acts of municipal meetings and statements. Registration of existing logos and mascots. Registration of actions realized in the local culture. |
| Incentive policies | The establishment of policies, norms, statutes and laws which provide incentive and establish the practice of encouragement for PA (internal norms and standards for the use of stairways; documents which include contents regarding PA in human resource training, in reports and meetings; rules or provisions which offer employees 10, 15 or 30 min of work time for PA practices). The creation of commissions in schools, businesses, universities, communities for the insertion of PA as a priority action; discounts in monthly payments for medical insurance or special rates for non sedentary individuals or those who achieved goals of behavioral change. | <i>Indicator/variable</i> (a) Number of existent laws, norms, provisions, rules among partners of the spheres of government, private and civil society who encourage the practice of PA; (b) Number of commissions established during the development of the program; (c) Number of partners with incentives for functionaries or members of the community who reach PA goals; (d) Number of prizes, recognitions and other incentives given throughout the year. <i>Instrument</i> Documents registering the decisions of incentives. Acts and/or documents for the creation of groups or commissions. Registration of the relation of partners with incentive and recognition programs. |

Table 1 (continued)

| Factors | Intervention | Evaluation |
|--|--|---|
| Investment policies | <p>Definition of human, material, structural, logistical and financial resources for the actions of PA promotion in partners of the program.</p> <p>Use of unpaid media to divulge the actions and results of the program.</p> | <p><i>Indicator/variable</i></p> <p>Investment in the implantation and continuity of actions.</p> <p>Complimentary financial support coming from other sources and partnerships.</p> <p>Costs economized by the program with the use of unpaid media.</p> <p><i>Instrument</i></p> <p>Budgets and accounting.</p> |
| <i>III. Physical environment factors</i> | | |
| <i>A. Natural environment</i> | | |
| Climate | Adapt and establish different forms of intervention according to the climate and seasons. Establish a calendar of events for the practice of PA, associated with dates in the year, like for example, carnival, summer, winter, holidays, special festivals, etc. | <p><i>Indicator/variable</i></p> <p>Number of events organized at specific times of the year, attending to climate and temperature changes of the natural environment.</p> <p>Quantity of material produced specific to these times as a way of divulging the message (posters, folders, leaflets, flyers, banners).</p> <p>Changes in the level of PA and adherence to the intervention programs according to the time of year and the seasons.</p> <p><i>Instrument</i></p> <p>Registration of the production of materials according to the month of the year.</p> <p>Specific data analysis of the level of PA by questionnaires at different times throughout the year.</p> |
| Geography | Establish actions and practices that respect and utilize local geography: beaches, mountains (trails), swimming and cycling events, events in indoor locations. | <p><i>Indicator/variable</i></p> <p>Number of specific events organized according to local geography</p> <p>Determine the level of PA in the general population in coastal, rural, urban, metropolitan and interior regions.</p> <p><i>Instrument</i></p> <p>Annual registration of events.</p> |
| <i>B. Built environment</i> | | |
| Architecture | The establishment of physical spaces which stimulate and facilitate the practice of daily PA, such as: the construction of sidewalks, tracks, cycle/walk/running pathways, the lowering of sidewalks, the construction/revitalization of wider and more regular sidewalks, sidewalk regularity close to pedestrian walkways/bridges, the removal of obstacles on sidewalks, sidewalks and walking/running tracks with shadow and hydration points, green areas and leisure spaces for the practice of sports, schools open on the weekend, safety in neighborhood streets and squares, parks and squares in permanent maintenance and suitability to encourage regular adoption of PA practices. | <p><i>Indicator/variable</i></p> <p>Number of constructed or defined walking/running tracks.</p> <p>Number of physical spaces implanted specifically for the practice of PA.</p> <p>Quantity of bicycle parking/storage spaces constructed.</p> <p>Number of schools open on the weekend.</p> <p>Number or kilometers/miles of sidewalk, improved streets to encourage the practice of PA.</p> <p>Number of temporary or permanent cycle/walk/running pathways constructed or opened.</p> <p>Number of streets or spaces for leisure created.</p> <p>Safety measures taken to reduce violence in PA spaces.</p> <p><i>Instrument</i></p> <p>Registration of documents, photos which allow for the evaluation of changes in the built environment.</p> |
| Transport | Stimulate the use of more active forms of transport, like for example, facilitating the storage/parking of bicycles close to bus/train/metro stations or at the entrances of universities, work place, other institutions and enterprises, and the facilitation of transport for access to areas/locations appropriate for the practice of PA. Private and public incentive policies for mass active transport with the use of bicycles, or walks to go to and from the workplace, getting off public transport one stop before or after a determined destination and car parking in more distant locations. | <p><i>Indicator/variable</i></p> <p>Number and quantity of kilometers/miles of permanent cycle/walk/running pathways for the mobilization of cities.</p> <p>Number of train, metro, bus stations and public places with the possibility of parking/storing a bicycle.</p> <p>Number of partners and cities, municipalities or neighborhoods which create or adapt public spaces to PA practice.</p> <p><i>Instrument</i></p> <p>Registration of documents with photos of the constructions/adaptations realized.</p> |
| Entertainment | The establishment of activities and leisure and recreation areas/locations which stimulate the practice of PA in different environments: schools businesses, workplaces, community health centers, universities, neighborhoods. The creation of specific PA groups for diverse social groups: children, elderly, pregnant, adolescents, adults, women, men. | <p><i>Indicator/variable</i></p> <p>Number and quality of areas/locations available for PA practice.</p> <p>Number of train, metro, bus stations and public places with the possibility of parking/storing a bicycle.</p> <p><i>Instrument</i></p> <p>Registration of documents with photos of the constructions/adaptations realized.</p> |

