

Al ritmo de las Comunidades: A natural experiment of the RecreoVía program of Bogotá

Introduction

Many studies had showed the multiple benefits of physical activity (PA) in a regular basis affected physical and mental health in a positive way (Warburton, 2006), meaning the reduction of the risk of suffering different chronic diseases that cause the death of nearly 38 million people each year, especially in countries with low or medium income (Bauman et al., 2012; OMS, 2002, 2015); Nevertheless, it is known that physical inactivity (PI) represents the 9% of all premature deaths and implies the 6% - 10% of the charge of the four, more common, non-transmissible diseases (Diabetes type 2, coronary disease, breast cancer, and colon cancer) (Lee et al., 2012a).

60% of the global adult population and the 46,5% of the population of Colombia is inactive, (ICBF, 2010; OMS, 2015) (ICBF, 2010) (In Colombia only the 19,9% of adults reach the recommendations of PA in their free time);). That implies a problem of public health, given that inactivity contributes to rising of chances of suffering a NCD and their potential negative consequences. (González, 2014)

The increase of NCDs and the inadequate levels of PA represent a thread to the human and economic development of the countries (Alwan, 2010); The disability-adjusted life year (DALY) lost, the expenses in direct medical costs, (The World Bank, 2011) and premature death (Abegunde & Stanciole, 2006), are rising each time more affecting the familiar expenses for health care attention (That fosters the rising of the levels of poverty, especially in low income countries) (OMS, 2015) and the costs of health care systems. By 2015, according to a projection made by Abegunde in 2005, it was expected an increase of 3 to 7 times the expenses in health due to the NCDs in the studied countries, (UK, China, USA) (Abegunde & Stanciole, 2006); in Latin America and the Caribbean (Cuba excluded), The cost of only the treatment of cardiovascular diseases was of US\$10 thousand millions, and the total cost in productivity was about US\$ 19 thousand

millions. (Bloom et al., 2012). The lost in Colombia due to NCDs is of approximately of US\$500 billion per year, minimizing the progress in the accomplishment of the Objectives of Development of the Millennium(OMS, 2015).

In the United States, the financial charge associated to inadequate levels of PA in 2006 to 2011 was the 11% of the whole expense in health. In Canada, Ireland, and other countries, it was estimated the cost attributable to PI . In this countries, the cost of PI is 1.2% to 2.5% of the total expenses in health (Katzmarzyk, 2011). This expenses could be potentially reduced impacting positively the global health by increasing the levels of PA described in different guidelines, according to the goals of Healthy People of 202(Lee et al., 2012b) (Carlson,2014).

In order to increase the levels of PA, it has been planned some strategies focused in population in order to reduce PI, given that some interventions foster the reduction of sedentary behavior through the promotion of PA that could impact in the long term the people's health(Mansoubi, 2014). But, what's the cost of this interventions? How much the health system could save if these programs are implemented? How much should a country invest in order to improve this problematic? According to the OMS, the cost of this interventions is of \$US2 billions per year (Approximately US\$0,40 per people) Besides, for each dollar invested in health promotion plans including PA, the health expenses are diminished in \$US3,2 dollars.(Cecchini et al., 2010).

But, so that interventions be really effective in the promotion of PA, it is necessary to have in mind the multi-sectionalism and the environment in which they are developed; that includes proximity, mixed use of the land, pedestrian connectivity, aesthetics, traffic and security. This is correlated positively with the execution of PA. (Bauman et al., 2012). In this context, the local acces to urban parks has an important role, and the creation of built environments that boosts PA, is considered a sustainable strategy to promote that people could be physically active. (Fermino, 2015; McCormack,2010; Parra et al., 2010)

Unfortunately, the challenge of the increased urbanization of Latin America, the most urbanized of the World, indicates that 81% of the population lives in urban areas. This is a problem in Latin America because the rate of green cities, the indicator of available green areas in square meters per inhabitant, is in average under the minimum requirements established by the United Nations (UN) and the OMS who determinates at least 16 and 9 m² of green areas per inhabitant.

Only in the City of Bogota, there are 6.3 m² per habitant, and in the most disadvantaged neighborhoods this amount is even lower (2 m² per habitant) despite the 4890 parks(DADEF, 2013). This problematic challenges us to boost and to use adequately this spots in order to promote physical activity and recreation in our cities.

