



Evaluation of the national 'Push Play' campaign in New Zealand – creating population awareness of physical activity

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Abstract

Aims Physical inactivity is considered to be as detrimental to public health as hypertension or tobacco use, but there is limited evidence on the impact of community-wide interventions in this area. This paper describes the impact of an initiative to increase physical activity at a population level in New Zealand.

Methods A media-led, community-wide intervention campaign was initiated by the Hillary Commission (now SPARC, Sport and Recreation New Zealand). The 'Push Play' campaign recommended 30 minutes of daily, moderate-intensity physical activity as fun, part of community life, and easy to achieve for New Zealand adults. In addition, there were community-level and primary care supporting programmes and events. Annual cross-sectional population surveys (1999–2002) monitored the impact of the campaign on message awareness, recognition of the Push Play logo, intention to be active, and recent activity.

Results There were substantial increases in awareness of the Push Play message (30% in 1999 to 57% in 2002, $p < 0.001$), and of the Push Play logo (14% to 52%, $p < 0.001$). There were significant increases in the numbers of adults who intended to be more active (1.8% in 1999 to 9.4% in 2002). No sustained changes in physical activity levels were seen in these Push Play serial evaluation surveys, with 38.6% of the 1999 sample reporting 5+ days activity per week, increasing to 44.5% in 2000, but declining to 38.0% in 2002. The only significant difference in physical activity levels occurred from 1999 to 2000 (difference 5.8%, 95% CI 0.1%–11.6%). In an unrelated, much larger population survey, a 3% increase in physical activity participation was noted among adults between 1997 and 2001.

Conclusions The national Push Play campaign resulted in increases in message recognition and in intention to become more active. If sustained, efforts like this may have a long-term impact on adult activity patterns, leading to improved health outcomes and reduced health costs.

Efforts to increase rates of physical activity are now seen to be just as important to population health as those to reduce blood pressure or control tobacco use.^{1,2} A recent report suggested that the population risk attributable to inactivity ranked second to smoking among all preventable factors for New Zealanders, and was associated with 8% of deaths.³ The most recent epidemiological data suggest that it is regular, moderate-intensity physical activity, not only vigorous activity, that confers most of the health benefits for coronary heart disease and diabetes prevention, and for hypertension control. Efforts to increase energy expenditure (as well as reduce energy intake) are also required to stem the increasing population rates of obesity seen in New Zealand and elsewhere.⁴

In New Zealand, efforts to address population levels of inactivity have begun, with the establishment in 1998 of a national Physical Activity Taskforce.⁵ The key population recommendation was for adults to 'accumulate at least 30 minutes of physical activity on most, if not all, days of the week'. The Taskforce recommended multi-sectoral strategies to increase physical activity, one of which was to conduct a national media campaign to raise awareness of these new guidelines. The Hillary Commission (now SPARC, Sport and Recreation New Zealand) adopted this recommendation, and implemented the 'Push Play' campaign. This paper describes the impact of the first four years of this initiative on proximal outcomes including campaign recognition, understanding, and attitudes. Effort has also been made to examine the more distal outcomes of contemplating and trialling the behaviour of being more physically active.

Methods

Campaign development The campaign was developed and focus tested in 1999 through consultation with numerous population groups. The aim was to model incidental and everyday forms of physical activity, through the portrayal of ordinary New Zealanders. The main objective was to increase awareness of the benefits of physical activity and to encourage people to think about becoming more physically active. The messages used humour and illustrated people having fun and enjoying various forms of activity, including playing with their families, using the stairs, mowing the lawn and walking the dog. The campaign targeted all adults, particularly the middle aged, and males (30–54 years) across New Zealand.

