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# Community use of school grounds outside of school hours

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## ABSTRACT

Physical activity in childhood is essential for healthy development and wellbeing and school grounds can provide neighbourhood access to safe play spaces. This study examines the relationship between school demographics (school size, school decile, ethnicity of students and population density) and whether school grounds are open or closed for community use outside school hours. Data were gathered from 391 primary and intermediate schools across Tāmaki Makaurau (Auckland), Aotearoa New Zealand (84% of Auckland schools) with 250 schools participating in the full survey. The results indicate that higher school decile and lower population density are associated with school grounds being available for community use. This result is concerning. With closed school grounds more likely to be in lower socio-economic and higher population density areas, the children most affected are the same group who have fewer opportunities and less spaces for active play. The main reason schools closed their grounds was ‘vandalism /graffiti/theft concerns’. Low decile schools whose grounds were open outside of school hours shared a similar commitment to involve their communities widely in school activities and found doing so decreased the levels of vandalism. Their approach may offer useful insights to schools that are currently closed.

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School ground; community use; children; play; socioeconomic status

## Introduction

Physical activity in childhood is essential for healthy development and wellbeing, with effects tracking from childhood through into later life (Telama et al. 2005; Janssen and LeBlanc 2010; Poitras et al. 2016; Bull et al. 2020; World Health Organization 2022). Yet in Aotearoa New Zealand (hereafter NZ), children’s physical inactivity levels have reached epidemic proportions, with estimates suggesting over a third of NZ children are insufficiently active for good health (Smith et al. 2018). In addition, inactivity is a risk factor for obesity and the 2020/21 NZ Health Survey found one in eight children (aged 2–14 years) were classified as obese (Ministry of Health 2021).

Neighbourhood public spaces—streets, parks, schools—and private backyards have traditionally been sites of children’s play and other physical activity. Access to these play spaces is threatened. In Tāmaki Makaurau (hereafter Auckland), population pressures

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and the unaffordability of housing are driving urban densification and a consequence of changing housing typologies is the shrinking of private outdoor space. Apartments, units and terrace houses now account for almost half of all new-builds in Auckland (Stats NZ 2019). Also, parents are increasingly restricting children's independent access to play spaces beyond the home out of fear for children's safety, primarily in relation to traffic but also wariness about strangers (Carroll et al. 2015; Lin et al. 2017). This contraction of public and private outdoor spaces for active play is concerning as play is essential to children's physical, mental, cognitive and social development (McCormick 2017; Sprague et al. 2022; Ucci et al. 2022).

Social connections between the adults and children in a neighbourhood influence parents' willingness to let their children play outside. A higher level of neighbourhood social connectedness provides casual monitoring and benign surveillance of local children's outdoor activities (Witten et al. 2013), and is favourably associated with children's independent mobility (Lin et al. 2017) and children's active school travel (Ikeda et al. 2019). Also, children of parents who perceive their neighbourhood as more connected are more likely to play in green places and street places near home (Lin et al., 2023).

Children from higher decile schools often have opportunities for supervised physical activities such as participation in team sports and other recreational activities lacking for children from lower decile schools. For instance, in an earlier study (Carroll et al. 2015), it was found children from low-decile schools took only a quarter of the trips to formal physical activities taken by children from higher decile schools. A study using data from 24 countries in the WHO European region also found children in lower socio-economic areas were less likely to participate in sports clubs (Musić Milanović et al. 2021). Informal play opportunities close to home are thus essential to enable these children to be physically active and to socialise with friends and family.

Traditionally school grounds have been a community resource, open after school and at weekends for use by children and their families. The importance of schools as 'the heart of community' is often highlighted when access is threatened, for example, in a situation of school closure (Witten et al. 2001; Freeman and Tranter 2011). Closure of school grounds not only reduces children's opportunities to play and be physically active, but it also limits the role schools can play as informal meeting places for parents and residents—sites where the social networks so crucial to health and wellbeing can be forged and sustained (Berkman and Kawachi 2003; Witten and Ivory 2018). School-based social networks can increase neighbourhood social capital and have profound impacts for individuals and the wider community (Buerkle and Guseva 2002; Tsang 2010).

