Centre for Physical Activity and Nutrition Research

Vern Wright Reserve:
A report on the impact of refurbishment on park usage and park-based physical activity

Summary report

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1 Background

1.1 Background

Exposure to green space, local parks, playgrounds and public open spaces (parks) has a positive effect on health and health related behaviours.[1] Parks have been identified as important settings within the local neighbourhood for leisure-time physical activity. Physical activity undertaken in green-spaces may have greater psychological and physiological benefits than physical activity in other settings.[2] Inactivity is a major contributor to the burden of chronic disease, including cardiovascular disease, diabetes, and overweight and obesity,[3,4] thus understanding how to attract residents to parks and encourage park users to be physically active is an important public health initiative.

Moreover, there is a particular need for strategies to promote physical activity in disadvantaged neighbourhoods where residents are at an increased risk of inactivity and associated poor health.[5]

Natural experiments, involve researchers observing changes that occur in a population group after an environment has been altered. Natural experiments have been identified as a top research priority for investigating causal associations between the built environment and physical activity; for increasing the evidence base in terms of environmental determinants of physical activity; and for identifying effective interventions and policies to promote physical activity.[6,7] Due to the substantial financial costs and logistical challenges of conducting research requiring major modification of the built environment, research in this area is scarce and natural experiments involving parks have rarely been conducted.

While a limited number of natural experiments in the US have focused on other environmental modifications such as the impact of the development of neighbourhood greenway/trails,[8] or sporting playfields,[9] few studies have focused specifically on neighbourhood parks.[10]

In 2009, the researchers identified an opportunity to conduct a natural experiment in Victoria, Australia through collaboration with a local government (Rosebud Community Renewal) who were planning to improve a neighbourhood park (Vern Wright Reserve, Rosebud West). This intervention represented a rare opportunity to undertake a natural experiment to examine the impact of park refurbishment on park use and park-based physical activity.

1.2 Study aims

This study aimed to examine whether improvements in park facilities and amenities led to changes in:

1 Park use;

2 The active (or sedentary) nature of activities undertaken in the park; and

3 Whether any observed changes were maintained over time.

A further aim was to examine whether perceptions of the park changed following park refurbishment among residents living near the intervention park.

2 Study design and methods

2.1 Study methodology

The study methodology was designed to detect changes in park use and park-based physical activity. Vern Wright Reserve was refurbished and identical measures, including direct observations of park users and a survey of local residents, were conducted at the intervention park (Vern Wright Reserve) and a control park (Woodvale Reserve).

- Intervention park – Vern Wright Reserve, Shearwater Place, Rosebud West (size approximately 25,200m^2)
- Control park – Woodvale Reserve, Woodvale Grove, Rosebud West (size approximately 10,000m^2)

The control park was selected based on having similar features as the intervention park at baseline (i.e. pre-refurbishment) and being located within the same neighbourhood. The two parks were located approximately 6.5km apart via the main roads. The neighbourhood within which the two parks were located (Rosebud West) is within the most disadvantaged decile in the state of Victoria according to the 2006 Socio-Economic Index for Areas (SEIFA) Index of Relative Socio-economic Disadvantage.[11] Ethics approval for this study was granted by the Deakin University Human Research Ethics Committee.

2.2 Refurbishment of Vern Wright Reserve

Pre-refurbishment, Vern Wright Reserve was primarily an open space area with few amenities. In January 2009, the local government undertook a consultation with residents to discuss the redevelopment of the park. The redevelopment aimed to benefit the local community by providing a safe place for residents of all ages to participate in recreational activities. The residents established priorities for the redevelopment that focussed on community safety for older residents, children, families and dog walkers.

These priorities were addressed in the park refurbishment through the establishment of:

- a secure leash-free area for dogs (12,800m^2)
- a fenced, accessible, all-abilities playground that provided access for residents with mobility issues
- a 365m walking track
- access to a sheltered BBQ area
- landscaping of gardens
- additional fencing/bollards to prevent motor vehicle access to the park

2.3 Observations of park users

Trained research assistants from Deakin University conducted observations of the park users at Vern Wright Reserve and Woodvale Grove Reserve. The observations were conducted every 15 minutes (or 7 times) during three different 1.5 hour periods on each day of data collection; morning (7.30-9.00am), midday (11.30am–1.00pm), and afternoon (3.30pm–5.00pm). Data were collected for a total of nine days (spread over 4 weeks) including five weekdays and four weekend days. This resulted in a total of 27, 1.5 hour observation periods at each park at each time-point.

Observations were completed at three time- points:

- T1: baseline (6 August 2009 – 30 August 2009)
- T2: following park refurbishment (4 March – 18 April 2010)
- T3: 12 months after baseline (15 August – 16 September 2010)

Observers used a reliable observation instrument (SOPARC – System for Observing Play and Recreation in Communities)[12] to categorise park users according to sex; age groups (2–4 years, 5–18 years, and adult); and the activity in which they were engaged (sedentary [lying down, sitting, standing]), walking or very active [vigorous]).

