

### Outline of the issue

The public health burden of sedentary living is well established. Large-scale epidemiological studies have demonstrated beneficial effects of physical activity in terms of reductions in all-cause mortality, coronary heart disease, and diabetes. In particular, evidence suggests that physical activity plays an important role in the general health status of women. Among women, physical activity has been found to reduce the risk of cardiovascular disease, hypertension, hyperlipidemia, breast and colon cancer, type II diabetes, osteoporosis and hip fracture, and premenstrual syndrome, dysmenorrhoea and menopause-related symptoms. Physical activity is also associated with enhanced psychological well being, which is particularly important for women, since depression and psychological distress are more commonly reported by women than men. The isolated and housebound lifestyles of many women with young children have been suggested as major contributing factors to their widespread experience of tiredness and depression.

Despite the health benefits associated with regular participation in physical activity, women of all ages have been found to be less physically active than men of the same age. Data from the Australian Longitudinal Study of Women's Health indicate that young women (18-22 years old) with children are particularly unlikely to be adequately active. Less than half (46%) of this group of women engaged in adequate physical activity compared with 56% of women without children.

To date, many interventions designed to change physical activity behaviour have achieved little or moderate success, especially among the less motivated. Community intervention trials have revealed some potential for large-scale physical activity behaviour change. However, the effectiveness of community-wide physical activity interventions may be reliant on engaging the community and allowing flexibility of the intervention in response to community priorities, in contrast to the prescriptive nature of past attempts. Targeting multiple levels of influence has also been demonstrated as an effective approach, although inadequate evaluation methods have made it difficult to disentangle the influence of individual components, as well as increase the cost-effectiveness for large scale implementation of proven strategies. To better understand how different components of these interventions are translated into behaviour change, it is

essential to determine which behavioural constructs mediate changes in physical activity behaviour, to develop strategies that specifically address these mediators, and to adequately evaluate their role in any behaviour change resulting from the intervention.

### Target group

The ProActive Mums Project was designed to target women with children under school age who were utilising childcare services in the Newcastle region, NSW.

### Project overview

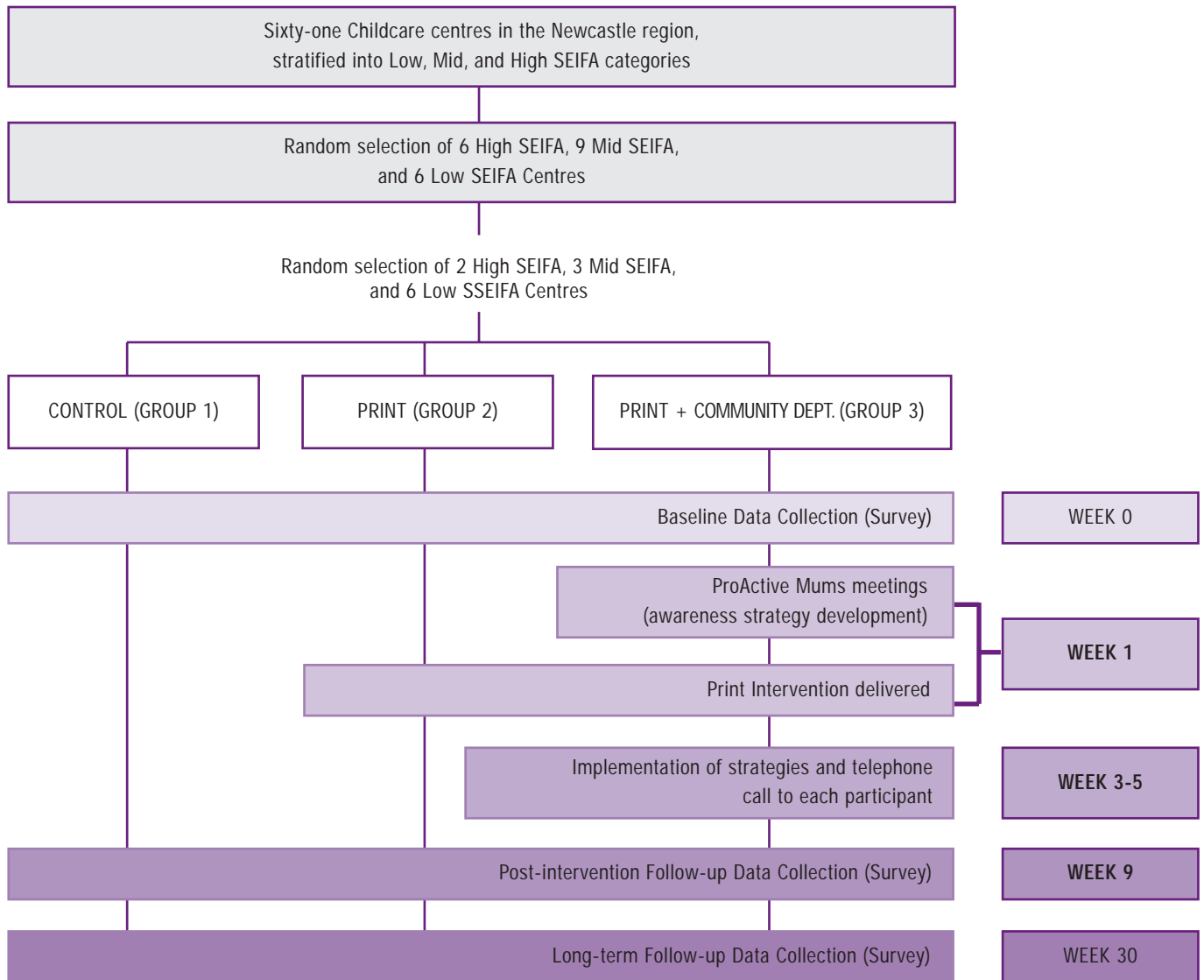
This project intended to identify potentially important mediators of physical activity behaviour change among women with young children, and develop strategies to address them through community engagement. The major aims of the study were to:

Determine the efficacy (compared with no-intervention comparisons) of two strategies which aimed to increase physical activity among women with young children (community-level intervention compared with a print intervention based on the current literature regarding PA constraints in this group).

To establish the mediators of any resulting change in physical activity behaviour.

The project used a randomised (after stratification to ensure even representation of childcare centres (CCCs) from differing socio-economic areas) controlled design incorporating repeated data collection from women in three groups, each consisting of seven CCCs. The overall project design is shown in Figure 1 on the next page.

Baseline surveys were completed by 554 mothers, with follow-up data collection immediately post-intervention (8 weeks after baseline) and again five months later. Women from CCCs in Group 1 (control) received only the surveys throughout the duration of the project. Women from CCCs in Group 2 (information only) were given a print intervention, and women from CCCs in Group 3 were (in addition to being given the same print intervention as women from CCCs in Group 2) invited to contribute to the development of, and participate in, strategies for the promotion of PA among mothers of young children. The two intervention strategies were extensively evaluated through a series of surveys and



**Figure 1.** Flow diagram representation of the ProActive Mums Project

interviews. Changes in PA, self-efficacy (SE), and perceived partner support (PS) among women in Group 3 were evaluated in comparison with those of the minimal print intervention (Group 2) and control group (Group 1).

**Partners involved**

Successful implementation of the strategies involved in the ProActive Mums project was reliant upon partnerships with participating CCCs in the local Newcastle region. Useful links were also established with the New South Wales Department of Sport and Recreation, and contacts were made with key stakeholders in the community, including managers of sporting and recreation facilities, childcare service providers, and local councils.

**Project strategies**

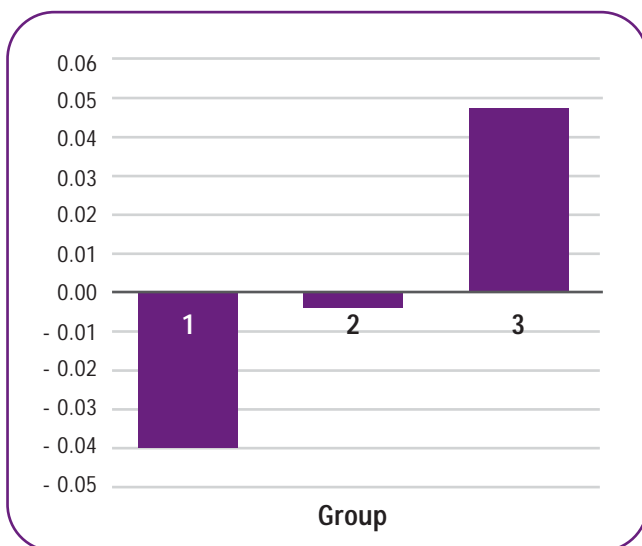
The print intervention prescribed for women from CCCs in Group 2 and Group 3 consisted of an 8-page booklet containing motivational messages and information about physical activity. The booklet emphasised the importance of PA, and included strategies for overcoming barriers specific to mothers of young children. Many of the messages it contained were consistent with current Active Australia messages and recommendations.

Women from CCCs in Group 3 were invited to attend meetings at their CCC to identify strategies for increasing PA among women with young children. These meetings were considered to be the initial stages of the intervention itself, since participants met each other and developed some shared goals and support networks during this process.

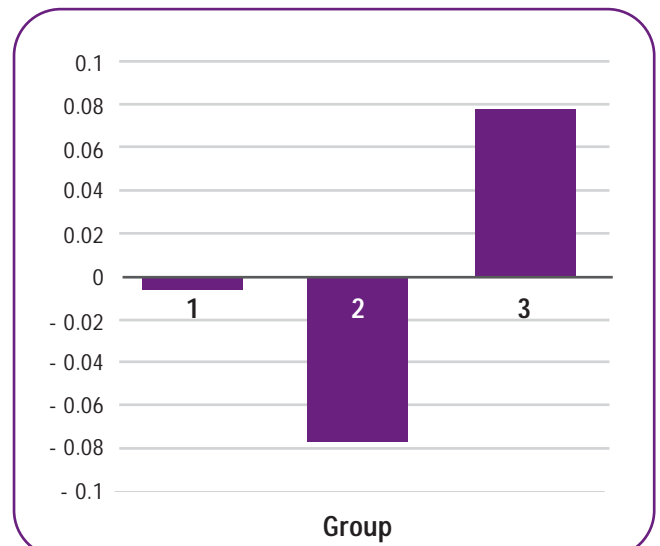
### The intervention

A wide range of strategies was developed during the intervention phase of the project, which specifically focused on the need to increase partner support and self-efficacy (or the confidence to be physically active). The strategies developed were implemented through collaboration between participants, researchers, and community organisations, and included:

- Development of sustainable infrastructure to allow for communication of ideas and social support among mothers in each CCC (for example, notice boards placed in CCCs and used by women to exchange information about local opportunities for physical activity and contact details).
- Lobbying for additional information regarding childcare facilities to be included on the existing Department of Sport and Recreation database of local physical activity providers.
- Development and distribution of a PA directory which suggested avenues for accessing more information about active leisure opportunities in the local community.
- Collaboration with key stakeholders in the local communities to improve the provision of childcare, and to make target-group-directed changes in the scheduling of physical activity classes at a number of local sporting facilities (for example, scheduling aqua-aerobics classes at the same time as children's learn-to-swim classes).
- Organizing a number of 'mum-friendly' aerobics classes that specifically addressed the needs of the target group. This included negotiating the use of community facilities (such as school halls) and the services of supportive fitness instructors, with minimal cost to mothers and adequate childcare arrangements.
- Strategies that addressed the women's perception of a need for greater support from their partner to enable them to be physically active. Project staff assisted women in organising family events, such as barbecues or children's discos at which partners cared for the children while women participated in physical activity, or where whole families were active together. These events also allowed opportunities for extensive discussion about the need for women with young children to have time available for physical activity, and for discussion of examples of instrumental support for physical activity that could be provided by their partners (eg providing childcare or being more flexible regarding their own leisure plans).
- Individual strategies developed by women as a direct result of being placed in a situation where they could interact and develop links, such as walking groups that met immediately after delivering children to the childcare centre. Women also shared knowledge of existing services in the local area, and many active women invited other mothers to join them in their activities, such as a tennis group in which women rotated playing tennis and child minding.



**Figure 2.** Residual change in self-efficacy from baseline to post-intervention follow-up by group.



**Figure 3.** Residual change in partner support from baseline to post-intervention follow-up by group.

- A telephone call was made to each of the Group 3 participants after the discussion group meetings had been held. The primary aims of this call were to provide information about the project and outcomes of the meetings, to encourage participants to consider their current level of PA, and to facilitate social support and the sharing of information among mothers in each centre.

### **Project outcomes**

Immediately post-intervention, 46.3% of the control group, 50.4% of Group 2, and 59.9% of Group 3 participants were meeting current recommendations for PA. Women in Group 3 were significantly more likely to meet recommendations at post-intervention follow-up than controls [OR = 1.71 (1.05-2.77)] after controlling for age and PA at baseline. There was no significant effect of the print intervention alone on meeting guidelines at post-intervention follow-up compared with controls, after controlling for age and PA at baseline [OR = 1.15 (0.70-1.89)]. Mean residual changes in Self Efficacy and Partner Support from baseline to post-intervention by experimental group are shown in Figures 2 and 3. Residual change in Self Efficacy was negative in both the control group and Group 2, compared with a positive residual change in Group 3 (shown in Figure 2). Similar patterns were found for residual change in Partner Support at post-intervention follow-up (see Figure 3). Changes in Partner Support and Self Efficacy (significantly predicted meeting guidelines at post-intervention follow-up after controlling for baseline PA (D SE: OR = 1.86 (1.17-2.94); D PS: OR = 2.29 (1.46-3.58)). The intervention effect in Group 3 was not maintained at long-term follow-up.

A copy of the full report on this project can be downloaded from the NSW HealthWeb site on [www.health.nsw.gov.au](http://www.health.nsw.gov.au)

### **Recommendations**

The findings indicate that a community participation approach that facilitates increased partner support and self-efficacy can be effective in increasing PA among mothers of young children. Although a significant intervention effect was not maintained at long-term follow-up (five months after the intervention period), short-term increases in physical activity were found to be mediated by changes in partner support and self-efficacy for physical activity, suggesting that the intervention successfully targeted the individual characteristics it intended to, and that these variables do play an important role in increasing physical activity among women with young children. There were several other indicators of lifestyle change among the women in Group 3, including decreased time spent sitting and increased time in active transport. It is clear that further work needs to be done to explore methods of translating the short-term intervention effect shown in this study into long-term changes in PA behaviour.

Post-study qualitative evaluation suggested that many women at this life-stage experience time constraints which, when accompanied by a lack of partner support, make leisure-time physical activity an impossibility. Future strategies might focus on targeting this population immediately prior to this life-stage in an attempt to encourage habitual physical activity. Alternatively, consideration could be given to leaving attempts to increase physical activity until children have reached school-age and the time-pressure is somewhat alleviated. Future strategies for increasing physical activity in this population should also address the entire family unit, and consider the way leisure-time is negotiated among the adults within a household.