In this aspect, the PA programs in communitarian spots like *Recreovía*, *Academia da cidade*, and *CuritibaActiva*, had been identified like promising strategies which shows a noticeable augmentation in PA levels(Hoehner et al., 2008). This transdisciplinary studies, the most were developed in Brazil, supports this information. However, it is necessary to obtain detailed information, with prospective studies, in which could be determined the impact of this programs in PA levels and the use of parks. In order to do this, it is required to make some experimental studies to answer in a full way.

“Al Ritmo De Las Comunidades”, is a natural experiment that for the first time will allow the assessment of the cost and the effectiveness of the *Recreovía* program. Given the absence of evidence, an analysis of this kind will allow to determinate the impact of the intervention of the population, by unity of investment. It is fundamental to have the evidence of the costs and effectiveness of the program in order to have decision tools in the implementation of PA programs, which have a high potential in the reduction of Health care costs. In addition, it gives information allowing the implementation of this programs in Latin America. The aim of this study is to evaluate, the effectiveness and cost effectiveness of the *Recreovía* program in promoting moderate-to-vigorous physical activity

Methods

Study desing and setting

Al ritmo de las comunidades, is a natural experiment to assess park use and evaluate the effectiveness of the *Recreovía* program at increasing PA levels at the community level in Bogota, Colombia. The study was conducted during the years 2013 to 2015 in 9 parks, (3 parks with *Recreovía*, 3 parks intervention and 3 parks without *Recreovía*).

Bogota is the capital of Colombia (7.6 million de people) and is recognized for its efforts to promote PA by proving access to recreational and active commuting facilities such as and bike trails (Torres, Sarmiento, Stauber, & Zarama, 2013), and the implementation of community-based PA programs as the case of *Ciclovía* since 1974, and *Recreovía* in 1995 (Díaz Del Castillo, Sarmiento, Reis, & Brownson, 2011).

The city of Bogotá counts with 6,7 m² the green urban areas per inhabitants, 4,882 parks, distributed as following: 1 regional park, 21 metropolitan (superior a 10 hectáreas), 46 zonal, 78 local, 3196 neighborhood and 1768pocket parks(DADEP, 2013; IDR, 2015). Regional parks are located totally or partially outside the district of Bogota with a surface of more than 100.000 m². Metropolitan parks are located within the city of Bogota with a surface of more than 100.000 m². Local parks are recreational areas with especial equipment such as sports arenas between 10.000 m² to 100.000 m². Neighborhood parks are located within specific areas of the city serving all community in general. Pocket parks are designed to serve in particular young and older adults communities. Neighborhood and parks sizes are around 1.000 m² and 10.000 m².(Alcaldia Mayor de Bogotá, 2013; IDR, 2015)

The RCP is currently implemented in 41 hubs in the city, around the city (19/20 localities): 2 hours during weekdays mornings and nights (from 6:30 am to 8:30 am and from 6:30 pm to 8.30 pm), and from 3-5 hours during weekends/holidays (from 8 am to 1 pm). *Recreovía* has a total of 46 instructors, and an annual budget of 872.974 USD (2015). The 75% of PA hubs are located in neighborhoods classified as low (2-3) socio-economic

stratum, 4 PA hubs are located in metropolitan park, 10 in local in parks, 3 in neighborhood parks, 3 in parking lots, 1 in a community center, and 10 in shopping centers. The PA classes are delivered weekdays, and Sundays and holydays.

Parks Selection

A total of nine parks were selected: The parks were classified into three groups according to the implementation of the *Recreovía* program: The first group was 3 parks with current *Recreovía* implementation (types A); the second group, was the intervention group (types B), where the IDRDR selected three parks, initially without the *Recreovía*, to implement the program during the year 2013 and the third group, were three parks without the *Recreovía* program (Types C).

A list with the parks that had already instituted the RCP was provided by the coordination of the program at the District Institute of Sports and Recreation (IDRD, by its abbreviation in Spanish). The list was divided into two groups; one containing parks with more successful implementation (high attendance rates), and another containing parks with less successful implementation (low attendance rates). For the three parks type A, one was not randomly selected. This was the Nacional Park, which was selected because it was the first RCP site implemented in 1995, and is currently the most popular (i.e. more attendees). The other two parks were randomly selected. Out of six parks considered with more successful implementation, San Cristobal park was selected; and out of 3 parks with less successful implementation, Bosques de San Carlos park was selected.