4.2. Active community day—“Agita Galera”

Since 1997, on the last Friday of August, the program mobilizes the 6000 public schools of São Paulo State, 250,000 school teachers, comprising around 6 million students, 18,000 manuals and posters and 6,000,000 flyers, are printed and distributed to all school system yearly. As a consequence, about 7,400,000 cm² in newspapers media coverage, 15 min of TV and radio programs are obtained in each edition. Agita Galera is used to stimulate permanent actions in schools, such as developing more activity programs, improving physical education, adding activity-related educational materials to the library, and stimulating student peer groups to enhance PA at school. At school level, attention was paid to the importance of improving the real time of involvement in PA during PE classes, in other disciplines and outside school. When discussing the necessity for improving PA in the general population, adolescents became a high-priority target group. Media-community intervention included media advice about the benefits of an active life-style; through TV and radio programs, newspaper and magazine interviews, and mega-events, such as the Active Community Day. Each school receives a questionnaire, available on the internet, including questions such as

1. How has Agita Galera been disseminated in 6000 schools and 645 cities?
2. How many permanent actions were developed after the event?
3. How many people are involved in these actions?

4. What partners are involved in the event?
5. What activities have these partners developed?

Some of these results are summarized in Table 2.

The dissemination of Agita Galera concepts was based upon the State Educational Authority Network, by means of educational materials, teleconferences, and regional meetings. The estimated cost of this mega-event is around USD\$ 200,000 per year. In 2004, 311 schools filled out the questionnaire and among the principal results identified were: (a) 79.7% of schools included the program message during the event; (b) 96.8% of schools included the PA theme on pedagogic project; (c) 56.6% of the schools received community support; (d) 50.8% implemented permanent actions for promoting PA after Agita Galera celebration; (e) the majority 96.8% of the activities were directly linked to the schools' pedagogic projects; (f) 87.1% faced no obstacles in the realization of the event; and (g) 34.7% reported publications on the event in local media. The latest data collected during Agita Galera 2005 celebration (unpublished data), comprising 621 subjects from São Paulo City, showed that public school students presented higher indices of positive recall for program brand (78.7% × 42.8%) and program purpose (62.0% × 11.6%) than their colleagues from private schools. The same trend was observed to the components of Agita São Paulo recommendation to PA where public school students presented better results than the ones from private schools in regards to: frequency (74.2% × 30.5%), duration (79.6% × 31.8%), intensity (80.2% × 31.2%) and

Table 2

Agita Galera evaluation—summary of the indicators and actions performed each year for evaluating the process and impact of this community-based PA intervention at schools

| Evaluation questions | Indicators | Data sources | Performance indicators |
|---|--|---|---|
| 1. How has Agita Galera been disseminated in 6000 schools and 645 cities? | Number of schools, teachers and students | School reports | About 6000 schools, 250,000 teachers and 6,000,000 students |
| | Number of material produced | CELAFISCS | 18,000 manuals and posters |
| | Number of teachers trained | CELAFISCS | 6,000,000 flyers |
| 2. How many permanent actions were developed after the event? | Number of media publications | Clipping service | About 150,000 teachers |
| | | | 7,444,000 cm ² in newspapers media coverage |
| 3. How many people are involved in these actions? | Number of schools, teachers, students, members of community and descriptions of the activity Reports | Sent by schools to the year prize | 15 min of TV and radio programs |
| | Number of people | | Around 25 permanents actions |
| 4. What partners are involved in the event? | | Reports sent by partners to the year prize and the Agita News | Around 10,000,000 people directly involved |
| | Number of partners of the Agita São Paulo | Reports sent by partners to the year prize and the Agita News | Around 300 partners |
| 5. What activities have these partners developed? | Number and descriptions of the activity Reports | Reports sent by partners to the 2003 prize and the Agita News | Sports, PA in the work place, Walking |

