Build and they will come: A follow-up evaluation of outdoor exercise equipment in Western Australia

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Abstract

Issue addressed: In Australia, the role of local governments authorities (LGAs) are diverse, ranging from waste collection to the provision of recreational facilities, such as parks. One strategy to improve parks is outdoor exercise equipment (OEE), and provide free, community-based physical activity opportunities. We undertook an observational study to capture a profile and behaviour of park visitors and OEE users in 2012 and 2019.

Methods: We compared observational data at two parks using the System for Observing Play and Recreation in Communities (SOPARC) in March and June 2012 and 2019. Data were collected 6:30-7:30 AM and 5:30-6:30 PM weekdays; 8:30-9:30 AM and 3:30 to 4:30 PM weekends. Two trained staff collected data concurrently.

Results: Total n = 1654 visitors were observed, most at Park One (68.0%; n = 1117), half were male (50.9%; n = 841). There were significant differences in the gender of visitors across the two parks (P < 0.001). Most visitors observed were young adults (42.6%; n = 705; P < 0.001). In 2012, 3.9% (n = 65) of all observed park visitors used the OEE, in 2019, this increased to 4.8% (n = 78).

Conclusions: The adage ‘Build it, and they will come’ did not resonate with the two parks’ local community. The key challenge is attracting people to local parks making OEE use attractive and easy.

So what?: There is a demand for the provision of active environments that are accessible and inexpensive. LGAs may hold the key to delivering this infrastructure supported by diverse strategies to engage and promote the benefits of being physically active for all ages.

KEYWORDS community parks, evaluation, outdoor exercise equipment, physical activity

1 | INTRODUCTION

In Australia, the role and responsibilities of local governments authorities (LGAs) are diverse, ranging from community services and waste collection to the provision of recreational facilities, such as parks.1 In most jurisdictions, public health acts guide LGAs2,3; for example, in Western Australia (WA), the Public Health Act 20162 vests LGAs to provide sustainable, equitable and cost-effective interventions to improve community health. As one strategy to achieve this mandate, LGAs have allocated funds to improve recreational spaces in local neighbourhoods by introducing park-based outdoor exercise equipment (OEE)3–9 to increase the availability of free, community-based physical activity opportunities.

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OEE is similar to conventional indoor gym equipment, with the addition of durable, vandal-resistant and weatherproof design features.6,9 OEE can be used by people of varying fitness, ages and abilities.6,10 Installation and use of park-based OEE have demonstrated positive effects for park users and LGAs,3,8,9,11,12 specifically increasing adult physical activity levels and attracting new park visitors.9 Research has found that park visitors perceived OEE as good investments by their LGA,14 facilitating increased community engagement in physical activity.9

Over the past decade, OEE has become a common sight in local Australian parks.15 However, a recent Queensland study found that LGAs required more information about OEE usage, strategies for marketing OEE, and parks’ economic benefits.3 Understanding the role LGAs play in providing public parks that facilitate community physical activity warrants further investigation. Following an OEE upgrade in 2018 in two WA metropolitan public parks, we undertook an observational study to capture the profile and behaviours of park visitors and OEE users in 2012 and 2019.

2 | METHODS

2.1 | Study design and data sources

This study compared data collected in 2012 and 2019 using direct systematic observations of park visitors. The Curtin University Human Research Ethics Committee granted ethical approval (HRE2019-0144).

2.2 | Park locations

The two parks were situated in a metropolitan LGA classified as mid-socioeconomic status and located 6 km from Perth, the capital of WA.16 The LGA has a population of around 42 00017 and approximately 309 hectares of parks and gardens within its 40 km² area.18 A park is located within a three-minute walk from most homes.18

Park One contained a wetland, central lake, 1.6-kilometre walking trail, café, public toilets, playground equipment, volley and basketball courts and parking facilities. Park Two contained a Japanese themed garden, playground equipment, barbeques and picnic tables. In 2012, the OEE in both parks consisted of adjustable weight-based specific equipment: shoulder press, abdominal-hip swinger, butterfly press and leg press. Following renovations in late 2018, fixed, resistance-based, Auscore (www.auscorefitness.com) equipment replaced the weight-based OEE.