2.4 Resident surveys

In August 2009, prior to the commencement of the park refurbishment, all residents living within 1km of the intervention and control parks (approximately 2000 residents per park) were mailed a letter explaining the study and a survey. Residents were invited to complete the survey and return it to Deakin University. Residents who completed this baseline survey in 2009 and indicated that they were prepared to participate in further research were sent a follow-up survey in April 2010.

The survey included questions on demographics, including: sex; age; country of birth; marital status; level of education; employment status; dog ownership status; and number of children under 18 years living at home. Respondents also reported whether they had visited the control or intervention parks in the past six months, and their agreement with a number of statements regarding the features of the particular park, such as: "I am satisfied with the quality of this park"; "The park is suitable for dog walking"; and "The park is a good place for families to visit".

3 Study findings

3.1 Findings from the park observations

The total number of observed park users at Vern Wright Reserve increased immediately after the refurbishment was complete (T2) and continued to increase at the third measurement time-point (T3). Figure 1 presents the average total counts of observed users at both the intervention and control parks at each observation period.

Counts of observed park users at Vern Wright Reserve

- T1: (baseline) n = 235
- T2: (following park improvement) n = 582
- T3: (12 months after baseline) n = 985

Counts of observed park users at Woodvale Reserve

- T1: n = 83
- T2: n = 114
- T3: n = 51

Overall, at the intervention park at each of the three time- points, more males than females were observed (Figure 2), adults were observed more frequently than adolescents and children (Figure 3), a greater number of park users were observed in the afternoon compared with the morning or midday (Figure 4), similar numbers were observed on weekdays and weekend days (Figure 5), and significant increases were observed in the number of park users walking or being very active (Figure 6).

The average temperature (taken at the beginning of each observation period) was 12.6°C at T1, 22.7°C at T2 and 14.9°C at T3. The average monthly rainfall for the area at T1, T2 and T3 was 62.4mm, 65.8mm and 102.3mm respectively.[13]

Figure 1 Total number of observed park users at Vern Wright Reserve (intervention park) and Woodvale Reserve (control park) at each of the three time-points

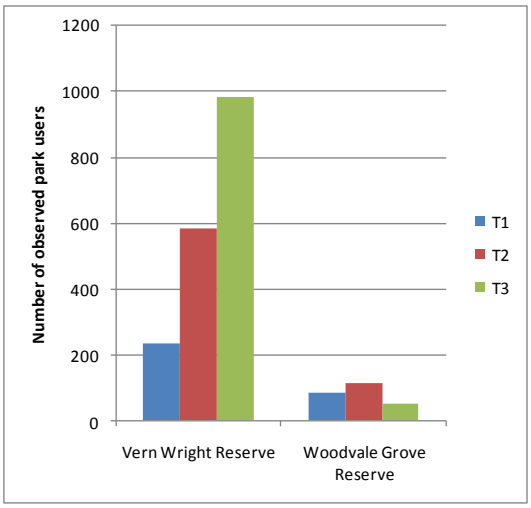


Figure 2 Observed park users by **sex** at Vern Wright Reserve across the three time-points

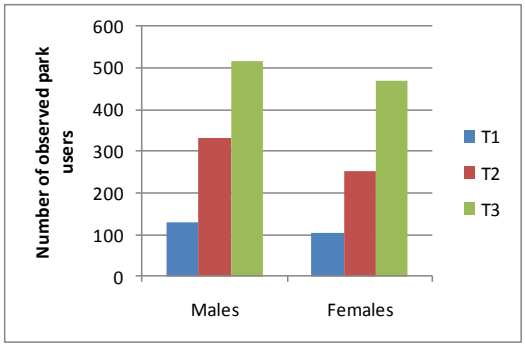


Figure 3 Observed park users by **age groups** at Vern Wright Reserve across the three time-points

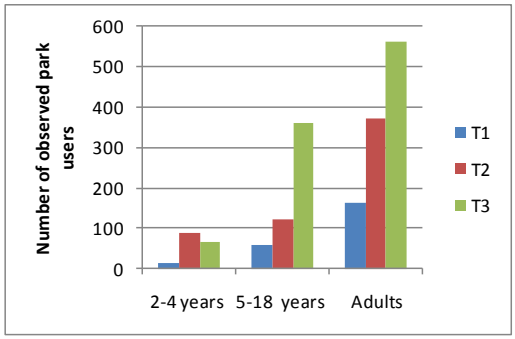


Figure 4 Observed park users at **particular times of the day** at Vern Wright Reserve across the three time-points

