What might work? Exploring the perceived feasibility of strategies to promote physical activity among women living in socioeconomically disadvantaged neighbourhoods

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Abstract

This study aimed to investigate preferences for, perceived feasibility of and barriers to uptake of hypothetical physical activity promotion strategies among women from socioeconomically disadvantaged neighbourhoods. Semi-structured interviews were conducted with 20 purposively recruited women (18–45 years) living in socioeconomically disadvantaged urban and rural areas of Victoria, Australia. Participants indicated the most and least appealing of nine hypothetical strategies, strategies most likely to use and strategies most likely to increase physical activity. Interviews were digitally recorded and transcribed verbatim. Thematic and interpretive content analyses were used to identify emergent common and contrasting themes. A community centre-based program with free childcare, the provision of a cleaner while physical activity is undertaken and a neighbourhood-based program were the three most popular strategies. Mobile-telephone-delivered text messages, an online interactive diary and subsidized gym memberships were considered least useful. Irrespective of the strategy, components of importance commonly identified were social support; being accountable to someone; having the option of a structured or flexible attendance design; integration of multiple strategies and financial considerations. Issues around trust and privacy and weight loss also emerged as important. The findings provide important insights for the development of physical activity programs targeting socioeconomically disadvantaged women.

Introduction

Women experiencing socioeconomic disadvantage, including those with low levels of education, low income or living in socioeconomically disadvantaged neighbourhoods, are an important target group for physical activity promotion interventions because they are at high risk for physical inactivity and associated chronic disease [1, 2]. However, little is known about which strategies may be most effective in this population group, as relatively few studies have assessed the effectiveness of physical activity intervention strategies specifically among women of low socioeconomic position (SEP). Existing intervention studies conducted with this population group have produced mixed findings in terms of effectiveness [3].

Of the limited intervention studies with women experiencing socioeconomic disadvantage, these have been community-based [4–11], centre- or organization-based [12–15], primary health care-based [16–19] or home-based [20]. A diversity of delivery modes have been implemented including face-to-face [8–10, 13, 16], telephone
and mail [4, 20], and print and media [5]. Some programs incorporated physical activity promotion as part of broader health promotion intervention approaches [5, 9–11, 17–19, 21]; others focused solely on physical activity [4, 6–8, 12–16, 20]. Many of these studies have seen no effect of the intervention on physical activity [4, 6, 8–11, 15, 18, 19], a number have observed effects in favour of the intervention [5, 7, 12, 14, 16, 20, 21] and one found a negative effect of the intervention on physical activity [13]. Little explanation exists for these mixed findings in terms of intervention setting, delivery mode, use of theory, study duration or strategy type [3].

The mixed findings observed may be partly attributable to a lack of formative research exploring the perceived feasibility of and preferences for particular strategies and intervention delivery modes that best meet the specific needs of this target population. Apart from one study among rural Appalachian residents [22], formative research has tended to be conducted by focusing on eliciting preferences and logistical requirements related to a pre-determined physical activity program (e.g. [23–25]) or has focused on barriers and enablers of physical activity (e.g. [26]), rather than discussing a range of physical activity programs or allowing for programmatic themes to emerge from participants. Women of low SEP face specific barriers to participation in physical activity, including less social support, financial constraints and local neighbourhood environments that may be less supportive of physical activity [27, 28]. Such findings highlight a need for intervention approaches that address the unique barriers to physical activity experienced by women of low SEP.

Prior to initiating further intervention trials—which are costly and time-intensive to implement—further information on the likelihood of uptake of such strategies is warranted. Obtaining such insights, including an understanding of how potential physical activity promotion strategies are perceived by the target population in terms of their feasibility, appeal, likely uptake and barriers to participation, is needed in order to inform effective intervention development. This study therefore aimed to investigate the perceived preferences for, feasibility of and barriers to uptake of a range of intervention approaches for promoting physical activity among women living in socioeconomically disadvantaged neighbourhoods.

Methods

During 2008–9, data for this study were collected in the Physical Activity Study (PhActS) [29], part of a broader program of research known as the Resilience for Eating and Activity Despite Inequality (READI) study [30, 31]. The READI study aims to identify the pathways by which socioeconomic disadvantage leads to increased risk of obesity and chronic disease, and understand how this risk can be reduced. It focuses on women aged 18–45 years living in socioeconomically disadvantaged urban and rural areas of Victoria, Australia, and during 2007–8, ~4500 women participated in a postal survey. The Deakin University Human Research Ethics Committee approved this study, and written informed consent was obtained from all participants.

