

Evaluating a community lifestyle intervention: adherence and the role of perceived support

Sarah Barter-Godfrey Centre for Health through Action on Social Exclusion (CHASE), School of Health and Social Development, Deakin University, Burwood, Victoria, Australia, **Ann Taket** School of Health and Social Development, Deakin University, Australia and **Gillian Rowlands** Director, Institute of Primary Care and Public Health, London South Bank University, UK

Background: Interventions that increase participation in physical activity and positive dietary changes may improve the health of the community through modifying the lifestyle contribution to preventable disease. However, previous evaluations have identified concerns about inequitable and unsustainable uptake, adherence and retention within healthy lifestyle schemes. **Intervention study:** The intervention evaluated here was designed to be a 12-week intervention for participants, offering free testing of physiological indicators of health, one-to-one health advice and a range of exercise, activity and cookery classes, at no or reduced cost, at local venues throughout the community. This paper reports the findings from a small qualitative study undertaken to explore the experiences and reflections of those who took part in the intervention to different extents, including those who fully and partially participated as well as those who dropped out or declined to take part. **Method:** Sixteen respondents took part in semi-structured interviews (5 male, 11 female; 8 black, 8 white; age range 25–85). **Findings:** The findings suggest that participants assessed the healthy lifestyle intervention in terms of how well it met their pre-existing needs and opportunities for change, and that they selected the aspects of the scheme that suited them, interested them and were perceived as delivering salient results. There is also evidence for a stronger role of perceived support in influencing uptake and maintenance of lifestyle changes, and that support was conceptualised by participants as one of the services offered by the scheme. Perceived support and related perceptions of reliance on the scheme to sustain lifestyle changes also suggested that in some cases full adherence to a scheme is not as likely to produce long-term adherence to lifestyle changes as compared to partial, but more realistic adherence and smaller lifestyle changes. Implications for delivering and evaluating healthy lifestyle interventions are also discussed.

Key words: community-based intervention; community health promotion; support

Received: August 2006; accepted: May 2007

Introduction

The World Health Organisation (WHO) identifies five key risk factors for chronic disease that

Address for correspondence: Sarah Barter-Godfrey, Centre for Health through Action on Social Exclusion (CHASE), School of Health and Social Development, Deakin University, 221 Burwood Highway, Burwood, Victoria 3125, Australia. Email: sarah.barter-godfrey@deakin.edu.au

The research was carried out while the corresponding author was at London South Bank University.

are related to physical activity and diet: high blood pressure, high cholesterol, excess weight and obesity, inadequate intake of fruit and vegetables and physical inactivity, and a sixth risk factor is tobacco use (WHO, 2007). The Global Strategy on Diet, Physical Activity and Health produced by WHO presents a framework for the prevention and control of non-communicable disease, the guiding principles of which emphasise the need for national and local decision-making and delivery, recognition of cultural sensitivity

and local realities, engaging with public and private sectors, and political commitment and integration within national policies (WHO, 2004).

Current UK government policy documents are largely congruent with this global strategy, for example the 'Small Change; Big Difference' campaign recognises the importance of increasing physical activity and improving nutritional intake across the population and the campaign has been taken up by organisations outside the NHS, providing or promoting diet and activity changes through healthy living initiatives (Department of Health, 2006a). Parallel to the shift towards chronic illnesses, away from acute communicable diseases, there has been an increased emphasis on primary prevention through changes to lifestyle choices. This is reflected and reported within the UK government's white paper 'Choosing Health' and its associated consultations (Department of Health, 2004). 'Our health, our care, our say' (Department of Health, 2006b) introduces a policy of accessible 'NHS Life Checks' for the general public to assess their lifestyle risk factors and to seek out information and advice for improving their lifestyle choices. Using a broad definition, lifestyle factors may include physical activity, smoking cessation, food and alcohol consumption and access to 'healthy' environments.

Interventions that increase participation in physical activity and positive dietary changes may function as primary prevention strategies at a community and individual level, by modifying the lifestyle contribution to preventable disease (Adami *et al.*, 2001; Barnard, 2004; Lindstrom *et al.*, 2005). Exercise on referral schemes (doctor referral for patients to engage in exercise and activity based interventions) are being piloted within the NHS, and represent an increasingly practiced form of secondary prevention strategies for individuals (Dugdill *et al.*, 2005).