Closing school grounds outside of school hours can be a strategy to reduce vandalism. Past incidents, and the costs of repairs in previous years, determine a school's vandalism risk category. In order to reduce the risk of vandalism, the Ministry of Education provides schools with guidance on design, security, boundary treatments and lighting systems, as well as suggestions for how to create the impression that a school 'is a user-friendly but secure environment' (Ministry of Education 2020).

The heightened importance of green space as a community resource for maintaining physical activity and health was evident during the COVID-19 lockdowns of 2020 and 2021 (Wild 2020; Wild et al. 2021). Public spaces close to where people live are invaluable as a resource for everyone, providing opportunities for healthy levels of physical activity and social interaction (Kyriazis et al. 2020). School grounds are a hyperlocal and

ubiquitous example of public space designed for children's use. If the trend to close school grounds is to be stalled an essential first step is to understand where and why schools are keeping their grounds either open or closed. There may be lessons to learn from those schools whose grounds have remained open.

The aim of this research is to examine whether there is an association between neighbourhood socioeconomic status, ethnicity of students or population density and the availability of school grounds for community use outside school hours within the Auckland region. The research also explores the main reasons behind schools' decisions to open or close their grounds for public use.

## Methodology

### *Participant recruitment*

There were 464 primary/contributing/intermediate schools listed in the Ministry of Education's directory of schools in Auckland as of September 2020 (Ministry of Education 2020). We were able to contact 391 schools during July 2021 and March 2022 (84% response rate). The schools we couldn't reach were primarily due to unanswered calls (despite multiple attempts), wrong number or disconnected phoneline.

All the schools contacted were asked a pre-survey question ('Are your school grounds open for the children to play after school or in the weekend?') and then invited to participate in the full survey. Two hundred and fifty schools agreed to complete the full survey (64% response rate of those contacted, 54% response rate of all the schools listed). Our final sample reflected the decile distribution observed in Auckland schools, with one exception being slightly fewer decile 1 schools.

The survey focused on the use of school grounds and sports facilities by the community outside of school hours. The survey was set up using survey software Qualtrics and was administered by trained telephone interviewers with the school principal or a delegated staff member. Most of the schools surveyed have sports fields, outdoor courts and playgrounds (see Table 1 for details).

Of those who participated in the full survey, 17 low decile schools (i.e. decile 1–3) whose grounds were open for community use were re-contacted in August 2023 for a qualitative follow-up interview over the phone.

### *Measures*

Schools were asked whether their school grounds and/or sports facilities were open for community use outside of school hours, the times they were open (i.e. on weekdays

**Table 1.** Presence of recreational facilities ( $N = 250$ ).

School facilities	Yes (%)	No (%)
Sports fields	235 (94.0%)	16 (6.4%)
Outdoor courts (e.g. netball/volleyball)	232 (92.8%)	19 (7.6%)
Playground or climbing frames	244 (97.6%)	7 (2.8%)
An indoor hall used for sports	150 (60.0%)	100 (40.0%)

after school (between 4 and 8), on weekends, and/or during school holidays), and their capacity for more community use.

Schools with grounds open were asked to provide their main reasons for opening school grounds. Interviewers coded responses to the nearest response categories listed below: we are a community school/it's good for our children; our families want it open; good surveillance (natural or electronic); revenue from community bookings; support from the staff and/or Board of Trustees (BOT); no gate/no fence/not locked; other.

Schools with grounds closed were asked to provide their main reasons for closing school grounds. Interviewers coded responses to the nearest response categories listed below: vandalism / graffiti / theft concerns; wear and tear on school facilities and equipment; lack of, or cost of supervision; Health & Safety responsibilities; no community demand; security; have gate/fence/lock; other.

The information collected in the survey was used alongside a government directory of educational institutions and the 2018 Census. The Ministry of Education's directory of educational institutions ([data.govt.nz](https://data.govt.nz) 2020) is a comprehensive publicly available dataset and provided names and contact details of all schools and their principals; school decile levels (replaced by an equity index January 2023); ethnicity of students; school size (number of students); and the Census area unit (CAU) in which the school is located. The population densities of Auckland CAUs were calculated, and values assigned to the schools in the study database.

### **Data analysis**

Descriptive statistics were used to examine the schools with grounds open/closed for community use after hours and to analyse the reasons reported by schools for their policies around after-hours access to school grounds.