Participants

A purposive sampling approach was used, as detailed previously [29], to recruit non-pregnant women aged 18–45 years living in socioeconomically disadvantaged areas of Victoria who were currently not regularly active (regularly active was defined as doing at least 30 min of exercise on most days of the week). Women of childbearing age specifically were targeted, since this is a life stage characterized by substantial barriers to physical activity participation [32, 33] and high risk of weight gain [34]. In quantitative studies, probability sampling is employed in an attempt to select a truly random and statistically representative sample that will permit generalizations to the broader population from which the sample was drawn. In contrast, the logic of purposeful sampling techniques employed in qualitative studies allows for the selection of information-rich cases for in-depth study (depth rather than breadth is the focus) [35]. We sought to recruit ~25–30 participants, as this number was expected to provide sufficient depth and reasonable
Feasibility of physical activity strategies

coverage of the phenomenon under study and was considered feasible within the time and budgetary constraints of the project. After interviews with 20 participants, no new information was being collected, so interviewing was ceased.

Three urban and three rural areas in the bottom two deciles of the socioeconomic index for areas (SEIFA; defined by the Australian Bureau of Statistics) distribution in Victoria were purposefully selected. This included one of each rural area classified as Outer Regional, Inner Regional and Remote Victoria (classified using the Australian Standard Geographical Classification [36]), and one urban area that approximated each of inner, middle and outer metropolitan Melbourne (based on the distance from the Melbourne central business district). Each area had a population size that was within ±20% of the average usual resident population size of that area type. Recruitment brochures were delivered to all residences in these six areas; advertisements were placed in local newspapers and flyers were posted in local community health centres, neighbourhood houses and libraries. Potential participants were asked to contact the research team through telephone, email or the study website. To supplement this recruitment strategy [29], a sub-sample of women living in areas in the bottom two deciles of the SEIFA distribution who were enrolled in the larger READI study (which sampled areas from the bottom three deciles of the SEIFA distribution), and who had indicated in an earlier postal survey that they were willing to participate in further research, were also contacted through post and invited to participate. Snowball sampling was also used.

**Data collection**

One-off face-to-face interviews were conducted by one of four female researchers, all of whom had at least undergraduate training in public health or a related discipline and had experience in conducting semi-structured interviews. All interviewers attended two half-day training sessions conducted by the Project Manager, where protocols were discussed. Participants had no prior relationship with interviewers, the Project Manager or the authors, and the goals of the research were clearly explained to participants prior to interview. Interviews were conducted in public or university libraries and community centres (n = 5), the participant’s home (n = 3) or the participant’s workplace (n = 2). Interviews in participants’ homes and in rural areas were attended by two interviewers for safety reasons. All interviews were digitally recorded with permission from the participant. Participants were given the option of reviewing their transcript, but no participants utilized this opportunity.

**Measures**

A semi-structured interview schedule was developed to address the research aims. Semi-structured interviews were used because they are perceived by researchers, participants and research consumers as a highly acceptable method [37] and were feasible for the budgetary constraints of this project. They are also flexible, allow participants to express their opinions and beliefs in their own words and facilitate in-depth understanding of issues, which is difficult to achieve using other methods [38]. Pilot testing of interview schedules occurred during training, where interviewers interviewed each other; minor modifications were made to the interview schedule accordingly.

A ‘portfolio’ of nine hypothetical strategies to promote physical activity was developed (Table I). Hypothetical strategies are useful because they can be produced relatively quickly and cost-effectively, can easily be relayed to participants using simple terminology, can be selected to represent a variety of approaches and convey different scenarios in a standardized manner. While responses to hypothetical strategies may not reflect actual behaviour, responses may be reflective of participants’ behavioural intentions, which are highly predictive of physical activity behaviour [39–41]. For this study, strategies were intended to reflect a number of domains from social-ecological models [42], and included unsupported (e.g., independent) strategies (information kit; online diary; physical activity calendar), supported (e.g., involving others) strategies
Six of the strategies were identified and/or adapted from existing behaviour change or weight loss interventions that have demonstrated effectiveness, or the promise of effectiveness, particularly those with relevance to high-risk or hard-to-reach population groups. For instance, information kits have been used as a supplement in studies aiming to increase physical activity (e.g., [43, 44]); calendars have been used as tracking and reminder mechanisms [12, 20]; mobile-telephone-delivered text messages have been used for targeting difficult-to-reach population groups [45]; internet-based interventions have demonstrated some promise in increasing physical activity [46]; financial incentives may be effective for promoting weight loss [47] and subsidized or free gym/recreation club memberships may be useful for promoting physical activity [48]. Three strategies were developed by the research team to address mediators of socioeconomic inequalities in women’s