The campaign The 'Push Play' campaign was launched in 1999 with two fifteen-second silent commercials that showed a person in sedentary pose with signal distortion lines across the screen and a written message 'Do not adjust your set, adjust your life' (Phase 1a). These were followed by a longer message showing a variety of New Zealanders making choices to include physical activity in their lives (Phase 1b). One image that gained particular attention was a large man walking a pig on a leash. The consistent campaign logo was 'Push Play' with the green play button logo modelled on a 'play' button of a video recorder, suggesting people make a start to become more active. Each activity reflected a part of daily life, but showed an exercise title that could be associated with it, such as 'aerobics' for a group of Tongan women dancing and 'weightlifting' for a man picking up his children. In 2001, the campaign featured new commercials that built on previous ones (for instance, the man was now rowing a boat with the pig in the back of the boat) and had the message 'Push Play 30 minutes a day'. 'Push Play' is a social marketing 'brand', designed to reflect positive values of being upbeat, fresh and clean, fun, Kiwi, and family based, and recommending lifestyle physical activity. The overall campaign design, development and implementation had an approximate total budget of \$3 million over the four years 1999 to 2002.

The Hillary Commission and, more recently, SPARC coordinated the campaign, which comprised major media, as well as specific resources and merchandising supporting the campaign. In major cities there were Push Play billboards, and, nationally, there were radio elements, magazine promotions, and a national Push Play Day celebrated 9 November 2001 and 2002.

Other national programmes were implemented under the umbrella of Push Play. These included the Green Prescription Scheme (since 1999) and He Oranga Poutama, a programme encouraging healthy, active lifestyles for Maori (since 1997). The Green Prescription Scheme involves general practitioners with the support of practice nurses, and encourages GPs to use a green prescription (written/verbal advice) to motivate patients to be more physically active. Patients are offered motivational support and access to programmes through regional sports trusts (RSTs). The geographically diverse RSTs worked with local public health agencies and non-government providers around local events, including Push Play Day. The Maori-specific programme, He Oranga Poutama, is delivered by kaiwhakahaere (coordinators) usually based within RSTs, and comprises sport and physical activities, including many traditional and culturally relevant Maori activities centred around the marae.

Evaluation design, measurement and analysis Serial cross-sectional, population-based household surveys were used to assess the impact of Push Play. These are summarised in Table 1, which shows the specific Push Play messages used, the survey samples and the timing of surveys. The household surveys employed population sampling techniques, covering the 26 main urban areas, with 55 random

start points being selected with a pre-set cluster of 9 to 10 interviews to be completed at each. An adult aged 18 years or above within each household was chosen (using the 'adult with the last birthday' to sample an individual within a household). The first survey was nested within the New Zealand Sport and Physical Activity Survey conducted by the Hillary Commission,⁶ and subsequent surveys were stand-alone household interviews. Response rates ranged from 64% to 70% across surveys. In addition, process evaluation data are shown in Table 1, which indicate the approximate media penetration, based on media marketing estimates of the number of times people are likely to have seen a particular message. For each phase, there were sufficient media purchased to reach almost all adults at least once, and for them to have seen a Push Play message approximately five to eight times. This suggests sufficient implementation of the mass media element of the campaign.⁷

Table 1. Phases of the Push Play (PP) campaign and their evaluation

Year/ phase	Main media elements (month, year)	Supportive activities	Percentage who saw at least one message and mean number seen	Population surveys sample size and timing
1999 Phase 1a Phase 1b	Teaser ads Mar–Apr 99; Main PPI messages May 99 and Sep– Nov 99	Minimal	1a: 87% of target audience reached at least once, mean 7.8 times 1b: 78% reached at least once, mean 7.4 times	n = 665 randomly sampled adults 18+ years Survey in two halves May and June 1999
2000 Phase 2	PPI ad 'dog walking/pig walking' message Jan–Feb, Apr, Sep– Nov 00	Ancillary events and additional components throughout year	88% of target audience reached at least once	n = 506 adults 18+ years May 2000
2001 Phase 3	PPII message with Pacific aerobics/pig in boat Jan–Apr, Sep–Nov 01	Ancillary events Jan–Feb, Nov– Dec 01 Push Play Day 9 Nov	61% reached at least once, mean 4.9 times	n = 504 adults 18+ years February 2001
2002 Phase 4	PPII ad repeated Jan–Apr, Nov 02	Ancillary events Jan–Feb 02 Push Play Day 9 Nov	84% reached at least once, mean 6.8 times	n = 507 adults 18+ years March 2002