A second list including all the parks of the city was provided as well, in order to select parks without RCP that will serve as the control and intervention groups for the parks with current RCP implementation. Each park was analyzed by the research group and staff of the RCP (since they were more familiarized with the context and conditions of parks) to create a final list containing the parks that matched the socio-demographic conditions (socioeconomic status) and characteristic of parks regarding potential recreational areas, type and size of the parks. Six parks without the RCP were randomly

selected from the final list. In this sense, Tibabuyes, Villas de Granada and Arborizadora Alta parks were randomly selected as parks type C, and Meissen, Santa Isabel and Valles de Cafam parks were randomly selected for implementation the Recreovía program (type B).

Intervention

The intervention consisted in implementing the Recreovía program in the three parks from the intervention group. The program offered free and regular PA classes including aerobics, folk dance, pilates, martial arts, among others, every Sunday from 9am- 12pm. Classes were conducted by qualified physical activity instructors selected and trained by the IDR and the equipment used (stage, music etc) was financed with public funds. People from the intervention group were informed via telephone or email once the program was implemented in their respective parks.

Measurement:

It was made three measurements in three stages at the time: before the implementation (T₀), 6-8 months after the implementation (T₁) and 12-15 month after the implementation (T₂).) It was used the tool "System for Observing Play and Recreation in Communities" (SOPARC) which is based on momentary time, sampling techniques in which systematic and periodic scans of individuals and contextual factors within pre-determined target areas in parks are made. The direct observations are made in objective-areas, which are all the potential areas where PA is made. Those areas are measured and identified on a map, in addition, they are assigned a hierarchy in order to be able to assess. The scan of the area is made left to right, it is registered the gender, approximated age and the level of PA present in the area: Sedentary, (sitting down, standing up), moderate (walking), vigorous (running, riding bicycle)(Cohen et al., 2011; McKenzie, 2006; Deborah A, 2006). It was made a measure with the help of mechanical validated and standardized counters. For the SOPARC measurement it was two people located in each park on Sundays in different schedules of Recreovía. The parts of the park where the program was executed was assessed 10 minutes before the session, 10 and 40

minutes after the session had started, and, finally, 10 minutes after the session was closed, in the other hand, the rest of the zone was assessed in the morning time and at the end of the execution of the program, in the afternoon. The methodology was equal in the parks type A, B, and C.

A total of 210 areas were assessed in the three types of parks, it was determined in each of these zones the levels of PA and assistance, classifying gender and age.

Energy expenditure

The intensity of PA is expressed in literature in metabolic units (METs), where 1.5 is for a sedentary, 3 to 5,9 is for moderate activity and more than 6 is vigorous activity. For each observation period and target area (scan for women and men), the total energy expenditure (EE) (kcal/kg/min) was calculated multiplying the number of individuals observed each PA level by their respective value of the EE total (# sedentary*0.051 kcal/kg/min, # moderate*0.096 kcal/kg/min and # vigorous*0.144 kcal/kg/min). These values were previously established for each PA level (Besenyi, 2013; Santa María, 2010). Consequently, the EE products for each PA intensity level were summed up. The average of the EE per person was calculated dividing the EE total by the total number of individuals. For example, 23 users were observed in a target area: 10 sedentary, 9 moderate and 4 vigorous – EE average = $[(10*0.051) + (9*0.096) + (4* 0.144)/23] = 0.085$ kcal/kg/min.

Assessment of effectiveness and cost-effectiveness

For the assessment of effectiveness and cost-effectiveness, it is only used the data belonging to parks type B and C, given that it was only wanted the observation of the truly effect of the intervention of parks in which it was instituted Recreovía in 2013. In the estimation of the effectiveness of Recreovía, it was considered the preexistent differences in the interest variables within control parks and treatment parks, besides of the natural trends of this variables. The measurement of effectiveness was given by the rise of the levels of PA, measured with SOPARC and the absolute intensity that was

expressed by metabolic units (METs). (HHS, 2008). Finally, by the strategy of impact assessment of "Differences in differences" (DD) it was stated the rise of the METs and it was compared the base line (T₀) and the monitoring in (T₁) of the intervention and control parks. It wasn't made an assessment of effectiveness with T₂ given the suspension of the program in parks of B type.