Logistic regression models were used to determine associations between school decile, population density, school size, ethnicity of the student population and whether school grounds were open or closed. Schools without missing values on those variables were included in the model. Analysis was undertaken using R version 4.3 (R Core Team 2023) and statistical significance was set at  $p = 0.05$ .

Thematic analysis was undertaken to understand the decisions given by the 17 low-decile schools that open their school grounds for community use outside school hours.

## **Results**

### **Description of schools with grounds open for after-hours community use**

Of the schools contacted ( $N = 391$ ), 203 schools (51.9%) reported their school grounds were open for community use outside of school hours. Of the schools who completed

**Table 2.** School ground open or closed.

School grounds	Open (%)	Close (%)
Of the total school contacted ( $N = 391$ )	203 (51.9%)	188 (48.1%)
Of the full-survey sample ( $N = 250$ )	149 (59.6%)	101 (40.4%)

**Table 3.** School size, population density and ethnic composition (of the full-survey sample).

	School grounds open ( <i>N</i> = 149)	School grounds closed ( <i>N</i> = 99)
Average school size	398	358
Population density	2.27/km <sup>2</sup>	3.09/km <sup>2</sup>
Percent Māori	15.3%	23.9%
Percent Pacific	10.8%	29.4%
Percent European	43.4%	22.0%

the full survey (*N* = 250), 149 (59.6%) had their grounds open, whereas 101 schools reported theirs were not (40.4%) (Table 2).

The full-survey sample showed that, for the 149 schools that opened their school grounds, the average school size was 398 students, the ethnic composition (averaged) was 15.3% Māori, 10.8% Pacific and 43.4% European, and the mean CAU population density was 2.27/km<sup>2</sup> (see Table 3).

Of the schools with grounds open after school hours, almost half (42.5%) were decile 9 and 10 schools, while only 6.8% were decile 1 and 2 schools. On the other hand, of the schools with grounds closed, almost half (42.3%) were decile 1 and 2, while only 12.4% were decile 9 and 10 schools (see Table 4 and Figure 1).

Of those schools with outdoor facilities open for community use (*n* = 148), over 95% were open for all three time periods—weekdays after school, on weekends and during school holidays. Of the schools with indoor facilities (*n* = 90), less than 15% of these were open outside school hours for informal play or formal sports activities.

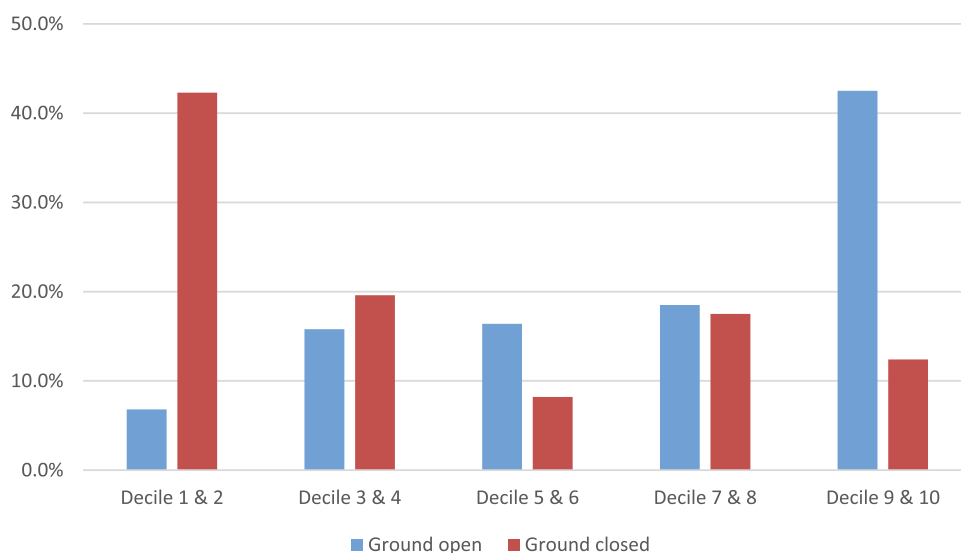
### **Reasons for open/closed school grounds**

Schools with grounds open for community use indicated the response option ‘we are a community school/it’s good for our children’ (77.7%) as the main reason for opening their school grounds (see Table 3). Almost 12% of the schools had their grounds open by default as they had no gate, fence or were not locked. About 4% of the schools opened their grounds because ‘our families want it open’. None of the decile 1 and 2 schools chose ‘our families want it open’ as their main reasons (Table 5).