In measuring the impact of media campaigns, the most important initial elements are to establish community awareness of the campaign, understanding of the message, and specific 'tagline' or logo recognition.^{8,9} These are proximal or immediate effects specifically of the advertising elements of the campaign. These were measured using standard questions for media campaign evaluations, including whether respondents had seen 'any message on TV about getting more active', whether they specifically recalled the Push Play advertisement (prompted recall), whether they recalled the Push Play logo, the green 'play' button, and whether they liked the media messages they had seen (scored on a five-point Likert scale, from 'love it' to 'hate it'). Open-ended questions were asked to clarify exactly what had been seen or recalled. A summary 'positive exposure' measure was constructed from the responses of those who had seen a message, had seen Push Play, recognised the logo, and liked the message.

The next levels of measurement included what respondents had thought or done in response to the campaign.⁸ These were divided into two categories: (1) responses that related to intending to or preparing to get more active (thought about, talked about or started getting more active in response to the messages); and (2) responses that involved contacting an organisation (phoned 0800 number, contacted an RST, contacted another organisation or visited web site). Finally, respondents were asked the number of days in the previous week that they were physically active for at least 30 minutes; responses were categorised into those reporting less than or at least 5 days in the past week.

Analyses were performed of sample data weighted to the New Zealand adult population, and then reduced to effective sample sizes of 665, 506, 504 and 507 in each year (Tables 1 and 2). Analyses used SPSS 10.0, and included contingency and multi-way table analysis, and forced entry logistic regression to calculate adjusted odds ratios. Chi-square analyses and z-tests were used to measure the difference between independent proportions.

Table 2. Demographic data (unweighted) from each evaluation survey

Demographic variables	1999 % (n = 665)	2000 % (n = 506)	2001 % (n = 504)	2002 % (n = 507)
Male	45.9	50.2	50.0	49.3
Aged 34 years and younger	31.2	33.0	33.7	33.5
Ethnicity:				
European	76.8	83.8	77.0	77.1
Maori/Pacific Island	19.5	10.7	15.7	18.2
Other	3.6	5.5	7.3	4.8
Active 5 or more days per week (%)	37.6	44.2	39.7	37.9

Results

The demographic data in the unweighted survey samples are shown in Table 2. There were slightly fewer males in the 1999 survey (not significant). There were some ethnic-group differences in the samples, with more European respondents in 2000, and more Maori in the 1999 sample ($p < 0.001$).

Table 3. Impact of Push Play (PP) on proximal outcomes*

Proximal outcome	1999	2000	2001	2002
Seen any advertisement about PP				
%	49.5	65.4	65.2	59.6
adjusted OR (95% CI) [†]	1.0	1.92 (1.51–2.45)	1.88 (1.48–2.40)	1.49 (1.17–1.89)
Seen specific PP message				
%	29.8	55.2	66.0	57.2
adjusted OR (95% CI) [†]	1.0	3.15 (2.46–4.03)	4.87 (3.78–6.28)	3.43 (2.68–4.40)
Recognised PP logo				
%	13.5	37.6	47.2	52.0
adjusted OR (95% CI) [†]	1.0	3.70 (2.78–4.73)	5.55 (4.18–7.38)	6.85 (5.15–9.12)
Liked PP message (of those who saw it)				
%	56.0	72.5	75.0	63.0
adjusted OR (95% CI) [†]	1.0	2.15 (1.44–3.21)	2.24 (1.52–3.29)	1.30 (0.89–1.91)
Summary 'maximal positive exposure'^{*‡}				
%	2.4	18.6	24.0	21.7
adjusted OR (95% CI) [†]	1.0	9.87 (5.63–17.30)	14.89 (8.57–25.86)	12.47 (7.14–21.79)