The DD method is conceived by the following equation:

$$\tau_{(DD)} = (E(Y_{t=1} | D=1) - E(Y_{t=0} | D=1)) - (E(Y_{t=1} | D=0) - E(Y_{t=0} | D=0))$$

Where Y_t is the variable of interest that is affected through the implementation of the intervention, t is the subscript of the period in which the information is recollected, where t=1 indicates the period post intervention and t=0 indicates the period of the base line. (Bernal & Peña, 2010).

To determine the cost effectiveness, it is necessary to know the cost of the program. This information was obtained with interviews to the board of directors of the IDR and official documentation provided by them. The analysis considered a mixed methodology of micro-financing and general financing, in three steps: i) identification of the objects to estimate, ii) measurement of the amounts, and iii) Estimation of the costs. (Garrett et al., 2011). Finally, the analysis of costs-effectiveness was compared to the effectiveness of the program and the economic costs incurred

$$RCE = \frac{\Delta METs \text{ with the program} - \Delta METs \text{ without the program}}{\text{Costs with the program} - \text{Costs without the program}}$$

Data analysis

A description of parks and target areas size, quality score of parks, population density and EE were described for average (standard deviation - minimum-maximum) by type of park (Type A parks, Type B parks and Type C parks), The number, type and conditions of target areas were describe using relative frequency distribution. The number and characteristics of observed users (gender, age group and PA levels) were described using

absolute and relative frequency distribution. Also, we estimate the proportion of the parks users for age group and PA levels adjusted by population density according to the type of park (e. g.: # children observed in parks x 100 / density children in 500 m).

The normality of the continuous variables was tested for posteriorly comparison by type of park with ANOVA one-way or Kruskal Wallis test. The association between the characteristics of parks users by type of park was analyzed with chi-square (χ^2) test. The program's impact was estimated through a potential-outcome evaluation using a difference in difference method comparing baseline and the follow-up of controlled and intervened parks. We conducted generalized linear regression models to assess vigorous-to-moderate PA in each park. Regression models were specified considering possible correlation between areas in a same park, fixed effects by park and specific data distribution in function of each type of data (e.g. negative binomial distribution and a Gaussian distribution). All analyses were performed using STATA v.14, SAS v.9.2 and SPSS v. 17.0 programs, considering 5% of significance.

Results

Parks sizes and characteristics of target areas

We evaluated 9 parks with an average size of 47,801m² (8,182 to 135,527 m²); parks description is provided in Table 1. A total of 210 target areas were delimited, mapped and observed, but we only considered 115 (corresponding to type parks B and type parks C) for cost-effectiveness analysis. The average size of target areas was 353.9 m². In T1, of these, sports areas were the target area most frequently observed (51%), while the exercise/stretching areas were less observed (3.8%). Type parks A showed more open areas (21.8%) than type parks C (0%) and type parks B (10%). Parks with *Recreovía*, type A, were more equipped (50.8%) and organized (42.1%) than parks type parks B and C. Parks intervention were more usable (100%), empty (52.9%) and supervised (18.1%) than the other park types. Although control parks were the least supervised (9.6%), they were as accessible as parks with *Recreovía* (100%).

Parks users

In all three park types, we observed 4925, 4939 and 4305 park users at times T₀, T₁ and T₃, respectively; attendance description is provided in Table 2. At baseline (T₀), the attendance in Recreovía Parks was greater (Type A parks 68,5% vs. Type B parks 10,5% vs. Type C parks 21,4%; $p < 0.001$) and also registered a higher number of attending females (53% vs. 40% vs. 33%; $p < 0.001$) than in the other park types. Attending men were registered mostly on Type C parks than in the other parks (47% vs. 60% vs. 67%; $p < 0.001$). At the following observation after the intervention (T₁), Type A parks persisted with the highest attendance versus the other park types (66,49% vs 18,83% vs 14,68). When considering Type B parks in T₁, we registered an attendance increase in 187% versus T₀; of attending people, 60% were females, mostly adults (68,93%). For Type C parks in T₁, we observed attendance decrease by 31% versus T₀, phenomenon mostly noted for female attendants (32,64% (T₀) vs 19,6%(T₁)). In the next observation (T₂), attendance in Type A, Type B and Type C parks was similar versus T₁ (66,09% vs 18,58% vs 15,33). As a particular case in one of the Type B parks, Recreovía program was suspended which resulted in attendance decrease in about 29% (Figure 1).