Previous research into healthy lifestyle interventions have reported broadly successful outcomes, including weight loss (Fontaine *et al.*, 1999), improved health related quality of life scores (Kerse *et al.*, 2005), stress management (Johnson-Kozlow *et al.*, 2004), improvements in diabetes outcomes (Liberopoulos *et al.*, 2006), improvements in dietary intake (Sartorelli *et al.*, 2005) and body image and general well being (Hausenblas and Fallon, 2006). However, there is concern that interventions do not generate

sustainable improvements in health dimensions, and that local, short-term interventions are not cost-effective (Sevick *et al.*, 2000; Harrison *et al.*, 2004; Hagberg and Lindholm, 2005; Morgan, 2005).

Uptake rates in healthy lifestyle interventions can be quite low and skewed against underserved parts of the community, without addressing the cultural and geographic needs of a diverse population, reflecting, rather than challenging, local health inequalities (Bandesha and Litva, 2005; Harrison *et al.*, 2005). In addition to poor uptake, there is a concern about poor adherence to interventions. A review in the early years of such schemes suggested that up to half of people engaged in an exercise programme drop-out within the first six months (Robison and Roberts, 1994); a more recent literature review suggests that adherence and retention within interventions continue to be significant problems in providing diet and physical activity modification schemes (Blue and Black, 2005). In spite of this established recognition of attrition from lifestyle modification interventions, a recent systematic review of Exercise on Prescription schemes reported that there is little known about people who drop-out from exercise schemes (Sorensen *et al.*, 2006).

Interventions that are designed to be predominantly, or solely, health advice without addressing social and environmental constraints are reported as unlikely to support sustained health behaviour change (Lawlor and Hanratty, 2001; Hillsden *et al.*, 2002; McNeill *et al.*, 2006). Conversely, perceived social support for participation, and the development of social relationships and skills within an intervention are reported as facilitating sustainable exercise participation (Thurston and Green, 2004; Kaewthummanukul *et al.*, 2006; Mancuso, 2006). Such findings indicate that there may be a mismatch between traditional healthy lifestyle promotion programmes, which focus on individualised, educational approaches to healthy lifestyles, and the functional aspects of interventions that engage participants to make and maintain actual lifestyle changes. Potential tension between 'educating' individuals to making positive health lifestyle choices and providing the opportunities for communities to follow health advice can be conceptualised in terms of *agency* and *structure*.

Agency is an individual's capacity, disposition and preference for determining their behaviour;

structure is the context, resources and social factors that contour such choices (Sibeon, 1999). Health behaviours, including lifestyle factors, are therefore the product of choosing (agency) from what is available (structure). Strategies that aim to promote lifestyle modification strategies need to consider provision of both education to enhance personal agency, and shared resources to enhance public health structures, that is to go beyond recommending lifestyle choices but also ensuring there are feasible routes to acting on recommendations for health (Archer, 2000; Cockerham, 2005).

In addition, motivation to engage in behaviour change is considered an important part of intervention provision and adherence. Personal motivation may be conceptualised as a feature of agency, as a precursor to implementation intentions and as an outcome of positive, pleasurable experiences, reinforcing established patterns of behaviour (Cale and Harris, 2001; Gardner and Hausenblas, 2004). Self-determined or autonomous motivation to make lifestyle changes is associated with adherence to interventions and health lifestyle improvements (Williams *et al.*, 2005; Thøgersen-Ntoumani and Ntoumanis, 2006).

The National Quality Assurance Framework for Exercise Referral Systems (Department of Health, 2001) outlines the need for interventions to engage in motivational strategies to encourage and retain participants, and recommends the use of recognised behaviour change models within the design and delivery of interventions. This Framework makes particular mention of Prochaska's Stages of Change model, which directly informed the lifestyle intervention considered here: Flora Fit Street.

The intervention: Flora Fit Street

Flora Fit Street (FFS) was a community-based healthy living initiative carried out in Clapham Park, south London during 2004–05, in a private public partnership between Flora (Unilever) and Clapham Park New Deal for Communities. It was designed to be a 12-week intervention for participants, offering free testing of physiological indicators of health, one-to-one health advice and a range of exercise, activity and cookery classes, at no or reduced cost, at local venues throughout the community.

Participants took part in an initial 'Heart MOT', an initial heart health check-up offering a combination of physical health tests, including blood cholesterol, blood glucose, blood pressure, body mass index and resting heart rate, as well as self-reported smoking, self-reported activity (Seven Day Activity Recall) and self-perceptions of health (SF-36); and a 20 min consultation with a health professional, with further optional consultations with exercise and nutrition specialists also available.