The three most common response options selected by schools for closing their school grounds were: ‘vandalism / graffiti / theft concerns’ (44.6%); ‘health & safety responsibilities’ (22.8%) and ‘wear and tear on school facilities and equipment’ (20.8%). None of the decile 9 and 10 schools chose ‘vandalism / graffiti / theft concerns’ or ‘security’ as their main reasons for closing their school grounds (Table 6).

**Table 4.** School grounds open or not by decile.

School decile	School grounds open ( <i>N</i> = 146)	School grounds closed ( <i>N</i> = 97)
1 & 2	10 (6.8%)	41 (42.3%)
3 & 4	23 (15.8%)	19 (19.6%)
5 & 6	24 (16.4%)	8 (8.2%)
7 & 8	27 (18.5%)	17 (17.5%)
9 & 10	62 (42.5%)	12 (12.4%)



**Figure 1.** School decile and ground open/close.

### **Capacity for more community use**

Sixty-seven of the 149 schools (45.0%) that were open outside school hours indicated they had capacity for more use of their outdoor sports facilities for formal sports activities (see Table 7), with sports fields having the most available capacity. However, 32 of these 67 schools (47.8%) also indicated they would require financial support to make the facilities available for additional formal sports activities.

### **Key factors influencing school grounds remaining open**

Logistic regression modelling on the full-survey sample was undertaken to determine associations between whether school grounds were open or closed and school decile,

**Table 5.** Reasons for open school grounds.

Main reasons (multiple choice, $n = 148$ )	Yes (%)
We are a community school/it's good for our children	77.7%
Good surveillance (natural or electronic)	12.2%
No gate/no fence/not locked	11.5%
Our families want it open	4.1%
Revenue from community bookings	0.7%
Support from the staff and/or BOT	0.7%

**Table 6.** Reasons for closing school grounds.

Main reasons (multiple choice, $n = 101$ )	Yes (%)
Vandalism/graffiti/theft concerns	44.6%
Health & Safety responsibilities	22.8%
Wear and tear on school facilities and equipment	20.8%
Lack of, or cost of, supervision	8.9%
Security	8.9%
Have gate/fence/lock	6.9%
No community demand	5.0%

**Table 7.** Capacity for more use for formal sports activities ( $N = 67$ ).

School facilities	Yes (%)
Sports fields	89.6%
Outdoor courts (e.g. netball/volleyball)	52.2%
Playground or climbing frames	16.4%

**Table 8.** School grounds open for wider community use.

	Estimate	Standard error	z	p
Intercept	-0.38	0.45	-0.84	0.401
School Decile	0.29	0.05	5.33	< <b>0.001</b>
School Size	0.00	0.00	-0.54	0.592
Population Density	-0.25	0.11	-2.35	<b>0.019</b>

school size, ethnicity of the student population and CAU population density. After examining the correlation between variables, ethnicity was removed from the final regression model as there was high correlation between ethnicity and school decile ( $r = 0.78$ ).

Logistic analysis showed that the lower the population density ( $p = 0.019$ ) and the higher the school decile ( $p < 0.001$ ), the more likely school grounds were open for community use (Table 8).

### **Followup interviews with low-decile schools**

Seventeen low decile schools whose grounds were open for community use were contacted for a qualitative follow-up interview by one of the researchers to further understand their reason for keeping school grounds open out of hours.

The low decile schools whose grounds were completely accessible outside of school hours by choice (not by default), shared a similar commitment of involving their communities widely in school activities.

We encourage our community to be part of the school. It is a two-way street: having it open so they can use it, and them feeling part of it and taking care of it.

A common perception of interviewees was that community use decreases the levels of vandalism, although it does not always prevent it.

We[‘ve] ... redone the playgrounds, the courts, put in a bike track, replanting ... we’ve made it a place people would want to come. Students have been heavily involved, we’ve had open days, publicised it so the community could feel a sense of pride. ... we felt the more people came the more likely people wouldn’t vandalise ... and we have had a downturn in vandalism and fires ...

We have an adventure playground, a bike track, a fitness trail and a lot of the community use them ... a lot of our children don’t have back yards, a lot of families bring picnic blankets, cousins, grandchildren ... we do a lot of family days, so the community gets to see what the school is like ... it is a pride thing, they make sure the school gets looked after.