### Table I. Description of the nine hypothetical physical activity promotion strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>SEM domain targeted</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsupported programs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information kit</td>
<td>Intrapersonal</td>
<td>A folder containing a range of information about the benefits of exercise, activity recommendations, suggested activities, overcoming barriers, an exercise planner and an action plan</td>
</tr>
<tr>
<td>Calendar</td>
<td>Intrapersonal, social</td>
<td>A calendar with gender and seasonally tailored messages to promote activities that focus on involving the family in physical activity; there is space for setting monthly goals and reminders and prompts regarding being active</td>
</tr>
<tr>
<td>Online diary and email</td>
<td>Intrapersonal, social</td>
<td>A web site where participants can sign in and can keep track of their physical activity, obtain ideas about how to be active, chat with other women and receive emails tailored in response to their current motivation level</td>
</tr>
<tr>
<td>Supported programs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobile-telephone-delivered messages</td>
<td>Intrapersonal, social</td>
<td>Text messages are sent to the participant’s mobile telephone to provide incentive, motivation and ideas to help them be more active</td>
</tr>
<tr>
<td>Community centre-based program with childcare</td>
<td>Intrapersonal, social, environmental, economic</td>
<td>Physical activity classes held at a local community centre or similar facility that can provide childcare for the duration of the lesson (if applicable), with the cost of childcare built into the class fees</td>
</tr>
<tr>
<td>Neighbourhood program</td>
<td>Social, environmental</td>
<td>Women from the local community are organized to meet and participate in activities that use the local environment (e.g., parks, walking tracks, recreational areas); activities either include children, or a child-minding roster is organized within the group.</td>
</tr>
<tr>
<td>Economic programs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial incentives</td>
<td>Economic</td>
<td>Participants receive a set amount of money when they reach set physical activity goals (either from an external source or through payment of a deposit at commencement which is returned when they meet goals)</td>
</tr>
<tr>
<td>Subsidized gym membership</td>
<td>Economic, environmental</td>
<td>Local gyms/fitness centres offer a discounted membership fee</td>
</tr>
<tr>
<td>Cleaner</td>
<td>Economic, environmental</td>
<td>A cleaner (or similar home help) is provided for 1 h per week over one or more sessions (1 h; 2 × ½h); during this time the participant must engage in a physical activity she would otherwise not be able to do (attend a class, go for a vigorous walk, jog, play a team sport)</td>
</tr>
</tbody>
</table>

SEM, social–ecological model.
physical activity such as lack of childcare, social support and lack of time [33, 39, 49–51]. A structured community centre-based group program with the option of childcare built into the cost, and an informal neighbourhood-based program with the option of a child-minding roster were posed because accessible childcare and social support have been identified as important influences on women’s physical activity [33, 39, 49, 50]. A cleaner (home help) program was suggested as way to address the common barrier of lack of time [49, 51], which may be related to household and home maintenance commitments [33, 51].

The interview schedule was purposefully structured to explore issues centred on the nine hypothetical strategies. Where possible, examples of strategy materials (e.g. information kits, calendars) were provided to stimulate discussion. For each strategy, participants were asked what they liked and did not like about the strategy, whether they thought the strategy would result in them being more active, potential problems or barriers to uptake of the strategy, and where appropriate, how and when the strategy would best be delivered. For example, when discussing the mobile-phone-delivered intervention, participants were asked to comment on the preferred content, frequency and source of text messages. At the end of each interview, participants were asked to list up to three of the nine strategies that they most and least preferred, up to three strategies that were most likely to be used, up to three strategies that would be most likely to result in increases in their physical activity levels, and whether they had any further ideas for other strategies not discussed. All interviews were digitally recorded and transcribed verbatim.

Analyses

Transcripts were imported into the NVivo 8 software program (QSR International). The analysis involved a process, led by the first author, of reading, re-reading and constant comparison of transcripts, with the aim being the identification of common themes [52]. Segments of transcripts were coded in NVivo for each strategy to identify concepts, issues, common and contrasting themes, and answers to common questions. Broad comments and emergent themes that were not specific to a strategy were coded separately. Because of the iterative and flexible nature of qualitative research, consideration of the emerging themes was regularly discussed between the research team (the investigators and the interviewers) during data collection, as recommended by Silverman [53]. The number of times each strategy was identified as the most preferred, the most likely to be used, and the most likely to result in an increase in physical activity was summed. This information was used to identify the most and least preferred strategies.