After 12 weeks, participants were invited to a follow-up 'Exit MOT', where their measurements were retaken and they received feedback about their progress. Between the Baseline MOT (199 participants) and the Exit MOT (111 participants), the participant group recorded a 5.9% reduction in mean blood cholesterol levels and a 5.7% in mean blood glucose levels; 45% of participants reported increasing their healthy food choices and 41% reported decreasing their unhealthy food choices (Taket *et al.*, 2006).

For the scientific study, participants were also contacted after a further 12 weeks for a follow-up (six months) MOT session, to monitor sustained changes. The participant group who were included in the six-month follow-up (35 participants) recorded a 13.2% reduction in mean blood cholesterol levels from the entry MOT; 52% of participants reported increasing their healthy food choices and 43% reported decreasing their unhealthy food choices, compared to the baseline measurements (Taket *et al.*, 2006).

FFS provided a range of recommendations and routes to modify lifestyle choices, and worked within a framework that recognised psychological readiness to change and motivational strategies. It generated notable positive impacts on the health of the participants that remained within the scheme. However, it underserved men and older people compared to the community as a whole in which the scheme was offered, and there were problems of adherence and attrition across the programme.

Bearing in mind previous researchers' comments on the lack of knowledge about people who drop-out from similar schemes and declining return rates during FFS, it was important to consider the experiences and reflections of partial adherers to FFS and those who dropped out from the scheme, as well as those who adhered fully to

Adherence	Number	Age mean (range)	Gender	Ethnicity
Completer	5	43.4 years (31–56)	4 women, 1 man	4 black, 1 white
Partial Adherer	5	40 years (25–65)	3 women, 2 men	2 black, 3 white
Post-introduction decliner	3	51 years (44–56)	2 women, 1 man	1 black, 2 white
Pre-introduction decliner	2	80.5 years (76–85)	1 woman, 1 man	0 black, 2 white

Figure 1 Participant characteristics

the intervention, and this paper reports the findings from a small qualitative study undertaken to explore this.

The aims of this study were to explore the experiences of barriers to and facilitators of participation in FFS, and reflections on health, motivation and capacity for healthiness of those who took part in the FFS intervention alongside those who did not participate.

Method

Recruitment

Recruitment strategies aimed to sample both those who had taken part in FFS (participants) and those who had not, but who had been aware of FFS, that is had actively decided not to take part (non-participants). Interviewees were purposively sampled by ethnicity and gender, from those who had participated and not participated in FFS. Reflecting the major ethnic groups of the locality, there are two ethnic groups used here: white (White British, White Irish and White other) and black (Black British, Black African, Black Caribbean and Black other).

To recruit FFS participants, people who had consented into the FFS evaluation study, identified themselves as either black or white, and according to the FFS administrative records had also arranged a follow-up session, were contacted via an introductory letter and follow-up telephone calls or messages. Response rates were low, at around 10%, with a proportion of incorrect or changed contact details since the participants' last contact with the scheme, some non-respondents and some actively declining to take part in any further evaluations or aspects of FFS.

To recruit non-participants, leaflets were distributed at community venues throughout Clapham

Park with support of the Clapham Park New Deal for Communities (Clapham Park Project). After receiving more written information about the evaluation, around half of those who had initially shown interest in the study actually took part in interviews.

All interviewees were offered a £20 gift voucher on completion of the interview.

Sample

There were 16 interviewees, five male, 11 female, eight black and eight white. Their ages ranged from 25 to 85, the average age for white interviewees (50.4 years) was higher than the average age for black interviewees (44.9 years). Male and female average ages were very similar (47.2 and 47.8, respectively), but this falls when excluding interviewees who had not taken part in any aspect of FFS (38 years and 45 years respectively). See Figure 1 for summary of the participants. Four adherence groups are presented: completers (entry and exit MOT attendance, diet and physical activity changes), partial adherers (entry and exit MOT attendance, diet changes), post-introduction decliners (entry MOT attendance) and pre-introduction decliners (no attendance).

Interviews and analysis

Those recruited into the evaluation were asked to take part in one semi-structured interview. Interviews were designed to take no more than about half an hour, and interviewees could decide whether to take part over the telephone or in person. Face-to-face interviews were carried out in the Clapham Park New Deal for Communities meeting facilities.

Five themes were identified when designing the structured interview schedules, based on

understandings from the literature outlined in the introduction section and the explicit scope of the study to consider uptake, experience and adherence of FFS:

- 1) motivation to attend or not attend healthy lifestyle initiatives;
- 2) perceptions of own health and wellbeing;
- 3) motivation to improve own health and wellbeing;
- 4) perceptions of barriers and paths to improving or protecting own health and wellbeing; and
- 5) motivations to sustaining current healthy practices and perceptions of likely maintenance of healthy practices.