PA levels

At baseline (T₀), PA levels were similar between all three park types. When considering PA levels by gender, women were more active in Type A parks (MVPA = 75%) as compared to Type B and Type C parks (Intervention MVPA = 68,7% and Control MVPA = 55,59, respectively) ($p < 0.001$). On the contrary, men appeared more active in parks without Recreovía (Type A with Recreovía: MVPA = 65%; Type B and Type C parks: MVPA = 71%, ($p < 0.001$)). (Figure 1)

At the following observation after the intervention (T₁), both males and females were more active in Type A parks than in the other park types. However, Type B parks registered the highest increase in MVPA, specially between females. Once again, men appeared to be more active in Type C parks than in the rest of the park types. (Figure 1)

Finally on the next observation (T₂), PA level were similar between T₂ y T₁ for Type A and Type C parks. However, the sudden interruption of Recreovía program in one of the parks resulted in a significant decrease in PA levels on Type B parks (Figure 2).

Effectiveness and Cost-effectiveness Analysis

In the 2014, the annual costs the program was 1,2 millions, approximately 0.8 USD per user. The evaluation of the Recreovía program between Type B and C parks resulted in an increase of physically active persons (MVPA) by 62 per park ($p < 0.001$), for a total of 186 persons in all evaluated parks. Impact of the program varied significantly when considering gender: average impact was 161 per park ($p < 0.001$) and 40 per park ($p < 0.001$) for females and males, respectively.

Cost-effectiveness analysis revealed a net gain of 859 METs per park ($p = 0.01$), for a total of 2,577 METs in the 3 parks. Gender heterogeneity also was observed for MET values, with an impact of 331 ($p = 0.015$) and 528 ($p = 0.21$) for men and women, respectively. If the effect of the intervention lasted at least 6 months, and the cost of the intervention to increase MVPA in one person is 7,29 USD, the cost effectiveness is approximately \$0.50 per MET-hour gained. Table 3

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Discussion and limitations:

The results of the natural experiment "Al ritmo de las Comunidades" shows the potential of a community intervention, which uses public spaces like parks, to promote assistance and increase the levels of MVPA, especially between women who are the most inactive (ICBF, 2010). This study gives evidence to support the expansion of similar programs in Latin America.

In addition, we found multiple benefits. One of them was the revitalization of public spaces, such as parks, thanks to the implementation of the program. Furthermore, we found that the participants from the Recreovía feel safer in a city where 52% of the

population feel unsafe. This is a very interesting finding, particularly if we considered that safety is a pivotal factor to the promotion of physical activity. (Ríos & Sarmiento, 2015)

To quantify the absolute measurement of METS predicts a decrease in the risk of cardiovascular and metabolic disease and the mortality by all causes (from 19% to 36% in men and from 36% to 55% in women); To meet these goals it is necessary to get involved in a PA of 500 – 1000 METs/minute per week. (HHS, 2008; Shiroma, 2014a; Tanasescu, 2003). According to these information and the gain expressed in METs, after our intervention we know that 50 cents are required to increase one MET in the Recreovía participants. For these reason, we considered Recreovía program as a cost-effective program to the increase of PA levels. .

However, there were limitations in this study: First of all, the intervention was done only in three parks (type B) and the cost-effectiveness analysis included two of the three phases (T₀ and T₁) from the design due to the discontinuation of the program in one of the parks type B. The lack of budget on T₂ had a negative impact on the participation rates and PA activity levels. Finally, Colombia lacks from adequate and update studies about the direct costs of the physical inactivity and chronic diseases. These situation turns difficult a deep analysis of the positive effects from increasing METs in the population.

Conclusions e Implications for Practice and Policy:

The Recreovía program is effective in increasing the number of persons in parks and the levels of moderate-to-vigorous physical activity, especially among women and only 50 cents are required to increase one MET in the participants, making the program cost effective. In additions, the decision-makers can use these results to help prioritize their local and national physical activity promotion in policymaking agendas.