Results

Of the 28 women who indicated an interest in the study, 19 met eligibility criteria and 17 participated; a further three women were recruited through snowballing. Of the 20 participants, 9 were participants in the larger READI study, 4 responded to newspaper adverts, 3 were recruited through snowballing, 2 saw flyers in their local neighbourhood centre and 2 responded to the letterbox drop.

The characteristics of participants are detailed in Table II. The median age of participants was nearly 38 years, just over half were married or living as married, half had completed Year 12 or had a diploma/certificate, more than two-thirds were working full or part-time, all but one usually spoke English at home, half had no children living in the household, and of those with children in the household the median age of children was 8 years.

Table III describes the number of times in total that each program was indicated by participants as being in their top three most preferred strategies, top three most likely to increase physical activity strategies and top three they were most likely to use. Three hypothetical strategies were consistently rated by participants as the most appealing, the most likely to be used and the most likely to result in increases in physical activity: the community centre-based program with childcare, the cleaner (home help) program and the neighbourhood program.
Community centre-based program

The community centre-based program with childcare built into the cost was popular with a diverse range of participants of varying sociodemographic characteristics. This type of program appeared to address a number of barriers, such as childcare and cost, and have multiple benefits, such as the social aspects:

That appeals to me because [son] is looked after while I can exercise, and I can still interact with other people and gain some motivation, I think, when I’m exercising with those other people. (43 years, full-time work, married, 3-year-old child)

Some participants mentioned that activities in community centres were often more accessible in terms of cost and distance, for example: ‘Yeah that’s actually sometimes even better because sometimes gyms are either too far away or they’re a lot higher price’ (22 years, part-time work, not married, 15-month-old child). Others felt that the social aspects were of benefit:

Maybe meeting new mothers because I’ve often wanted to join a mother’s group, I don’t know just meeting new friends in general…Yeah social thing really more than anything for me. (22 years, part-time work, not married, 15-month-old child)

The childcare aspect was very appealing to women with both younger and older children.

I think it’s a fabulous idea. Because there’s been classes I’ve wanted to go to, but because
I haven’t had child minding, and my husband works incredibly long hours, I don’t want to just leave him sort of, I mean, as soon as he gets home “Here’s the baby, you know, I’m going.” (43 years, full-time work, married, 3-year-old child)

... my kids are a bit older now but I still have the, the problem when I go to the pool... one of my kids is old enough to be in the pool by herself but [son]’s not and you know so you can’t go into the gym you know [husband]’s got to be there. (41 years, full-time work, married, two children)

Support for this program was not just limited to women with children, despite its focus on including childcare; for example

That’s good, because I always like to do classes, and I always wanted to have my sister along with me and, she has kids and it’s impossible, because her husband works offshore, and you know, if you don’t have someone who can look after the kids, it’s... she just can’t go, and... And then obviously, I’m not as motivated to go by myself, so, yeah, no I like that idea. (24 years, full-time work and full-time study, living as married, no children)

Support for the program was not unanimous however, with some participants expressing concerns such as the class not being tailored to their ability, not wanting to leave their child in care, poor group dynamics, the skills of the instructor, timing conflicts, and cost and transport issues. Illustrative quotes of these themes are reported in Table IV.

Cleaner (home help) program

The cleaner (or home help) program, where assistance with home duties such as cleaning, ironing or gardening are provided to allow time for physical activity, was the second most popular in terms of appeal, likelihood of use and likelihood of increasing physical activity. Many of the participants attributed their like of this program to the notion that someone else was ‘relieving’ them of their home duties and acting as a prompt to leave the house and participate in some physical activity, and because of the commitment that it would entail.

The cleaner one I think is the best... Just because it just seems to hit two birds with one stone. It actually benefits me in the relieving me of something and at the same time it releases me to do something else and it locks me in to a commitment, like if I know the cleaner’s coming then, then that’s my time to do this... it’s like a double time saver. It gives a commitment you know, because it’s a set time probably, you know it would be a set time each week, then there’s something that is done for me that I don’t have to do at home, plus it commits me to going out and doing something. I just, I think that’s brilliant. (45 years, full-time work, not married, no children)

I love that idea someone to come in and clean my house. I think it would work for me because it would be someone at my door to say OK I am coming to clean so you need to go. So you have got that outside motivation to say OK off you go, instead of me thinking “will I or won’t I go today?” (40 years, full-time home duties, divorced, three children)

However, some women felt that it would not help them be more active because they were already able to manage, had a small house, had scheduling issues, felt guilty, were concerned about trust or saw housework as a source of physical activity (Table IV for illustrative quotes).