* proximal outcomes are those influenced early by mass communications and messages,^{24,25} and are: awareness of the generic and specific message, campaign recognition, and perceptions of the campaign; [†]adjusted for age, sex, cultural group (European versus others); [‡]percentage of the total who saw any message, recognised specific Push Play messages and the logo and liked them. NB samples were smaller than the totals in Table 2; 1–2% of data were missing for combined variables in these adjusted models.

Table 3 shows the impact of the campaign on proximal variables. There was a significant increase in awareness of any advertisement or message about physical activity after adjustment for the influence of confounding demographic differences, with between a 1.5 and twofold increase in awareness in 2000 onwards, compared with 1999. Specifically, Push Play recognition was three to four times as likely from 2000 onwards compared with 1999 levels. Overall, rates of recall of any physical activity message were similar for Maori and European New Zealanders, and similar by gender. For the Push Play logo, recognition increased from 13.5% in 1999 to 52% in 2002, with a consistent increment in recognition each year. Between half and three quarters of those who had seen the message reported that they liked it ('liked it' or 'loved it' responses), with only slight differences between 1999 and subsequent years, reaching significance only for the comparison between 2001 and 1999. A summary of the maximal positive exposure to all facets of the communication is shown in the far right-hand column of Table 3; it demonstrates a nine- to fourteen-fold increase in 'exposure' to the campaign in all years compared with 1999.

The more distal outcomes were categorised in two ways, by 'intention to be more active' (thought about it, talked about it and trialled activity), and organised sport responses (including contacting an RST, other organisation, web site or calling the 0800 phone number), Table 4. Combining all four survey samples, intention to be more active consisted of the 4% who thought about being more active; 1.2% talked about it, and 2.0% started to increase their activity levels. Comparing across the four survey years, the proportion of adult New Zealanders who 'thought about being more active' increased significantly (1.1%, 6.1%, 6.0%, 3.9% $p < 0.001$), as did those who started being more active (0.5%, 2.0%, 3.1%, 3.2%, $p < 0.01$), with no significant increase in those talking about it (0.5%, 1.6%, 1.2%, 2.0% respectively). Overall, only 0.1% of survey responders called an 0800 telephone number, 0.1% contacted a sports trust, and less than 0.1% of those sampled reported they had contacted another organisation or accessed the web site. Data were pooled into the two categories, 'intention' and 'accessed an organisation (organised sport)', and are shown in Table 4. There was a significant increase from 1.8% to 9.0% of 'any intention to be more active' between 1999 and 2000, with levels remaining at around 10% of New Zealanders thereafter (Table 4). There were much lower rates of respondents who contacted an organisation, and adjusted odds ratios were not estimated (as the reference year, 1999, had zero responses). Physical activity levels, as measured by 5+ active days in the past week, showed a slight and significant increase only between 1999 and 2000 (Table 4).

Table 4. Impact of Push Play on distal outcomes*

Distal outcome	1999	2000	2001	2002
Intend to be more active[†]				
%	1.8	9.0	10.8	9.4
adjusted OR (95% CI) [‡]	1.0	5.83 (3.05–11.18)	6.09 (3.19–11.61)	5.37 (2.79–10.32)
Organised sport response[§]				
%	0	0.2	0.2	0.8
adjusted OR (95% CI) [‡]	n/a	n/a	n/a	n/a
Days active: 5+ / week				
%	38.6	44.5	40.8	8.0
adjusted OR (95% CI) [‡]	1.0	1.32 (1.05–1.68)	1.10 (0.87–1.40)	1.03 (0.81–1.31)

*those in the later stages of a population change process – intention to be more active and actual physical activity behaviour