2.3 | Data collection

A reliable and valid instrument was used to obtain the data, the System for Observing Play and Recreation in Communities (SOPARC).19 Data were collected at both parks at two-time points: 2012 (T1) March (n = 431) and June (n = 314); and in 2019 (T2) March (n = 633) and June (n = 276). Data were collected from 6:30 to 7:30 AM on weekdays and 8:30 to 9:30 AM on weekends; and from 5:30 to 6:30 PM on weekdays and 3:30 to 4:30 PM on weekends. Two trained research staff conducted the observations concurrently and independently, positioned diagonally apart. At the end of each data collection session the two research staff reviewed the documented data gathered using a contextual characteristic of each observation, for example, shirt colour in an attempt to reduce systematic error and data collection discrepancies between the researchers. Consensus was achieved through agreement between the two research staff.

The following data were collected on park visitors: gender, estimated age (years) - young adult (18-39), middle-aged (40-59) or older adult (60 plus); type of physical activity they were engaging in: sedentary (standing, sitting, or lying down); walking; or vigorous activity (eg, jogging or running). Use of OEE was observed and recorded as: trialist (appears to be trying equipment, does not appear to be familiar or have a set routine); habitual (appears to have a set routine or appears to be using equipment with a planned approach); non-user (on equipment, but not using equipment for physical activity eg, leaning, standing, supervising children).

2.4 | Analysis

Data were entered into SPSS version 26,20 and demographic characteristics and behaviours were summarised using descriptive statistics. Associations between demographics and physical activity behaviour were calculated using Pearson bivariate chi-square tests comparing 2012 and 2019 data. Statistical significance was set at $P < .05$.

3 | RESULTS

A total of $n = 1654$ visitors were observed for both time-points (Table 1). Demographic and sample characteristics of all observations are below. Most visitors observed used Park One (68.0%; $n = 1117$). One half of the observed total visitors in both parks across the two time-points were male ($50.9%; n = 841$). There were significant differences in the gender of park users across the two parks ($P < .001$). Young adults were the most frequently observed age group (42.6%; $n = 705; P < .001$).

The most common activity at Park One was walking (T1: 22.1%, $n = 366$ and T2: 29.1%, $n = 481$). At Park Two walking (T1: 6.5%, $n = 108$ and T2: 8.0%, $n = 133$), and vigorous activity (T1: 7.0%, $n = 116$ and T2: 7.8%, $n = 129$) were similar in 2012 and 2019 (Table 1).

Table 2 presents the characteristics of OEE users ($n = 143$). In 2012, 3.9% ($n = 65$) of all park visitors used the OEE, in 2019, this had increased to 4.8% ($n = 78$). In 2012, the ab-hip swing was the most used piece of equipment (60%; $n = 39$); in 2019, one third (33.3%; $n = 26$) of participants used the resistance equipment. Males used...
the equipment more than females (2019: 39.2%; n = 56 and 15.4%; n = 22; males and females respectively) and (2012: 12.6%; n = 18 and 2.8%; n = 4; males and females respectively). The OEE was used most frequently by mid-aged adults (49.0%; n = 70), however findings were not significant for age of users between parks (P = .246) or gender (P = .426). There were no significant differences between gender (P = .266) or age (P = .595) and use of equipment when comparing T1 with T2.

### 4 | DISCUSSION

Neighbourhood parks can positively influence mental and physical health and OEE represents one component of a parks infrastructure, that provides easy access to physical activity. This observational study compared park visitors and OEE use in parks over time following a refurbishment.