way ($54.4\% \times 21.2\%$). They were also less insufficiently active (56%) than colleagues from private school (68%).

Only in un-paid TV covertures, more than 300 min per year were comprised corresponding to a cost saving of 12 million dollars. It probably explains the high indices of positive recall for the program brand ($>70\%$) and program purpose ($>35\%$) in Sao Paulo metropolitan area (Isto é Agita Sao Paulo, 2002).

5. Qualitative evaluation

Qualitative evaluation has played an important part in the evaluation of the processes of the Program. In 2000, an advisor from the Pan American Health Organization (PAHO) realized qualitative evaluation with primary and secondary sources linked to the Agita São Paulo Program and its participating organizations (partners). Techniques of observation, literature reviews, key interviews and focal groups in the city of São Paulo were employed, with the objective of establishing the strengths and weaknesses of the partnerships developed by the Program and a discussion in which the same could serve as models of similar collaboration strategies in Latin America. The principal findings of this qualitative evaluation resulted in the publication of a Manual called “A Multi-sectoral Coalition in Health” by the PAHO, as a way of encouraging the implantation of similar programs in Latin America and the Caribbean.

6. Evaluation of cost effectiveness

Evidence on program effectiveness alone is insufficient to guide public health policy and programs. Public health leaders must allocate scarce resources to address a wide range of competing public health problems. Particularly in developing countries such as Brazil faced with a double burden of infectious and chronic diseases and limited budgets reallocating resources to new problems such as physical inactivity may be difficult. Cost effectiveness analyses (CEA) can contribute important additional information to aid in making these decisions. In an analysis supported by the World Bank, CDC and CELAFISCS, a model was developed to assess the cost effectiveness of the Agita São Paulo campaign components targeting adults in São Paulo State. The model is a decision analysis framework from a societal perspective incorporating multiple data inputs including program costs of all elements of Agita São Paulo, statewide PA surveys carried out from 1999 to 2003, medical costs from São Paulo and Brazilian national data sets, and relative risks and incidence of disease from the international scientific literature. The model was adapted from a similar CEA model of PA interventions in the United States.

In both models, results are reported as cost utility ratios: Dollars (\$) or Reals (R\$)/Quality Adjusted Life Year (QALY) gained. The intervention cost of the Agita São Paulo Program was found to be R\$ 640 per person per year

(around \$300) including the costs to implement the program, indirect costs incurred by program participants and time costs. The increase in PA resulting from implementation of the community campaign targeting adults was 132 MET-min per week per person for each year of program delivery. The resulting cost effectiveness ratio for the Agita São Paulo community campaign was cost saving ($<0\$/QALY$). In comparison, two comprehensive community campaigns evaluated in the United States had cost effectiveness ratios between \$14,000 and \$69,000/QALY. Interventions with cost effectiveness ratios less than \$50,000/QALY are considered to be especially good public health investments and many widely accepted public health interventions have cost effectiveness ratios up to \$200,000/QALY (Pratt, Andrade et al., 2006; Pratt, Roux et al., 2006). Thus, comprehensive community campaigns to promote PA appear to be generally cost effective and may be especially well suited for large cities in developing countries such as São Paulo. A combination of a proven intervention strategy adapted to the culture and conditions of São Paulo, economies of scale, creative management, extensive use of partnerships and volunteer networks, and the relatively low cost of materials and labor in Brazil may explain the cost effectiveness of Agita.

7. Indicators and instruments of evaluation used by the Agita São Paulo program in the promotion of PA

The program has used several previously cited evaluation mechanisms to evaluate the results of the impact of actions and interventions realized and the processes executed for the realization of the same. Summarizing these intervention strategies with regard to time, they can be divided as follows:

Short-term evaluation (immediate–weeks): e.g.: changes in understanding before and after talks, lectures and workshops, the number of participants in an event, the number of appearances in written, spoken and televised media, the participation in events, congresses and meetings, the launching of new PA promotion programs, etc.