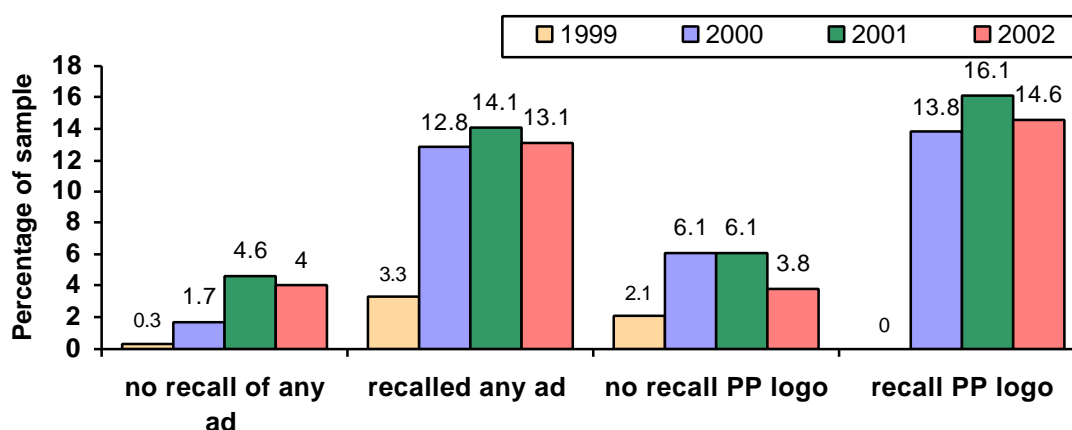
[†]talked about being more active, thought about it, tried to be more active

[‡]adjusted for age, sex, cultural group (European versus others)

[§]called 0800 number or contacted RST or other sports organisation

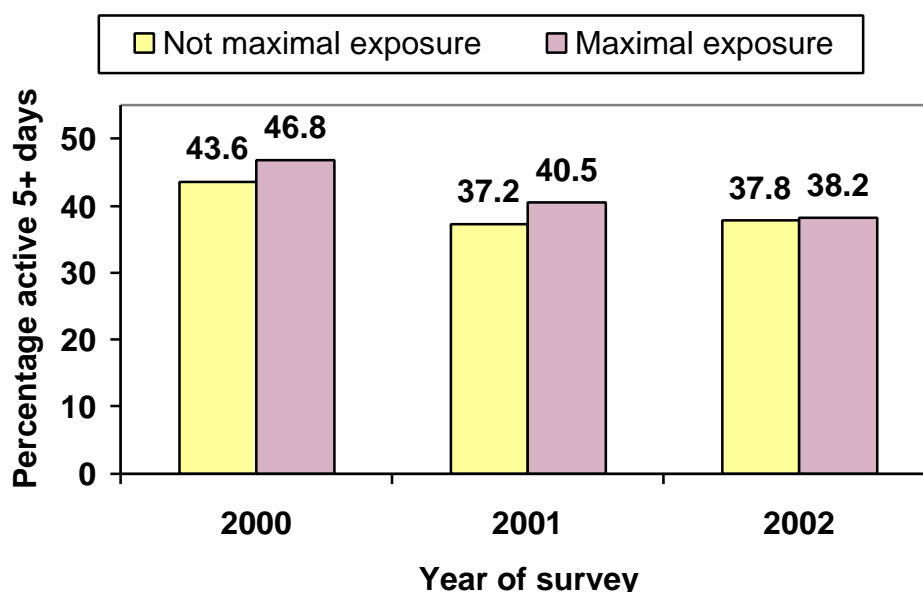
Data were stratified by generic message recall (any advertisement recalled) and specific Push Play logo recall, and examined in relation to any intention and physical activity days per week (Figures 1 and 2). There was a significant increase in intention among those who recalled any message, or the Push Play logo specifically, for data from 2000 to 2002. Overall, adjusting for year, age, gender and ethnicity, those who had seen any message were over four times as likely (adjusted OR 4.27, 95% CI 2.59–7.02), and those who recognised the Push Play logo nearly three times as likely (adjusted OR 2.71, 95% CI 1.89–3.86), to think about being/intend to be/start to be more active (Figure 1). Further, those who were in the maximal campaign exposure group were much more likely to intend to be more active than those with lesser degrees of Push Play exposure (24.5% compared with 4.2%, adjusted OR 5.53, 95% CI 3.87–7.93).