Neighbourhood-based program

The third most popular program was the neighbourhood program, where women from the local community are organized to meet and participate in activities that use the local environment, with the option of including children or having a child-minding roster. As with the community centre-based program, the social element and commitment to others were key aspects that many women were attracted to.
And then even when you start making friends with people and then they wonder why you’re not coming so you think “Oh, I’d better go.” So, making you get up and go. (40 years, full-time home duties, divorced, three children)

It’s probably a good way to meet people in your community. I don’t think these days’ people know a lot of people in their own community. (26 years, full-time work, living as married, no children)

Preferences for a flexible or more structured format were mixed, but appeared to be related to whether they had children or not. For instance, one woman with a 15-month-old child said ‘…you’ve got more freedom again because you can meet where you feel like it, because there are a lot of parks around here too’ (22 years, part-time work, not married, 15-month-old child).

In contrast, a woman with no children mentioned ‘I really like the permanence of it. The structure, like women would meet at a set time at a set place’ (21 years, full-time study, not married, no children).

Women’s preferences around whether or not to include children in the program were divided.

That you can bring your children with you. I know that the mums group that I go to, we’ll go for a walk and we’ll take the prams and the kids with us. So, yeah, you don’t have to think about childcare you just get up and you go… (40 years, full-time home duties, divorced, three children)

Without the kids, just you feel relaxed and no more… noise around and you can do your physical activity without anything more.

Table IV. Examples of text to illustrate participant concerns about the three most popular physical activity promotion strategies

<table>
<thead>
<tr>
<th>Program and concern</th>
<th>Illustrative quote</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Community centre-based program</strong></td>
<td></td>
</tr>
<tr>
<td>Lack of tailoring to ability</td>
<td>‘If they are too fast or involve too many steps’</td>
</tr>
<tr>
<td>Scheduling</td>
<td>‘They’re never ever out of work hours’</td>
</tr>
<tr>
<td>Concerns about childcare</td>
<td>‘She’s never been in childcare, I’d be a bit apprehensive about leaving her for the first time’</td>
</tr>
<tr>
<td>Group dynamics</td>
<td>‘I couldn’t stand being with people that I don’t like’</td>
</tr>
<tr>
<td>Instructor skills</td>
<td>‘I’m wary because of wanting to make sure the instructor’s you know, going to be able to manage it and those kind of things’</td>
</tr>
<tr>
<td>Cost</td>
<td>‘The costs of those places are quite prohibitive’</td>
</tr>
<tr>
<td>Transport</td>
<td>‘I’ve got no money to pay for anything like that… and no transport’</td>
</tr>
<tr>
<td><strong>Cleaner (home help) program</strong></td>
<td></td>
</tr>
<tr>
<td>Lack of need</td>
<td>‘I have got a pretty small place, I would probably clean my own’</td>
</tr>
<tr>
<td>Scheduling</td>
<td>‘That’s a bit difficult though if you’re working full time’</td>
</tr>
<tr>
<td>Domestic chores an activity opportunity</td>
<td>‘That’s a really good idea, but like, doing chores around the house, that’s exercise. And if you’re vacuum cleaning, that works up a sweat as if you’re going for a walk or something’</td>
</tr>
<tr>
<td>Guilt</td>
<td>‘They’d make me feel that bad I’d have to send them home and start myself’</td>
</tr>
<tr>
<td>Trust</td>
<td>‘I guess you’ve got to trust the person but just knowing people they could touch my things and stuff’</td>
</tr>
<tr>
<td><strong>Neighbourhood-based program</strong></td>
<td></td>
</tr>
<tr>
<td>Lack of time</td>
<td>‘You have your own social group and then it’s hard to keep in touch with it all’</td>
</tr>
<tr>
<td>Preference for non-group activities</td>
<td>‘I’m not a real neighbourhood type person’</td>
</tr>
<tr>
<td>Scheduling</td>
<td>‘It could be the time of day’</td>
</tr>
<tr>
<td></td>
<td>‘It’s always been in the day or the weekends’</td>
</tr>
<tr>
<td>Group dynamics</td>
<td>‘There might be someone in the group that you don’t like or they might not like you’</td>
</tr>
<tr>
<td>Weather</td>
<td>‘It might be too hot or it might be raining’</td>
</tr>
</tbody>
</table>
Some women commented that the lack of cost was an important part of their attraction to the program. Women who perceived the program less favourably voiced concerns such as preferences for non-group activities, already being too busy, potential problems with timing, group dynamics and the weather (see Table IV for illustrative quotes).