These themes were developed to be framed in ways that were meaningful to both those who had and had not participated in FFS, in a series of structured topic areas. All interviews were taped and transcribed for analysis, using thematic analysis techniques (Dixon-Woods *et al.*, 2005).

Interviewees who had attended FFS at least once were asked whether they had attended alone or with others at the first MOT, whether they had attended any classes, whether they had made any changes to their diet and whether they had attended follow-up MOTs. On the basis of these responses, interviewees were classified as completers, partial adherers and non-participants (further classed as pre-introduction decliner and post-introduction decliner depending on whether they reported ever going along to an FFS session or not). See Figure 1 for a summary of participant characteristics.

Findings

Characteristics of adherence groups

The three levels of adherence were identified through the interviewees' descriptions of their uptake of testing, diet advice and activities.

Completers attended both entry and exit MOTs, made changes to their diet and engaged in, or increased, physical activity in response to the advice given at their FFS consultation. As a group they indicated that they had already started to make some changes towards a healthier lifestyle prior to FFS, and that they already had motivation to look after and increase their capacity for health. They reported positive reactions

to the test results at the MOT, and found that test results that fell within 'bad' or 'unhealthy' ranges motivated them to participate within FFS. They reported that at least some of the structural facilities put in place through FFS were convenient for them, and that their diet and physical activity changes could be incorporated within their existing lifestyle.

Partial adherers attended both entry and exit MOTs, made some changes to their diet, but did not engage in or increase their physical activity. As a group they indicated that they had already been engaged in information seeking prior to starting FFS, and were motivated to attend FFS because of recent, specific and serious health concerns. They were not concerned by the test results at the entry MOT or the exit MOT. They were broadly satisfied with their participation in FFS, but identified areas of incompatibility or inconvenience between what was offered and their existing lifestyle.

Non-participants did not engage in FFS, and as a group they were broadly ambivalent towards the scheme. Those who did not attend an entry MOT (pre-introduction decliners) de-selected themselves out of the scheme on the basis of perceptions of not 'needing' to participate, or perceiving a large gap between what could be offered within a lifestyle intervention and what was relevant to their own health needs.

Those who had attended an entry MOT but did not remain within FFS to the end of the 12 weeks (post-introduction decliners) reported that they were interested in the scheme, rather than interested in joining the scheme. They reported being interested in what was being offered without having any pre-existing intention to take up these offers. They indicated disappointment with their results at the entry MOT, which they framed in terms of dissatisfaction or uncertainty about the credibility of the tests compared to their own instinctive beliefs about their health and anticipated results. They did not take up advice about diet and physical activity changes, and did not identify areas in their existing lifestyles that were compatible with joining a structured lifestyle intervention.

Health testing, diet and exercise

Within the narratives of the three levels of adherence, there is an emerging gradient of

acceptability or openness to change in the three main areas provided by FFS: testing, diet and physical activity.

The provision of free physiological testing was mentioned as a reason for choosing to attend FFS, for all of those in the sample who attended FFS at least once, even those who did not pursue FFS beyond the entry MOT. Although some interviewees were surprised and some disappointed by their results, no one reported feeling uncomfortable being tested, or being discouraged from attending by the prospect of taking part in the tests. Some interviewees even suggested that a wider range of tests needed to be provided, including allergy tests, and the offer of follow-up testing motivated some of the partial adherers to remain within the scheme even though they had already opted out of taking classes. Testing was acceptable, easy to access, required minimal input from the participant and did not require sustained effort to achieve.

For partial and complete adherers, making changes to the diet was preferable, easier, more affordable and more convenient than increasing physical activity. Changes to the diet do not necessarily demand more time, more facilities, more indirect expenses (such as childcare or transport) or greater regular commitments than already existing in their daily lives. Additionally, interviewees reported that, for those living in shared households, there is the potential for other people benefiting from changes to food buying, preparation and consumption patterns. Dietary information was also fairly easy to take home; food sheets were provided and there are plenty of accessible sources of information about food preparation and kitchen techniques within the popular media. Diet changes were mostly considered acceptable, fairly easy to access within the home and required minimal extra input from the participant. However, changes to the diet may incur additional direct expense and required changing buying and cooking habits in order to sustain the changes.

Increasing physical activity was the least well adhered to aspect of FFS, and under the classification offered here, distinguishes the complete adherers from the partial adherers. Physical activity potentially requires greater allocation of time, more travelling, direct and indirect costs (childcare, specialist clothing, subscription fees

where required) and in many cases represents a new commitment to take on and fit into existing lifestyles. Unlike changes made to a shared diet, increasing physical activity does not particularly benefit others in the household, unless they too increase their physical activity. There is also a less direct connection between being given information about increasing activity and the physical exertion required to develop and apply new physical skills and activities.