Medium-term evaluation (months–years): e.g.: results in the change of behavioral stage in relation to PA, the level of PA and physical fitness level, the level of knowledge (recall) of the Program’s name and message.

Long-term evaluation (more than 5–10 years): e.g.: changes in PA levels and other health indicators: morbidity and mortality rates, death expectancy, medical costs associated with non-transmissible chronic diseases, further-more cost effectiveness; thus we can resume and highlight some of the principal indicators and instruments used by the Agita São Paulo Program in the evaluation of the process and impact of the promotion of PA and which can be applied to in other communities with intervention programs of this type:

1. Regular evaluation of the total number and actions of partners as well as of new partners.

2. Evaluation of the number of activities and events annually organized directly by the Program and by its partners.
3. The number of participations and presentations of the Program in national and international scientific events.
4. The number of abstracts of scientific studies with results obtained by the Program and/or reports of interventions presented and published in national and international scientific events.
5. The number of scientific articles published with the results of interventions and processes of the Program in national and international scientific periodicals.
6. The number of publications of the message, objectives or actions of the Program in the media: newspapers, weekly or monthly magazines, TV programs, radio and internet.
7. The number of publications of the message, objectives or actions of the Program in flyers, newspapers, sites and institutional material of partner or non-partner entities of the Program.
8. The quantity of educative and promotional material produced annually by the Program.
9. Evaluation of the level of knowledge about PA and health, barriers and motivation regarding the practice of PA and the level of PA in the general population and of specific groups attended by the Program.
10. Evaluation of the economic costs of diseases and conditions associated with the lack of regular PA in the intervention region or in specific locations (worksites, enterprises, insurance companies, hospitals).
11. Evaluation of the economic impact (cost effectiveness relationship) of the intervention of PA promotion in town halls, municipalities, workplaces, health systems, municipal and state secretaries.
12. The number of local municipal, state, national and international programs which appear after the implantation of the Agita São Paulo Program, with and without its direct advisory.
13. The number of conferences, meetings and committees at regional, national and international level in which the Program participates annually, and manifestos or declarations that the Program helped elaborate.
14. The number of physical alterations and constructions in institutional and community environments for the incentive of the practice of PA.
15. Evaluation of the PA level of the population as well as Program name and message recall. Every year (or every other year), the Program performed a diagnostic survey in the community, analyzing distinct regions of the state (capital, coast, interior, rural area) and in accordance with gender, age, socioeconomic and education levels using randomized stratified house to house interviews to determine the population's PA level (using IPAQ questionnaire) besides the level of understanding regarding the name and message of the Agita São Paulo Program. Results are summarized in Table 3.
16. Evaluation in specific intervention locations like businesses/places of work: evaluation of employee indicators regarding: PA level; Behavioral stage; Health indicators (weight, body mass index, body composition, lipid profile, lesion index, stress, well-being, among others); Indicators collected during periodic medical exams; Medical consultancy frequency; Absenteeism; Medical costs; Evaluation of specific events (adhesion rate, material used, team involved); Evaluation of institutional image.
17. Strategic planning: the proposal of the Program, within a 2-year period, is to realize strategic planning with the aim of organizing future actions and determine, based on the evaluation of partners, stakeholders and program coordinators, future strategies of intervention and evaluation of the Program. At the last planning meeting realized by the Program, evaluation of the results of intervention was chosen as a priority action for the next 2 years.
18. Database: to attend the needs of partners, stakeholders and program coordinators and facilitate the registration of actions, processes and results in the evaluation of the Program, an internet accessible database was elaborated (using the Program's own site), for the registration of these activities. The database will

Table 3

Evaluation of the Agita São Paulo Program impact on physical activity level (inactive, irregularly active and active/very active) as well as on the name and message recall of the Program in São Paulo Metropolitan region and São Paulo State from 1999 to 2004

| Evaluation | Physical activity level (%) | | | Recall of the program (%) | |
|----------------|-----------------------------|-------------|--------|---------------------------|---------|
| | Inactive | Irregularly | Active | Name | Message |
| Metropolitan | | | | | |
| 1999 (n: 641) | 14.9 | 30.3 | 54.8 | 53.4 | 31.0 |
| 2000 (n: 645) | 17.2 | 36.6 | 45.9 | 55.7 | 37.8 |
| 2002 (n: 627) | 15.5 | 30.3 | 54.3 | 61.1 | 35.5 |
| 2003 (n: 662) | 14.4 | 25.2 | 60.4 | 66.0 | 33.9 |
| 2004 (n: 651) | 11.2 | 27.0 | 61.8 | 61.4 | 22.5 |
| SP state | | | | | |
| 2002 (n: 2001) | 9 | 37.0 | 54.0 | 37.3 | 24.0 |
| 2003 (n: 2000) | 4 | 32.0 | 64.0 | 39.1 | 16.9 |

facilitate the possibility of accompanying the activities of the Program and its partners, as well as analysis of the results and the interaction of variables.