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Table 1: Characteristics of parks, target areas, populational density and energy expenditure by presence of the Recreovia Program (RCP). Bogotá, Colômbia, 2013 (n=9).

	With Receovia Type A parks (n=3)	Intervention Type B parks (n=3)	Control Type C parks (n=3)	P	All parks (n=9)
Size of park (m²)					
Average ± std. Deviation	113,634±20,020	14,547±7,083	15,223±11,474	0.066 ^a	47,801±50,829
Minimum-maximum	96,257-135,527	8,980-22,521	8,182-28,464		8,182-135.527
Characteristics of target áreas					
Number	95	60	55	-	210
Size (m²)					
Average±std. Deviation	437.9±727.99	208.7±108.4	355.9±543.2	0.543 ^a	353.9±577.1
Minimum-maximum	50.0-3,131	50.0-545.0	18.0-2,883		18.0-3,131
Type (%)					
Sports área	63.2	41.7	40.0	-	51.0
Playground area	13.7	16.7	12.7	-	14.3
Recreovia área	13.7	13.3*	9.1 [†]	-	12.4
Open área	0.0	10.0	21.8	-	8.6
Skating/roller track	4.2	3.3	10.9	-	5.7
Walking/running track	3.2	8.3	1.8	-	4.3
Strength/stretching exercise área	2.1	6.7	3.6	-	3.8
Conditions (%)					
Accesible	100.0	96.6	100.0	-	99.0
Usable	99.7	100.0	98.2	-	99.4
Equiped	50.8	23.5	32.9	-	38.4
Empty	19.0	52.9	19.8	-	29.2
Organized	42.1	1.0	9.6	-	22.1
Supervised	11.2	18.1	9.6	-	12.9

*future Recreovia area;

Table 2: Attendance per Sex and Age group

	With Recreovia (Type parks A)					Intervención (Type parks B)					Control (Type parks C)					
	To	T1		T2		To	T1		T2		To	T1		T2		
N_observaciones	<u>n (%)</u>	<u>327</u> n (%)	X2 To-T1 /P	<u>n (%)</u>	X2 To-T2 /P	<u>n (%)</u>	<u>168</u> n (%)	X2 To-T1 /P	<u>n (%)</u>	%	X2 To-T2 /P	<u>n (%)</u>	<u>163</u> n (%)	X2 To-T1 /P	<u>n (%)</u>	X2 To-T2 /P
Total users	3376 (68,5)	3284 (66,5)		2845 (66,09)		495 (10,05)	930 (18,83)		800 (18,58)			1054 (21,4)	725 (14,68)		660 (15,33)	
Sex																
Female	1790 (53,02)	1883 (57,34)	12.5 (<0.0001)	1629 (57,26)	11.2 (<0.001)	196 (39,6)	560 (60,22)	55.1 (<0.001)	456 (57)	57	37.1 (<0.001)	344 (32,64)	142 (19,59)	36.8 (<0.001)	165 (25)	11.3 (<0.001)
Male	1586 (46,98)	1401 (42,66)		1216 (42,74)		299 (60,4)	370 (39,78)		344 (43)	43		710 (67,36)	583 (80,41)		495 (75)	
Age group Female																
Childrens	307 (17,15)	252 (13,38)		114 (7)		75 (38,27)	65 (11,61)		55 (12,1)	12,1		126 (36,63)	56 (39,44)		62 (37,58)	
Adolescents	77 (4,30)	196 (10,41)	64.5 (<0.001)	54 (3,31)	86.6 (<0.001)	34 (17,35)	88 (15,71)	73.8 (<0.001)	20 (4,4)	4,4	117 (<0.001)	73 (21,22)	13 (9,15)	10.5 (0.015)	32 (19,39)	5.4 (0.145)
Adults	1372 (76,65)	1374 (72,97)		1420 (87,17)		83 (42,35)	386 (68,93)		381 (83,6)	83,6		135 (39,24)	67 (47,2)		71 (43,03)	
Older adults	34 (1,9)	65 (3,45)		41 (2,52)		4 (2,04)	21 (3,75)		0 (0)	0,0		10 (2,91)	6 (4,23)		0 (0)	
Age group Male																
Childrens	367 (23,14)	224 (16)		131 (10,77)		104 (34,78)	157 (42,43)		86 (19)	25,0		202 (28,45)	91 (15,61)		193 (39)	
Adolescents	162 (10,21)	236 (16,85)	48.1 (<0.001)	112 (9,2)	84.3 (<0.001)	55 (18,39)	67 (18,11)	4.7 (0.191)	29 (10)	8,4	31.3 (<0.001)	169 (23,8)	174 (29,85)	35.6 (<0.001)	66 (13,33)	26.3 (<0.001)
Adults	1025 (64,63)	917 (65,45)		955 (78,5)		138 (46,15)	143 (38,65)		229 (30)	66,6		337 (47,46)	309 (53)		235 (47,47)	
Older adults	32 (2,02)	20 (1,43)		18 (1,48)		2 (0,67)	3 (0,81)		0 (0)	0,0		2 (0,28)	9 (1,54)		1 (0,20)	