All groups acknowledged that physical activity required notable additional input from the participants and that long-term benefits required sustainable commitment to increasing physical activity. For the partial adherers, increasing physical activity was mostly considered an unacceptable demand on participants' time, and was not considered easy to access or convenient. Complete adherers considered physical activity acceptable and could identify and act on convenient and accessible routes to exercise and increasing activity. Completers also made reference to the enjoyment and noticeable improvements in their well being brought about by their increased physical activity.

For participants in FFS, testing was the most adhered to and most interesting part of FFS. Diet changes were the most easy to engage in outside the FFS setting and for those who had made changes there was a high level of self-reported sustainability of the modified diet. Physical activity increase was the least adhered to aspect of FFS for this sample, and even in those who reported making changes during FFS there was some concern that the increases would not be sustainable after the end of the intervention or the withdrawal of financial incentives/reductions.

Barriers and facilitators to adherence

Across all groups, work, childcare, studying, old age, lack of knowledge about community venues, fear of travelling locally alone, physical disabilities and perceptions of the scheme being inadequate to meet complex health needs, or to educate the already health conscious were identified as barriers to participating.

Community venues, access to free testing outside GP surgeries, free classes, discounts for activities, health advice, dietary plans and guidance, individualised information, motivation

and encouragement from staff, and support through coordinated advice and opportunity to follow the advice were all identified as facilitating participation.

Perceptions of age and gender were included in narratives both for and against attending FFS. Interviewees used 'at my age' to justify interest in making lifestyle changes as well explaining why lifestyle interventions were not appropriate or appealing. Some interviewees (both men and women) commented that 'you know what men are like', and suggested that community-based interventions that were not limited to GP settings were especially useful in reaching out to men who would otherwise not engage in check-ups and seeking out non-acute health advice. Wives, girlfriends and boyfriends were reported as accompanying men to FFS sessions. Three interviewees commented that the men had been 'persuaded' into attending, and that left to their own devices FFS would not appeal to the average, heterosexual man, who was viewed to be disinterested in his own health.

Support

One of the strengths of the FFS design was that it considered both agency and structural provision to engage the community in the intervention, increasing individual agency through the provision of advice, feedback and practical information and also providing community structure in Clapham Park for healthier living, through classes and alternative and affordable routes to participating in activities and testing. The mere presence of a healthy living initiative dedicated to Clapham Park increased the structural support for the local community, by broadening the range of 'what there is to choose from'.

Participants' attendance at the entry MOT increased their knowledge and awareness about their health through physiological testing, immediate feedback about the test results and consultation with a health professional. This can be characterised as raising personal agency for those attending, even if they did not pursue other aspects of the intervention after the MOT.

For some participants, an increase in personal agency emerges as an overt increase in the ability to make healthier food choices, through education and directive activity and diet advice. For

other participants this emerges less directly, and may perhaps be characterised as 'empowering' the participants by raising their health self-knowledge or alternatively as reassuring them that the choices they had already been making were having positive influences on their current healthiness.

However, it may not be satisfactory to delineate the two concepts when considering the scheme as it was experienced by its participants. While FFS increased the capacity for healthy living throughout the community in Clapham Park, *individually* this may not have been perceived as providing accessible or available structures due to functional barriers to participation. Similarly, FFS may not have been perceived to provide structures or opportunities that were *preferable* to what was already available.

It is possible that FFS may have increased both individual agency (awareness, knowledge, decision-making capability) and community structures (classes, activities and healthy priorities in locality) without the individual actually deciding to adhere to the scheme. Enhancing agency and structure is therefore experienced as having increased choice, both as the functional provision of opportunities and also as awareness and the attendant individual preferences, which can be synthesised into an emerging theme of 'support', considering not just agency and structure, but motivation and satisfaction too.

Support emerged as a key theme in facilitating attendance and adherence to a healthier lifestyle, through encouraging and motivating people to initiate and maintain healthy changes, as well as being a positive outcome for the individual to feel supported during their participation. Participants conceptualised support as one of the services provided by FFS, alongside the activities and information. Partial and complete adherers reported the experience of being supported or engaging in supportive sessions contributed to their sense that FFS was appropriate for them, and encouraged them to adhere to their lifestyle changes when they had 'slipped' or 'lapsed'.