Least preferred programs
Mobile-telephone-delivered text messages were most commonly considered the least useful intervention, for some because they did not own a mobile telephone, which may be particularly important among this population group, while others felt the messages were easy to ignore:

...obviously the mobile phone, text messages, I don’t have a mobile phone. But even if I did have one, I know I’d just delete them. (43 years, full-time work, married, 3-year-old child)

Because that would be so easy just to ignore. I didn’t have to really answer… or feel like I had to answer to anybody and I could just read them and delete them and ‘Yeah, OK, fine.’ (45 years, part-time work, divorced, no children)

The subsidized gym memberships and the online diary were also commonly considered as least preferred strategies. Some women expressed that they did not like or would not use the online diary because of a lack of time (‘So depending on how busy you were… I’d say this would be the first thing I would skip’), lack of internet/computer access and the potential for privacy breaches (‘I think it has to be private’). Reasons for not liking the subsidized gym membership included previous negative experiences with gyms or gym staff, the financial and time commitment associated with purchasing a gym membership (e.g. 12-month contracts), and the lack of gyms in the local area.

Cross-program themes
A number of broad themes emerged from the interviews that were not specific to a single strategy, but which provide insights into the perceptions and preferences of participants relating to physical activity promotion programs generally. These themes included the notion of accountability, structured versus flexible programs, the integration of multiple strategies, concerns about trust and privacy and weight-related issues.

Accountability
A number of participants discussed the need to be accountable to someone or something for their physical activity. Without this accountability, these women felt that being left to their own devices would not provide adequate motivation to participate in any physical activity.

And maybe that little bit that you are obliged to go because you have joined and you have made friends and you are part of a group—so you think ‘I need to go’… everyone else is sort of keeping an eye on whether you are going to come or not, and why didn’t you come last week, is there something wrong… so yeah just that if I don’t go then I will have to explain why and it might have been just because I couldn’t be bothered. You know you can’t have an excuse. I don’t have an excuse but I just don’t want to go and then I will go. (40 years, full-time home duties, divorced, three children)

Flexible versus structured programs
There were contrasting views about whether programs should be flexible in nature, or whether
regular, set times and days were preferred. Preferences appeared to be related to whether the women had other commitments such as child and family responsibilities or irregular work hours. Women without children commonly commented that they preferred a regular timeframe for activities:

It gives a commitment you know, because it’s a set time probably, you know it would be a set time each week. (45 years, full-time work, not married, no children)

...it would be good if it was sort of a more permanent fixture like a set day on a set time at a set place... (21 years, full-time study, not married, no children)

However, women with young children and/or irregular working hours felt that a more flexible program would best suit their needs:

As long as there’s flexibility. Like in the sense that, ‘oh, I might be a bit late’, or ‘I can’t make it, but I’m coming back next week.’ (36 years, part-time work, married, 2-year-old child)

I don’t see it sort of being compulsory thing, because sometimes you want that bit of freedom where you can come when you feel like it or maybe one week you’re feeling sick or something... (22 years, part-time work, not married, 15-month-old child)

**Multi-component strategies**

Some women mentioned that they would most benefit from a combination of strategies, for example, the information from the information kit delivered through the web site or a combination of all the different programs:

... if I wanted to run a program I’d be using all of them. (26 years, full-time work, living as married, no children)

All of them, just because if you had them all working together it’s just constant reminder that you need to do exercise and you know reaching goals you can have things. (22 years, full-time work and full-time study, living as married, no children)

**Trust and privacy**

Some women raised concerns that could be characterized as trust related. For instance, some thought the mobile-telephone-delivered text messages would be an invasion of their privacy, depending on where the messages were coming from, for example:

But to me if a government or something does this, it wouldn’t, me personally, wouldn’t motivate me. It would be sort of like Big Brother telling me go and exercise... Kind of pointing the finger at you? (40 years, part-time work, not married, no children)

This might sound more like telemarketing... (40 years, full-time work, married, no children)

Some women had concerns about someone coming into their home as part of the cleaner program, for instance:

I don’t think so because I can clean anytime I want I guess and I mean I live with my parents so they’re a bit touchy about people coming in to the house as it is so... (22 years, part-time work, not married, 15-month-old child)

I might not trust a cleaner to be in my home on their own. (40 years, full-time work, married, no children)

In the financial incentive program, where money is used as a reward for reaching set goals, a number of women were concerned about whether other participants would be honest in reporting their activities or whether the financial incentive might result in dishonesty.