Figure 1. Comparison of activity levels among Women and Men

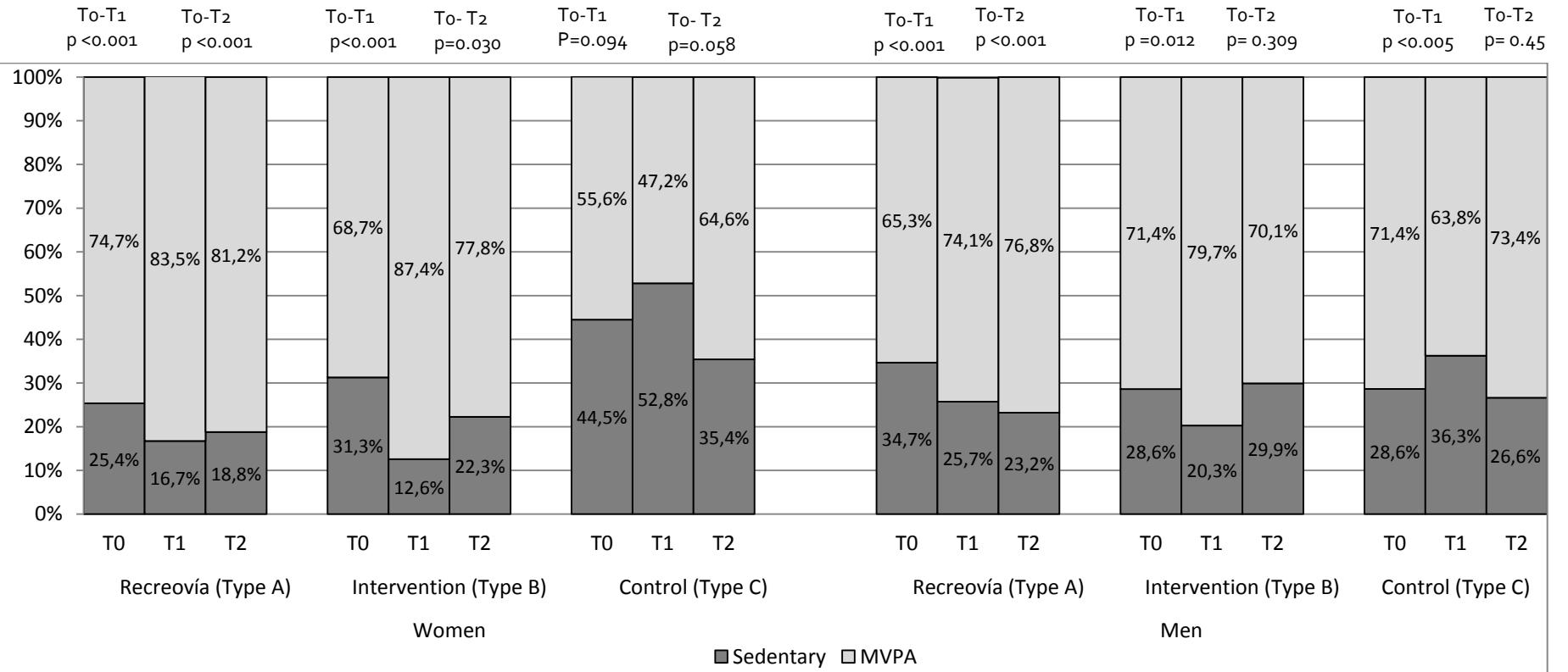


Figure 2. Activity levels among user parks Meissen.