However, for some interviewees the role of support was closely associated with a sense of dependency on the scheme to facilitate their lifestyle changes, as they did not identify with an equivalent, sustainable source of support outside FFS. For these participants, FFS may have

provided a form of motivation and facilitation to make lifestyle changes, but it did not facilitate the 'self-determined' or 'autonomous' motivation referred to in the introduction.

Personal gains and sustaining change

It may be conceptualised that the adherence groups represent different patterns of personal gain through their experience of the scheme. Ideally, participants would have benefited from increasing agency, structure and motivation through FFS. Complete adherers who demonstrated the development of autonomous motivation, as well as gaining agency, structure and support, are the most successful participants in FFS and represent an ideal level of adherence and sustainable change in their lifestyle.

Those who engaged with FFS but did not expect to be able to maintain their changes after the cessation of the intervention may be conceptualised as gaining in 'structure' and motivation but not 'agency' (Cockerham, 2005), and that the gain in structure has only the longevity of the scheme. Complete adherers may have gained the most during FFS but there are at least some concerns that this gain may not be sustainable for everyone in this group.

Conversely, those who took some benefit from the advice given at the MOTs, identified support in the testing, feedback and information aspects of FFS but did not engage with the activities may be conceptualised as demonstrating gain in agency and motivation without a gain in structure. Partial adherers, when considered in this way, may be successful participants in FFS as their own choices are sustainable, and the gains they made (agency and motivation) are transferable outside of the structure of an intervention even though they did not fully adhere to the scheme.

Conclusions and implications

These findings suggest that participants assessed the healthy lifestyle intervention in terms of how well it met their pre-existing needs and opportunities for change, and selected the aspects of the scheme that suited them, interested them and delivered salient results. For some participants this only involved taking part in the testing

stages, and not engaging in later organised activities, effectively dropping out of the scheme. For others this generated an almost dependent relationship between the participant and the scheme. The gradient between these two extremes is characterised by the nature of three functional aspects of the intervention: testing, diet change and physical activity, and the emerging theme of experiencing support.

Engaging in testing was the most accessible and acceptable form of the intervention; diet advice may be easier to integrate into pre-existing lifestyles than activity recommendations; and physical activity while the least accessible for the sample as a whole was the most satisfying and pleasurable aspect for those who engaged in social forms of activity, such as dance and walking groups. Interest in and broad acceptability of the health checks may have resonance with the NHS 'Life Check' policy, and the need to provide personalised information as a pathway to making health advice accessible and relevant (Department of Health, 2006b).

The findings discussed here largely fit with the previous research literature. There is some evidence to support existing research on the role of motivation in lifestyle changes, specifically that autonomous or self-determined motivation is an important feature in sustaining behaviour and change, as outlined in Thøgersen-Ntoumani and Ntoumanis (2006) and Williams *et al.* (2005). There is also some evidence here that pleasure from physical activity or satisfaction from the benefits observed in making lifestyle changes contribute to a desire to sustain the healthier lifestyle changes, as explored previously by Gardner and Hausenblas (2004) in reference to overweight women and Cale and Harris (2001) in reference to young people. In line with themes developed in the sociology of leisure literature (Thurston and Green, 2004), perceived social support functioned to motivate and sustain change, as well as acting as a precursor for increasing uptake. However, we find evidence for a stronger role of support in influencing uptake and maintenance of lifestyle changes in the perceptions of the interviewees, than previously indicated. Participants in the intervention considered support as one of the services offered, with comparable importance to the role of information provision. This offers potential implications for a

beneficial role of health trainers, trained and accredited professionals working in the community, providing practical support and providing links to sources of support and advice, who can also provide 'stock-takes' or non-medical assessment of their clients' lifestyle factors (Department of Health, 2004).

Using different adherence groups in the evaluation has offered some insight into participants who drop-out from or fail to fully adhere to interventions, a mostly under-researched group (Sorensen *et al.*, 2006). We find that they may still make personal health gains from the intervention even if they do not complete the course, and that realistic adherence levels during the length of a short-term intervention may be associated with more sustainable, transferable lifestyle changes. We also find grounds to suggest that in some cases full adherence to a scheme is not as likely to produce long-term adherence to lifestyle changes as compared to partial, but more realistic adherence and smaller lifestyle changes. Again, this may have resonance with current national policy through the 'Small change, big difference' campaign (Department of Health, 2006a). Engaging non-health organisations in the promotion of well-being lifestyle choices, such as FFS or through initiatives under the 'Small change, big difference' banner, can extend the reach of interventions into the community, recognising and responding to the 'local realities' outlined by the WHO guidance for implementing diet and physical activity interventions (WHO, 2007).