Overall, park visitors were evenly split between males and females, and the numbers of users were higher in March, a month often characterised by warm, Mediterranean style conditions in Perth. More females frequented Park One, and more males Park Two. This may be partly explained by the facilities available in Park One, making it a more family and socially orientated “destination” containing both a café and playground equipment and partly because parks and open spaces encourage social interaction. Most Park visitors were observed walking (n = 1088, 65.7%). These findings are consistent with the active environment literature whereby having access to places and spaces in the community supports people to be active and social. Providing the community with utility and pleasure has been cited as an important consideration for local government decision-makers.

OEE use was limited but increased slightly over time and in view of the equipment upgrades in 2018 (3.9% in 2012 compared with 4.8% in 2019). Our OEE user rates are higher than those observed by Cranney et al at 1.9%, (1.9%) Copeland et al, 2.7%, Jansson et al, 3.8% OEE users and slightly less than 5.5% user rate reported by Cohen et al. However, the limited use of OEE equipment by park users in this study is consistent with findings in Australia and

| TABLE 1 Characteristics of observed park users (n = 1654) |
|-------------------------------------------------------|
| **N = 1654** |
| | Park One n = 505 n (%) | Park Two n = 240 n (%) | Park One n = 612 n (%) | Park Two n = 297 n (%) |
| **Gender** |
| Male | 227 (45.0) | 160 (66.7) | 264 (43.1) | 190 (64.0) |
| Female | 278 (55.0) | 80 (33.3) | 348 (56.9) | 107 (36.0) |
| **Age (years)** |
| Young adult 18-39 | 199 (39.4) | 106 (44.2) | 270 (44.1) | 130 (43.8) |
| Mid-aged adult 40-59 | 196 (38.8) | 97 (40.4) | 250 (40.8) | 148 (49.8) |
| Older adult (60+) | 110 (21.8) | 37 (15.4) | 92 (15.1) | 19 (6.4) |
| **Month** |
| March | 274 (54.2) | 231 (96.3) | 414 (67.6) | 198 (66.7) |
| June | 157 (31.2) | 83 (35.6) | 219 (35.7) | 78 (33.3) |
| **Weekday (n)** | 264 |
| AM | 120 (45.4) | 41 (35.6) | 101 (33.7) | 52 (38.5) |
| PM | 144 (54.6) | 74 (64.3) | 199 (66.3) | 83 (61.5) |
| **Weekend (n)** | 241 |
| AM | 126 (52.3) | 67 (53.6) | 156 (50.0) | 125 (77.2) |
| PM | 115 (47.7) | 58 (46.4) | 156 (50.0) | 37 (22.8) |
| **Physical activity (n)** | 462 |
| Sedentary (sitting/lying) | 5 (1.1) | 10 (4.6) | 18 (3.2) | 17 (6.2) |
| Walking | 366 (79.2) | 108 (49.5) | 481 (86.2) | 133 (48.7) |
| Vigorous (running/jogging) | 91 (19.7) | 100 (45.9) | 59 (10.6) | 123 (45.1) |

*Denotes Pearson chi-square test p value <.05.
The newly installed fixed, weight resistance equipment may complement any existing resistance training OEE users are undertaking which has many benefits, including improvements in muscle strength and mobility for older adults. However, few OEE users were in the older age group (+60), contrasting with research that reports seniors most frequently use OEE. This was an interesting finding in our study as parks are popular meeting places for older adults and they offer a cost-neutral option to increase their fitness. Within Park One there was a café, public toilets, playground equipment, volleyball and basketball courts and parking facilities all within close proximity to the OEE. The amenable and accessible surrounding environment, may have made Park One OEE more attractive to use, and then socialise which is consistent with other research. Finally, there is very little evidence about whether park upgrades are an efficient and cost-effective way to allocate resources to increase physical activity.