Figure 1. Intention to be more active stratified by message exposure



An exploration of those who had maximal campaign exposure and physical activity on at least five days per week is shown in Figure 2, confined to the 2000 to 2002 surveys. Although there were consistent slightly greater proportions in the exposed categories, these were not significant. For 2000 data, these proportions were 46.8% active in the exposed group, compared with 43.6% in the unexposed; this difference (3.2%) was not significant (95% CI -7.6% to 14.3%). The power of the sample size available here was 0.4, and a threefold increase in sample size would be required to detect this as statistically different.

Figure 2. Active 5+ days stratified by maximal campaign ‘exposure’* across each survey year[†]



*ie, saw any message and recognised the specific Push Play message and the logo and liked them

[†]data from 1999 excluded, as maximal exposure reported by 16 people only (spuriously, in 1999 pre-campaign)

Discussion

The Push Play initiative increased awareness of physical activity and intention to be active among adults in New Zealand. This innovative campaign used culturally salient messaging, and, through the use of social marketing principles, packaged the messages, events and programmes under the ‘Push Play’ brand. There was consistent and increasing recognition of this ‘brand’ of physical activity, which represented the 30-minute physical activity message that physical activity is fun, and had a clear ‘Kiwi’ orientation. The impact of this intervention was at least as great as recent campaigns in Australia and Scotland^{9,10} and greater than efforts elsewhere.^{11,12}

The campaign provided a generic message to all adults to consider enjoyable, lifestyle-related forms of physical activity as contributing to fun, a sense of community, and to their health. The campaign had an impact on non-organised activity and recreation (as measured through the intention variable) rather than

directly increasing population access to organised services. In recent years, rates of sporting club membership and organised team participation have fallen.¹³ These changes reinforce the ongoing public health importance of the concepts of active living and active recreation, which are central emphases of Push Play.

Social marketing campaigns need to develop a clear 'brand' of behaviour or attitude of interest, and need to be sustained over many years to achieve culture change.^{12,24,25} This is important in efforts to change sedentary lifestyles. The required behaviour change is multi-faceted, and the reinforcement of sedentary modern living poses an additional challenge. Many Canadian physical activity and recreation campaigns were conducted under the brand of 'Participation' between 1971 and 1999,¹⁴ and are still recalled by almost 90% of all Canadians. It will take much longer than the brief public education campaigns in Australia⁹ and the United Kingdom¹¹ to achieve long-term influence on community understanding, message awareness and 'brand' recognition. Push Play fostered this awareness, and even influenced the proportion of adults who thought about, talked about or started getting more active.

The Push Play initiative reached most population groups for the outcomes assessed. Another study examined a small, selected sample of 69 New Zealand adults, and showed that those already meeting the physical activity and nutrition guidelines did not always recognise public health messages and guidelines, and obtained health information from other sources.¹⁵ Nonetheless, for hard-to-reach sedentary and socially disadvantaged groups, physical-activity-related mass media campaigns appear effective in message dissemination.^{10,16}