This study benefits from including participants with a range of adherence, and, by working in a setting outside of the original intervention, the experiences and views of those who dropped out from the scheme were not lost. By conducting the evaluation after the end of FFS, it has been possible to consider the experience of the cessation of an intervention and the subsequent experiences and successes (or not) of trying to sustain changes made within the intervention. However, this is a small-scale study, and may not capture the range of experiences and views held by those participating in FFS. In particular, we did not recruit people who had been dissatisfied with their experiences during their 12-week course within FFS, as indicated during the recruitment phases. One weakness of the study is that only a very small number of interviewees who did

not participate at all in FFS (pre-introduction decliners) were recruited. Future research may need to consider this group further to understand non-participation and self de-selection from community schemes.

The relationship between experiencing support and adhering to the intervention is not fully explored here. There is some indication that too little experience of support may be interpreted as the intervention not being for 'people like me' or not meeting the individual's needs, whereas too great an experience of support may be associated with dependency and externally generated motivation to adherence. The role of optimum support and how to achieve and deliver such support may be a suitable concern for future research, and healthy lifestyle interventions, particularly those that consider diverse communities, need to consider how to provide support for their intended participants as part of developing their services.

References

- Adami, H.O., Day, N.E., Trichopoulos, D. and Willett, W.C.** 2001: Primary and secondary prevention in the reduction of cancer morbidity and mortality. *European Journal of Cancer* 37(Suppl 8), S118–27.
- Archer, M.S.** 2000: *Being human. The problem of agency*. England: Cambridge University Press.
- Bandesha, G. and Litva, A.** 2005: Perceptions of community participation and health gain in a community project for the South Asian population: a qualitative study. *Journal of Public Health* 27, 241–45.
- Barnard, R.J.** 2004: Prevention of cancer through lifestyle changes. *Evidence-based Complimentary and Alternative Medicine* 1, 233–39.
- Blue, C.L. and Black, D.R.** 2005: Synthesis of intervention research to modify physical activity and dietary behaviours. *Research and Theory for Nursing Practice* 19, 25–61.
- Cale, L. and Harris, J.** 2001: Exercise recommendations for young people: an update. *Health Education* 101, 126–38.
- Cockerham, W.C.** 2005: Health lifestyle theory and the convergence of agency and structure. *Journal of Health and Social Behaviour* 46, 51–67.
- Department of Health.** 2004: *Choosing health: making healthier choices easier*. London: HMSO. Retrieved June 2006, from http://www.dh.gov.uk/PublicationsAndStatistics/Publications/PublicationsPolicyAndGuidance/PublicationsPolicyAndGuidanceArticle/fs/en?CONTENT_ID=4094550&andchk=aN5Cor.
- Department of Health.** 2006a: *Health challenge England: the next steps for choosing health*. London: DH Publications.