But you would have to sort of somehow prove that you have got... write it down or get someone to witness it... I don’t know. (40 years, part-time work, not married, no children)
...not doing it for a real reason and just, sort of, slacking off and saying they’ve done it, and you know, they haven’t done it. . . . . You’d need to...yeah, you’d definitely need to make sure that you...somehow you’d have to definitely make sure before they got the money...it also makes me wonder how that would be monitored and how yeah, you know, just the honesty factor. I’m not saying oh I’d lie, but I can imagine people going ‘yeah, I did that’...And if you’re down in Melbourne going 'how do I know you’ve done that?' (31 years, unemployed, living as married, four children)

**Weight**

Despite the focus of the hypothetical strategies being on increasing physical activity participation, many women discussed issues related to weight and weight management. For instance, in the program where a financial incentive was offered as a reward for achieving physical activity goals, more than half of the interviewees suggested that rewards should be based around weight loss. For instance:

Every couple of kilos or one kilo would be five dollars you get in your pocket a week or something. It doesn’t have to be a great deal but you know something like that. If you lose five kilos you get twenty bucks. (40 years, part-time work, not married, no children)

If you got paid for losing weight, I think that’s wonderful. (44 years, keeping house/raising children full-time, separated, three children)

This type of response was not restricted to the financial rewards program, with a number of women suggesting incorporating weight loss strategies into other programs, such as the information kit, neighbourhood program and online diary:

[the information kit could include] A little bit more about exercise physiology and what your body can do and how to lose weight and the right sort of exercise for you. (40 years, part-time work, not married, no children)

...you know, your neighbourhood program, like once a week, before they went on their walk or whatever, they all weighed and wrote it in their book or whatever. (24 years, full-time work and full-time study, living as married, no children)

I like the forum idea [on the online diary], being able to sort of see how other women are going. Maybe you could talk about whether anyone’s, you know, if you’re trying to lose weight, whether you’ve lost any weight or whatever. (43 years, full-time work, married, 3-year-old child)

**Discussion**

This study investigated the specific preferences for, feasibility of and barriers to uptake of a range of physical activity promotion approaches among women recruited from socioeconomically disadvantaged neighbourhoods, a group at increased risk of physically inactive lifestyles [2]. The lack of evidence of effective approaches for promoting physical activity in this target group underscores the need for a better understanding of the particular intervention approaches that address the most pertinent barriers and are of greatest appeal to women living in socioeconomically disadvantaged areas. This work has identified a number of strategies and strategy components that may hold promise for physical activity promotion interventions in this population group.

Out of nine hypothetical strategies to promote physical activity, a community centre-based program with childcare, cleaner in exchange for physical activity and a neighbourhood-based program were most commonly perceived as the most appealing, the most likely to be used, and the most likely to result in an increase in physical activity. Despite their different settings and formats, the community centre- and neighbourhood-based programs have common elements including the social dimensions
of social support and shared experiences, account-
ability and having the option of childcare for those
requiring it. Two constructs underscoring these pro-
grams, social support and childcare, have consist-
ently been identified as important correlates of
physical activity among women [39, 54, 55]. The
findings from this study highlight the importance
of addressing these factors in the design of physical
activity promotion strategies targeting socioecono-
mically disadvantaged women.

Another important element of these two strate-
gies, and a theme that emerged across the spectrum
of strategies, was the notion of accountability.
Accountability has previously been identified as a
potentially important aspect of physical activity pro-
motion programs among women [56]. While ac-
countability may involve self-monitoring of
physical activity, another element found to be im-
portant for behaviour change [57], participants in
this study indicated that monitoring and being ac-
countable to someone else would increase the like-
lihood of their participation in the program and in
physical activity. In some cases, this appeared to be
related to a sense of duty or guilt—the notion that
someone else was relying on them to participate and
they did not want to disappoint anyone. Programs
may therefore be more effective if they incorporate
a sense of accountability to others, possibly through
the establishment of social networks, behavioural
contracts or other reporting or monitoring
mechanisms.