Our research supports careful consideration of the need for creative support, incentives and marketing strategies to promote OEE to community members and situational supports such as group training and equipment staffing. Scott and colleagues have suggested amplifying the use and the benefits of OEE by including better signage and instructions using traditional and digital devices (eg, smartphone apps and QR codes) to educate park visitors on equipment use and providing data to local councils on OEE use. Interestingly, very few recommendations made in a previous evaluation for this LGA have been implemented, yet they remain relevant. These include recruiting local champions to facilitate sessions on using the equipment, improving current signage on instructions to use the OEE, and promoting OEE through local print and online channels.

Recent health and place and active by design literature have heightened interest in exploring the how and why of park characteristics, park use and physical activity at a local level. Cost

| TABLE 2 | Characteristics of OEE users (n = 143) |
|---------|--------------------------------------|
|         | 2012 T1                                | 2019 T2                                |
|         | Park One n = 43 (30.1%)                | Park Two n = 22 (15.4%)                |
|         | Park One n = 54 (37.8%)                | Park Two n = 24 (16.8%)                |
| Sex     |                                      |                                      |
| Male    | 25 (17.5)                             | 37 (25.9)                             |
| Female  | 18 (12.6)                             | 17 (11.9)                             |
| Age group (years) |                                  |                                      |
| Young adult 18-39 | 20 (14.0)                  | 23 (16.1)                             |
| Mid-aged adult 40-59 | 19 (13.3)                   | 25 (17.5)                             |
| Older adult (60+) | 4 (2.8)                           | 6 (4.2)                               |
| Month   |                                      |                                      |
| March   | 16 (11.2)                             | 41 (28.7)                             |
| June    | n = 10 (7.0)                          | 20 (14.0)                             |
| Weekday | 26                                   | 29                                   |
| Time of day |                                    |                                      |
| AM      | 11 (7.7)                             | 6 (4.2)                               |
| PM      | 15 (10.5)                            | 10 (7.0)                              |
| Weekend | 17                                   | 25                                   |
| Time of day |                                    |                                      |
| AM      | 7 (4.9)                              | 13 (9.1)                             |
| PM      | 10 (7.0)                             | 12 (8.4)                             |
| Used OEE | 43 (2.6)                          | 54 (3.3)                             |
| OEE use level |                              | 24 (1.5)                             |
| Habitual| 21 (14.7)                          | 17 (11.9)                           |
| Trialist| 9 (6.3)                             | 22 (15.4)                           |
| Non-user | –                                    | 15 (10.5)                           |

*Non-user not measured in 2012.
effectiveness remains an under explored issue in relation to OEE. The authors declare no conflicts of interest.

4.1 Limitations and strengths

Observations were restricted to only one weekday and one weekend day during two seasons in March and June, and using observation for age and gender is another limitation. Further, in 2012 park two had no parking facilities at the time of data collection due to extensive adjacent road works. The nearest car park was located approximately one kilometre from the exercise equipment, this may have impacted data collection. Additionally, observational data is a snapshot in time individual, cohort research on the exact nature of park-users is required as profiling park users could enable better tailoring of strategies. However, the research was strengthened by collection at two time-points, the research assistants systematically reviewed the data at the completion of each session to prevent discrepancies and the time-frame between observations (seven years) which eliminated any potential novelty effect of the equipment.

The use of trained observers to collect the data using SOPARC was a strength. However, SOPARC only collects three levels of physical activity (sedentary, walking, and vigorous), limiting the level of detailed or nuanced information about park users.

5 CONCLUSION

The literature supports improvements in the variety of recreation facilities offered in parks to increase community physical and social activity. This study identified a disappointing use of OEE by all park users over time. The adage “Build it, and they will come” did not resonate with the two parks’ local community. The key challenge is attracting people to local parks despite their competing priorities and making OEE use attractive and easy. Strategies are needed to increase OEE use, especially for women and older adults. Finally, profiling park users could enable tailoring of strategies, together with testing the role of advertising, education, and health professionals as channels to promote and encourage OEE use in local parks. This expanded exploration is warranted to ensure we are simply not doing the same thing over and over and expecting a different outcome.

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