Despite a clear impact upon the antecedent variables, the campaign evaluation did not detect sustained shifts in physical activity behaviour (although this was not a key goal given that it was an awareness campaign), as measured by the proportion achieving five days per week of 30 minutes of moderate-intensity physical activity. This was not surprising for a number of reasons. First, the measure of physical activity was a single question, rather than a developed set of questions to reflect behaviour. Second, media campaigns may not influence behaviour directly and immediately, and acute increases at the population level are unusual for complex behaviours.¹² Nonetheless, serial epidemiological surveys, using detailed questions, and including large samples (n = 12 000) carried out by the Hillary Commission and SPARC between 1997 and 2001 have shown a 3% increase in the proportion of adults who are active for at least 150 minutes per week (approximate 95% CI 1.7–4.2%),¹³ which does suggest that adult New Zealanders are becoming significantly more active. This trend in New Zealand is contrary to recent trend data from Australia and the United Kingdom, which have shown declines in adult physical activity participation,^{17,18} and United States and Canadian data, which have shown no change in activity prevalence in recent years.^{19,20} The link between the Push Play campaign and these trends is not definitively causal, although the evidence for impact upon proximal variables and intention is reasonably strong. It is recognised that media elements need to be sustained and to be combined with health-professional training, and with community events and resources in order to achieve population behaviour change.²¹ The overall initiative in New Zealand met these criteria for an integrated campaign, and was noteworthy in that it was mostly sustained by the Hillary Commission/SPARC, which are outside the mainstream health sector.

There were some methodological limitations in the evaluation of this initiative. First, the sampling in 1999 was not a true pre-campaign measure, and reflected awareness of some of the initial Push Play messaging. Subsequent increases in awareness and recall suggested that there was continued building on these 1999 levels, so actual campaign effects, had there been a true pre-campaign survey, are likely to have been even greater. Second, the survey sampling methods were slightly different for 2000 and subsequent surveys, but these demographic differences were controlled for in analysis. Third, all surveys were only of around 500 to 600 respondents, which may have led to reduced power to detect some changes. Finally, the measures used were standard for media campaign evaluation, but the physical activity question was only a single item; trends in physical activity rates were better demonstrated in the larger, representative epidemiological surveys conducted by SPARC.¹³ The single question, as an imperfect measure, may underestimate true effects (in relation to associations with campaign exposure, or in terms of change), and this measurement error may have led to an underestimation of the extent of the effect of the campaign on activity outcomes.²⁶

The Push Play initiative had been developed with an initial private-sector partnership with funding from an electricity company, and recognition in the media messages of that funding. Sponsor logo recall rates were low in 1999 and 2000 (10–14%)²² and the private-sector sponsorship was not maintained beyond 2000. The initiative was more strongly linked to the New Zealand Government, Hillary Commission/SPARC or to health agencies. Another social advertising initiative (conducted by Roche Pharmaceuticals in 2001 and 2002, to promote a weight-loss agent, XENICAL) also developed a media campaign (also using humour), and was confused with Push Play by some responders to our surveys, who referred to the content of the XENICAL ads. Consistent increases specifically in the Push Play ‘brand recognition’ suggest that these extraneous campaigns and other factors did not substantially influence the consistent increase in Push Play awareness.

The total cost of the media campaign over the four years amounts to approximately \$3 million. This includes development of the messages, filming, management of the campaign by the advertising company, placement of the messages in the media, and other supportive events. Substantial in-kind support was provided by the RSTs and other collaborating agencies. The Push Play campaign had a relatively modest budget when compared with other New Zealand social marketing campaigns such as tobacco control and road safety, which have budgets approximately three and ten times as large per annum respectively. Further, both these campaigns in New Zealand have a 20-year history of concerted intervention, campaigning, and environmental change, eventually resulting in noteworthy public health gains.²³ Compared with that level of investment and public health effort, attempts to reduce obesity and increase physical activity are at an early stage.

In conclusion, Push Play is an example of effective use of the mass media in setting the agenda for community change.²⁴ A key element of its success has been the supportive role played by community programmes, GP education, and regional events. The World Health Organization suggests that effective campaigns need to be sustained over many years and to reinforce messages many times to the community, as well as target specific populations.²⁵ Ongoing efforts, under the established umbrella of Push Play, are likely to further increase rates of physical activity among

adult New Zealanders and reduce the population morbidity and mortality attributable to sedentary lifestyles.

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