- Retrieved January 2007, from <http://www.dh.gov.uk/assetRoot/04/14/03/33/04140333.pdf>.
- Department of Health.** 2006b: *Our health, our care, our say: a new direction for community services*. London: HMSO. Retrieved January 2007, from <http://www.dh.gov.uk/assetRoot/04/12/74/59/04127459.pdf>.
- Dixon-Woods, M., Agarwal, S., Jones, D., Young, B. and Sutton, A.** 2005: Synthesising qualitative and quantitative evidence: a review of possible methods. *Journal of Health Services Research and Policy* 10, 45–53.
- Dugdill, L., Graham, R.C. and McNair, F.** 2005: Exercise referral: the public health panacea for physical activity promotion? A critical perspective of exercise referral schemes; their development and evaluation. *Ergonomics* 48, 390–1410.
- Fontaine, K.R., Barofsky, I., Andersen, R.E., Bartlett, S.J., Wiersema, L., Cheskin, L.J. and Franckowiak, S.C.** 1999: Impact of weight loss on health related quality of life. *Quality of Life Research* 8, 275–77.
- Gardner, R.E. and Hausenblas, H.A.** 2004: Understanding exercise and diet motivation in overweight women enrolled in a weight-loss program: a prospective study using the theory of planned behaviour. *Journal of Applied Social Psychology* 34, 1353–70.
- Hagberg, L.A. and Lindholm, L.** 2005: Is promotion of physical activity a wise use of societal resources? Issues of cost-effectiveness and equity in health. *Scandinavian Journal of Medicine and Science in Sports* 15, 304–12.
- Harrison, R.A., McNair, F. and Dugdill, L.** 2005: Access to exercise referral schemes – a population based analysis. *Journal of Public Health* 27, 326–30.
- Harrison, R.A., Roberts, C. and Elton, P.J.** 2004: Does primary care referral to an exercise programme increase physical activity 1 year later? A randomised controlled trial. *Journal of Public Health* 27, 25–32.
- Hausenblas, H.A. and Fallon, E.** 2006: Exercise and body image: a meta-analysis. *Psychology and Health* 21, 33–47.
- Hillsden, M., Thorogood, M., White, I. and Foster, C.** 2002: Advising people to take more exercise is ineffective: a randomised controlled trial of physical activity promotion in primary care. *International Journal of Epidemiology* 31, 808–15.
- Johnson-Kozlow, M.F., Sallis, J.F. and Calfas, K.J.** 2004: Does less stress moderate the effects of a physical activity intervention? *Psychology and Health* 19, 479–89.
- Kaewthummanukul, T., Brown, K.C., Weaver, M.T. and Thomas, R.R.** 2006: Predictors of exercise participation in female hospital nurses. *Journal of Advanced Nursing* 54, 663–75.
- Kerse, N., Raina, E.C., Robinson, E. and Arroll, B.** 2005: Is physical activity counselling effective for older people? A cluster randomised controlled trial in primary care. *Journal of American Geriatrics Society* 53, 1951–56.
- Lawlor, D.A. and Hanratty, B.** 2001: The effect of physical activity advice given in routine primary care consultations: a systematic review. *Journal of Public Health Medicine* 23, 219–26.
- Liberopoulos, E.N., Tsouli, S., Mikhailidis, D. and Elisaf, M.** 2006: Preventing Type 2 diabetes in high risk patients: an overview of lifestyle and pharmacological measures. *Current Drug Targets* 7, 211–28.
- Lindstrom, J., Peltonen, M. and Tuomilehto, J.** 2005: Lifestyle strategies for weight control: experience from the Finnish Diabetes Prevention Study. *Proceedings of the Nutrition Society* 64, 81–88.
- McNeill, L.H., Kreuter, M.W. and Subramanian, S.V.** 2006: Social environment and physical activity: a review of concepts and evidence. *Social Science and Medicine* 63, 1011–22.
- Mancuso, C., Sayles, W., Robbins, L., Phillips, E., Ravenell, K., Duffy, C., Wedneroth, S. and Charlson, M.** 2006: Barriers and facilitators to healthy physical activity in asthma patients. *Journal of Asthma* 43, 137–43.
- Morgan, O.** 2005: Approaches to increase physical activity: reviewing the evidence for exercise-referral schemes. *Journal of Public Health* 119, 361–70.
- Robison, J. and Roberts, M.** 1994: Adherence to exercise programmes. *Sports Medicine* 17, 39–52.
- Sartorelli, D.S., Sciarra, E.C., Franco, L.J. and Cardoso, M.A.** 2005: Beneficial effects of short-term nutritional counselling at the primary health care level among Brazilian adults. *Public Health Nutrition* 8, 820–25.
- Sevick, M.A., Dunn, A.L., Morrow, M.S., Marcus, B.H., Chen, G.J. and Blair, S.N.** 2000: Cost effectiveness of lifestyle and structured interventions in sedentary adults. *American Journal of Preventative Medicine* 19, 1–8.
- Sibeon, R.** 1999: Agency, structure and social change as cross-disciplinary concepts. *Politics* 19, 139–44.
- Sorensen, J.B., Skovgaard, T. and Puggaard, L.** 2006: Exercise on prescription in general practice. a systematic review. *Scandinavian Journal of Primary Health Care* 24, 69–74.
- Taket, A., Crichton, N. and Gauvin, S.** 2006: Flora Fit Street Final Report (Available from authors).
- Thøgersen-Ntoumani, C. and Ntoumanis, N.** 2006: The role of self-determined motivation in the understanding of exercise-related behaviours, cognitions and physical self-evaluations. *Journal of Sports Sciences* 24, 393–404.
- Thurston, M. and Green, K.** 2004: Adherence to exercise in later life: how can exercise on prescription programmes be made more effective? *Health Promotion International* 19, 379–87.
- Williams, G.C., Gagne, M., Mushlin, A.I. and Deci, E.** 2005: Motivation for behaviour change in patients with chest pain. *Health Education* 105, 304–21.
- World Health Organisation.** 2004: *Resolution WHA57.17 Global strategy on diet, physical activity and health*. Geneva: WHO Press.
- World Health Organisation.** 2007: *A guide for population based approaches to increasing levels of physical activity: implementation of the WHO global strategy on diet, physical exercise and health*. Geneva: WHO Press.