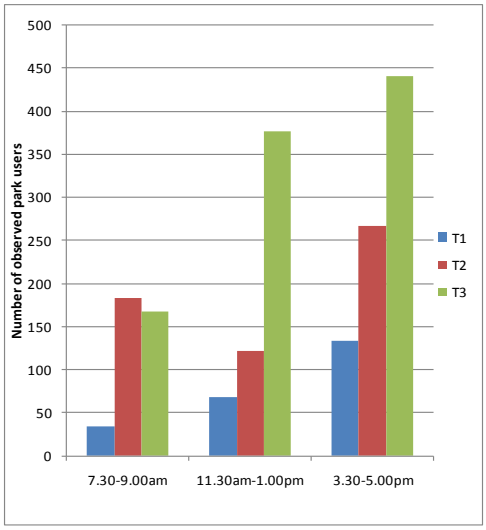


Figure 5 Observed park users on **weekdays and weekend days** at Vern Wright Reserve across the three time-points

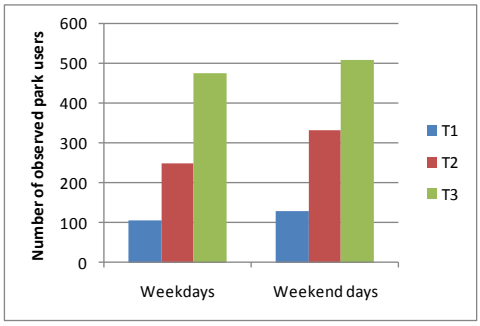
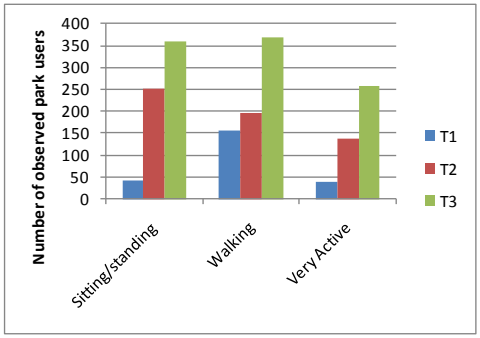


Figure 6 Observed **activity engaged in** by park users at Vern Wright Reserve across the three time-points



3.2 Findings from the resident surveys

Unfortunately a low response rate to the resident surveys was achieved, possibly due to a large number of holiday homes in the area.

Numbers who completed a survey:

Vern Wright Reserve:

- 123 adult residents completed a survey at T1
- 76 adult residents completed a survey at both T1 and T2
- 25 child surveys were completed at T1
- 12 child surveys were completed at both T1 and T2

Woodvale Reserve:

- 196 adult residents completed a survey at T1
- 118 adult residents completed a survey at both T1 and T2
- 41 child surveys were completed at T1
- 26 child surveys were completed at both T1 and T2

Due to the low response rates, the results from this survey are not representative and only a snapshot of the survey results has been presented in this report.

The following results are for survey respondents living near Vern Wright Reserve who completed a survey at T1 and T2 and who also visited the park at T1 and T2 (n=44). The average age of these survey respondents was 56 years, the majority (73%) were female, 91% were born in Australia, 60% were married, 42% were retired, and 72% owned a dog.

Residents' satisfaction with the intervention park increased post-refurbishment. After park refurbishment a significantly greater proportion of respondents reported greater satisfaction with the quality of the park and the facilities available, thought that the park was a good place for families to visit, and felt safe at the park.

Main reasons for visiting the refurbished Vern Wright Reserve:

- To walk the dog
- Live close by so park is easy to access
- To meet friends
- To take grandchildren to playground
- The park has become a popular meeting place for locals

Recommendations to further encourage use of Vern Wright Reserve:

Provide:

- toilets
- more complex and challenging play equipment
- more seating
- more rubbish bins
- lighting for night visits
- dog dropping bags
- more trees/shade
- more trees and seating in the dog off leash area
- more landscaping
- footpaths to access the park

Current concerns about the refurbished Vern Wright Reserve:

- Since the installation of the dog off leash area, there is more trouble with dogs and arguments over dogs
- The walking track surface is uneven and unsafe and needs to be sealed
- Need to mow the grass more regularly
- Need to encourage dog owners to collect dog droppings
- Need to improve the grass surface in the oval area
- Residents are concerned about pot holes
- Residents are concerned about the risk or possibility of "hoon" behaviour
- Walking path is too barren and uninteresting and needs more trees
- Not enough activities or equipment for children
- Need to remove rubbish and clean BBQ

4 Study conclusions

4.1 Conclusions

- This study demonstrated that refurbishing an existing local park increased park use and park-based physical activity.
- This study provides evidence for policy and decision-makers that neighbourhood park refurbishment does have the potential to increase park usage and park-based physical activity.
- These findings confirm the importance of parks as settings for physical activity.
- Importantly, increases in park use and park based physical activity were observed immediately post-refurbishment with further increases observed 12 months after baseline.
- Park refurbishment resulted in an overall increase in use of the park for both males and females, and across all age groups.
- Future studies should examine which elements of park refurbishment make the greatest difference to park use and park-based physical activity.
- Future studies should explore what specific improvements target use by different groups in the population.

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