The evaluation process of the Agita São Paulo Program in terms of PA level and name and message recall has been done since 1999; a baseline data of sedentarism in the state of São Paulo was previously reported in 1990 by other group (Rego et al., 1990). Since 1999 the program has tried to do a yearly survey in a representative sample of the State (estimated in around 2000 people) and in the Metropolitan region of São Paulo city (estimated in 650 people). This is a cross-sectional and ongoing evaluation which magnitude cost represents around 15% of the general budget of the Program. The evaluation survey has been performed by a specialized agency in population surveys. According to those data considering the baseline in 1990 and data collected through 1999–2004, the changeover time has shown an increase in the percentage of people that reported to know the name and message of the Program, as well as an increase in the number of regular active people and a decrease in the percentage of sedentary people (see Table 3).

8. Lessons learned

If promoting PA in a mega-population is a serious challenge, evaluating it is even more complex, particularly in societies where the culture of process and impact evaluation is not traditionally strong.

The most important challenge we have faced is to identify indicators and tools for permanent evaluation for many different kinds of interventions, activities and strategies used to promote PA.

The main barrier faced for the managers of the Program has been the difficulty in convincing and including the evaluation process systematically in the actions and activities developed by the partners of the Program; Besides that, it has been difficult to show that evaluation and research are different and that it is possible to use accessible instruments to measure the process and the impact of the actions to promote PA.

The high cost of the surveys to evaluate the impact of the Program in changing the PA level and the recall of the name and message of the Program. It is also difficult to maintain a prospective evaluation of actions in the same group of people.

The lack of inclusion of evaluation in the strategic planning of PA interventions of Agita São Paulo partners makes the implementation of the evaluation process difficult.

On the other hand, the experience of coordinating Agita São Paulo afforded many lessons, some of which we would like to share and summarize:

The evaluation component of Agita São Paulo is based on a strategy which involves the efforts of measuring quantitative and qualitative indicators, in the population as

a whole, in specific populations, and in the diverse actions developed by partner institutions in the sphere of the factors related to the ecological model of PA promotion.

The monthly Executive Board meetings allow for regular presentation of the principal actions of each partner institution, serving as an important mean in the permanent dissemination of concepts of process, results and impact evaluation. The presentation of the best and most recent scientific articles as the first item of that meeting, called “Agita Comciência”—“Agitate With-Science”, a pun—greatly contributes to the actualization and reinforcement of the evaluation techniques.

The monthly newsletter *Agita News*, released at the Executive Board meeting and disseminated through internet, emphasizes the best action indicators of partner institutions, serving as well as a reference source for evaluations.

Quantitative and qualitative action has been documented not only with scientific publications in peer-review journals (Matsudo, Guedes et al., 2004; Matsudo, Matsudo et al., 2004; Matsudo, Matsudo, Andrade et al., 2002; Matsudo, Matsudo, Araújo et al., 2002), but also in the form of Manuals (Secretaria de Estado da Saúde-Programa Agita São Paulo, 2002; Secretaria de Saúde de São Paulo, 1998) and in the synthesis of the actions of partner institutions included in both versions of Best Practices in Physical Activity Promotion (Programa Agita São Paulo, 2004, 2005).

As a result of an International Evaluation Course realized in Rio de Janeiro in 2003, a *Manifesto For Physical Activity Evaluation* was published (Schmid, Pratt, Buchner, & Neiman, 2004) and a new version of the CDC Evaluation Handbook (US Department of Health and Human Services, 2002), which is a practical guide for planning and evaluating community-based PA programs (which is about to be published in the United States).

The evaluation of Agita São Paulo has shown that it is possible to evaluate the process and the impact of all kinds of strategies used as a mean to increase the PA level of the population. The planning of this evaluation is also feasible and easy to be implemented when included in the strategic planning and when a specific budget is reserved for this purpose. Partners and stakeholders must be involved in the evaluation process. The evaluation has to be faced for those involved as an essential tool already included in many of the PA promotion actions, aiming not only evaluating the process but also providing a feedback for the intervention process improvement.

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