We include the community as much as possible (for example grandparent days), the hall is used most evenings and church groups in the weekend, there’s always someone shooting hoops. Occasionally when there is something suspicious or something has happened, the neighbours will get in touch ...

As well as making amenities available for community use, these interviewees spoke of generating pride in their school by inviting community members to events and activities on school grounds.

## Discussion

Our study shows that about 52% of the primary, contributing and intermediate schools in Auckland open their school grounds for community use. This is much lower than the figure reported for Wellington primary schools surveyed in 2016, where 93% allowed access to their school grounds outside school hours (Wellington City Council 2017).

Traditionally, there has been a tacit social contract between schools and their communities that positions school grounds as a community resource available for community use outside school hours. This is no longer the case in all communities, and change is occurring at a time when urban densification policies are reducing household access to private outdoor space, which increases the importance of neighbourhood access to public spaces. This is particularly so for children and young people, as play and physical activity are central to their wellbeing and healthy development.

Our study shows that school decile was the key factor determining whether school grounds were open or closed for public use. The higher the school decile, the more likely the school grounds were to be open for community use. In our study, 42.5% of the schools with their grounds open were decile 9 and 10 schools, whereas 42.3% of the schools with their grounds closed were decile 1 and 2 schools. This result is concerning as the study mentioned earlier (Carroll et al. 2015) found children attending low-decile schools take only one-quarter the number of trips per week for formal physical activities (such as team sports games or practice sessions) compared to children of the same age attending higher decile schools. Informal play opportunities close to home are therefore essential to enable these children to be physical active and to socialise with friends and family. With school grounds more likely to be closed in lower socio-economic areas than in higher socio-economic areas, the children most affected are the same group who have fewer opportunities for recreational trips beyond their immediate neighbourhood.

The most important reason schools gave for closing their grounds was ‘vandalism/graffiti/theft concerns’. It seems that for many schools, closing their grounds is a strategy to reduce damage. The second most important reason given for closing school grounds was concern for ‘health & safety responsibilities’. If schools are to be encouraged to re-open their grounds and facilities for community use, a nuanced understanding is required of how these factors play out and impact schools and their communities in different areas.

For the low decile schools that remained open by choice, one thing in common was their commitment to involve their community—encouraging the community to use the school grounds, to feel part of the school, and as a result, taking care of the school. They reported that problems of vandalism had decreased with the eyes of the community on the school and the more people using the school grounds, the fewer the incidents. This finding provides further evidence that neighbourhood connection and community closeness can contribute to neighbourhood safety through passive surveillance and casual monitoring. The steps taken by these schools may offer useful strategies to the schools that are currently closed.

The association of school grounds closure with higher population densities is also of concern unless there is a corresponding increase in non-school-based public spaces in those parts of the city undergoing densification. Partnership funding between schools, local government and other agencies may be a pathway forward for retaining children's access to what are ideal outdoor play spaces close to their homes.

Sports grounds across Auckland are heavily used, especially during weekends, and school grounds could potentially increase the number and range of venues for formal sporting activities. Of the schools completing the survey that were open for community use, 67 indicated their school outdoor sports facilities could be used for formal sports activities, with 32 of these schools indicating they would require support to make their facilities available for additional formal sports activities. This may be of interest to agencies who could partner with schools to increase the provision of recreational amenities. Opening schools to formal sports and other activities is a useful strategy for bringing community members into a school and increasing the casual surveillance that comes with a watching community eye.

The survey of schools, which began in 2021 and was completed in early 2022, was interrupted by the Auckland COVID lockdowns. The later post-lockdown period was particularly challenging for many schools as they tried to re-establish school routines and build the level of student attendance. Thus, the survey response rate and completion rate are likely to have been affected by the timing of the survey and the disruption caused by the COVID pandemic. Notwithstanding the difficult timing of the survey, we contacted 391 schools in Auckland and 250 schools participated in the full survey.

## Conclusion

The association of school grounds closure with lower school decile and higher population densities is concerning as children in those schools are the same children who have fewer opportunities and less spaces for active play elsewhere. The main reason schools gave for closing their grounds was 'vandalism /graffiti/theft concerns'. Helping schools to establish stronger community involvement and hence greater casual/passive surveillance, may be a promising start to deal with these concerns.

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