The novel idea of a cleaner (or other form of
home help) in exchange for physical activity, which
has not been empirically tested as a strategy
to increase physical activity, may be a promising
avenue for intervention research in this population
group. Lack of time, often due to domestic respon-
sibilities, has been consistently documented as an
important barrier to participation in physical activity
among women [51]. This may be particularly perti-
tinent for women, many of whom juggle work, par-
enting and other roles. Alleviating some of the time
pressures associated with these roles may relieve
some of the guilt associated with taking 'time out'
to be active.

The finding that there was low appeal of
mobile-telephone-delivered text messages and an
online interactive diary for this target group is of
interest as the use of mobile and online technologies
to deliver physical activity promotion messages is a
growing field of enquiry with promising results, at
least in the short term [45, 46]. The present findings
cast some doubt on the value of such approaches for
women experiencing socioeconomic disadvantage,
who either do not use mobile telephones or com-
puters, do not have internet access or would report-
dedly find such delivery channels unappealing and
ineffective. Alternately, it could be that programs
that use this type of strategy ensure that negotiated
boundaries are well established prior to commence-
ment in terms of the frequency, type and source of
messages.

Despite the diverse health benefits of regular par-
ticipation in physical activity [33], weight and
weight loss were commonly discussed by women
in this study as the primary reasons for being phys-
ically active. This may reflect the increased risk of
obesity associated with socioeconomic disadvan-
tage, and hence weight-related benefits of activity
may be particularly pertinent motivators for this
target group. Although those developing physical
activity programs could utilize the concept of
weight management as a marketing tool (i.e. an add-
tional incentive to participate), this should be done
in the context of emphasizing additional health,
social, environmental and economic benefits of
physical activity, so as to avoid the implication
that those of a healthy weight do not need to partici-
pate in physical activity.

Strengths of this study include that it addresses
the lack of formative research specifically targeting
the unique needs and barriers of a high risk target
group; the range of potential physical activity pro-
motion initiatives examined, covering a spectrum of
programs, theoretically derived domains and phys-
ical activity determinants; the use of qualitative re-
search methods to gain an in-depth understanding of
the context of and reasons for the likely appeal or
disinterest in various strategies; and the inclusion of
a range of women with various sociodemographic
characteristics from both rural and urban socioeconomically disadvantaged neighbourhoods.

Despite recruitment from disadvantaged neighbourhoods, a number of participants were not disadvantaged according to individual-level indicators [e.g. seven participants had a university qualification (Table II)]. This finding highlights the difficulties in capturing a sample of extremely disadvantaged women who are at most risk of inactivity, which we have described previously [29]. However, area-level disadvantage confers risk of physical inactivity, independently of individual-level SEP [2, 58–60], and there was diversity in the sociodemographic characteristics of participants. Although the intention of qualitative research is to generate quality, information-rich data to enhance understandings of issues [38] rather than produce generalizable results, the conclusions should be considered with caution. In addition, other data collection methods, such as focus group discussions, nominal group techniques or surveys, may have provided different insights to those gathered through semi-structured interviews.

A further weakness is that reported preferences and likely use may not necessarily equate to actual program uptake and physical activity participation. The three strategies selected by participants as most preferred were the three strategies devised by the research team, and these have not been tested in empirical research. These three strategies require further testing to establish their effectiveness. Further, the hypothetical strategies were limited to a non-exhaustive selection of nine strategies, and there may be other strategies not proposed that would have greater appeal or uptake. However, strategies were chosen to represent a broad range of program types, settings and delivery modes, and participants were asked if there were other strategies that they would prefer. Few took this opportunity, and those that did generally suggested minor modifications to the hypothetical programs posed. No information on past experience of physical activity information was collected, other than that offered voluntarily by participants during the course of the interviews.

Acknowledging the limitations, findings from this study provide useful insights to inform the development and design of physical activity intervention programs specifically tailored to the needs and preferences of women living in socioeconomically disadvantaged areas. Irrespective of the strategy form, recommended approaches for this population group may benefit from giving consideration to developing trust among participations and those involved in program delivery. Strategies may require built-in accountability, the option of being involved in a flexible or structured program and comprise multiple components or delivery channels. Careful consideration should be given in such developmental work to program social support, accountability, childcare, cost and transport and access issues, and in-depth feedback should be sought on acceptability prior to effectiveness testing of physical activity promotion strategies.

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Conflict of interest statement

None declared.

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Feasibility of physical activity strategies


