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Lifestyle intervention

A study on maintenance in general practice

Aim

This article aims to explore the factors contributing to sustained or nonsustained behaviour change following a lifestyle intervention in general practice.

Methods

Twenty patients who had participated in a general practice health check and group lifestyle support program were interviewed by telephone after 12 months. The interviews were transcribed and analysed thematically.

Results

Patients reported positive effects of the intervention on their behaviour change, especially the group peer support. However, their maintenance of these changes varied. Factors that contributed to sustained behaviour change included social support and self efficacy. Factors contributing to relapse included competing demands on time, comorbidity and stress.

Discussion

Greater attention needs to be given to maintenance of behaviour change in lifestyle management programs. Following completion of the program, there needs to be greater support for relapse prevention and management and effective integration back into general practice.

Keywords: risk reduction behaviour; lifestyle; health behaviour; interviews; qualitative research

Chronic diseases such as cardiovascular disease and diabetes are a major contributor to the burden of disease in Australia.¹ Primary prevention of these conditions requires management of a number of physiological and behavioural risk factors which are common in patients presenting to general practice.² Although factors such as smoking, nutrition, alcohol and physical activity (SNAP) need be addressed by policies and programs outside the health system, there are a number of effective interventions that health providers can offer.³⁻⁵ While there are frequent opportunities to intervene in general practice, there is evidence that this is not routinely part of current practice.⁶⁻⁸ This is due to a range of factors including lack of time and skill and the capacity to provide interventions of sufficient intensity to prevent chronic diseases such as diabetes.^{9,10}

One strategy to address these capacity constraints is to develop programs that articulate with brief assessment and interventions in general practice. For example, as part of the Council of Australian Governments (COAG) diabetes prevention initiative, divisions of general practice and state health services developed group lifestyle programs to which general practitioners could refer their patients.^{11,12} These had difficulty attracting sufficient referrals and achieving population coverage leading to a suspension of the accreditation of new programs from December 2009.¹³

The Health Improvement and Prevention Study (HIPS) aimed to evaluate the impact of a practice and group based intervention to support patients at risk for developing vascular disease and to modify their behavioural risk factors.¹⁴ This

involved patients attending their GP for a health check with referral of at risk patients to an allied health provider for assessment followed by a group lifestyle program (four 90 minutes sessions with a further two follow up sessions at six and 9 months), conducted through the local division of general practice. The group sessions included education, a physical activity exercise, and self management strategies to support change in diet and physical activity. The program was based on the 'Counterweight' program developed in the United Kingdom with sessions focusing predominantly on developing patient skills to improve their nutrition and physical activity.⁵ The current study followed these patients to determine to what extent risk behaviours were changed and maintained and the factors that contributed to sustained behaviour change.

Methods

Sample

Patients aged 40–65 years of age were recruited from 30 practices within two rural and three urban divisions of general practice. Practices were randomised to intervention and control groups (16 intervention and 14 control groups). One hundred and seventeen patients attended the interventional GP health check, an assessment by an allied health provider and at least two of the group lifestyle program sessions.

At the 12 month interval, 40 patients who attended the minimum number of the referral sessions were randomly selected (after stratification into two groups – urban and rural) and mailed an invitation to participate in semistructured telephone interviews.

Data collection

Patients were interviewed by telephone for approximately 20 minutes and asked a set of

questions from a structured interview schedule. These questions had been piloted in previous studies.^{7,9} They were used to qualitatively assess the recollections of patients regarding the GP consultation and the lifestyle intervention itself, before focusing on the retention and practice of the modified lifestyle habits. Interviews were recorded and transcribed verbatim.

Analysis

The transcripts were analysed thematically. An initial set of descriptive codes was grouped into the broader codes. This framework and the coding were reviewed by all the authors at weekly meetings. The process was repeated interactively to identify cross cutting themes and a comparative analysis was conducted between patients who were able to sustain behaviour changes and those who were not.

The study was approved by the Human Research Ethics Committee of the University of New South Wales. All interviewees gave full written informed consent.

Results

Twenty patients participated: 10 in urban Sydney and 10 from rural New South Wales (NSW). Twelve were female and all were 50 years of age or older (14 were 60 years or older) (*Table 1*).

Patient experience of the intervention and its immediate impact

Most patients could recall the GP visit and said they felt more involved in their medical care when they discussed their health risks with their GP. Most patients gave positive feedback on the group lifestyle intervention, saying that it helped them to change their habits. Many patients appreciated the group style design of the intervention, seeing positive outcomes from getting peer support while attending group sessions.

'The gentleman... he was great and being in a group session and talking and realising that other people were going through it as well, and that they were achieving something... you wanted to achieve the weight loss as well. And yeah I think they were beneficial.'

They also reported learning new skills such as reading food labels and self monitoring:

'They taught us to write things down, the daily food intake, and they gave us a pedometer, so you

were recording when you were walking, how far you were walking, and how you felt.'

Most patients reported that the program had a beneficial effect on their lifestyle. Some patients reported losing weight due to the effects of the lifestyle intervention.

'I became more active, do more exercise, or did more exercise for quite a period of time, and I think I've lost um something like about 10 kilos in weight, which I've kept off.'

'I gained a lot of knowledge... for example I now, when I go shopping, because of that program I always look at the fat content, the sugar content, the salt content of foods. So I gained a lot of knowledge that helped me to choose the right foods.'

Maintenance

Many patients described maintaining some lifestyle changes:

'My weight has come down and it's stayed down and I'm grateful for that.'

'Oh yeah, no I've sort of been motivated enough to sort of, you know fit at least a half hour or so, or a minimum every day. Oh I'm self motivated enough to work my program around that, and maintain that, yeah.'

However, some patients have not been able to maintain healthy lifestyle habits to the degree they would have liked and reported relapsing, especially in weight control.

'... I lost about 5–6 kilos, but I put it all on again anyway.'

'I'm still the same weight, I weigh more now than I did back then, I weigh more now than I have for 30 years.'

Most patients identified time as a barrier to maintaining lifestyle change; blaming other commitments and constraints on time as reasons for incomplete adherence.

'Oh, don't get a lot of time really, pretty long hours really. I don't know, it's only after work that you can probably go, this time of the year anyway, winter time. You'd have to go to a gym or some bloody thing.'

Some of the interviewees had comorbidities, stressors in their lives and other psychological factors that affected their capabilities to initially bring about behaviour change, or to maintain behaviour change once it was achieved. These comorbidities and stressors were quite varied but

each had a significant effect on their quality of life.

'Yeah like I said the depression, I've been going through... I've been battling it for 4 or 5 years now, I felt that had a lot to do with it' [inability to change behaviour].

Patients also found that social support could sometimes be negative:

'It's very easy to slip back into old habits, it's very easy when you sit around with the family, like I said we have a very extended family so close, there's always a get together. And it's so easy to overeat and so easy to eat the cakes and the sweets and that, because I have a sweet tooth and I find it hard to say no to sweets.'

Those who were successful at maintaining behaviour change were more likely to focus on the positive impacts of their lifestyle change.

Patients also identified motivators and aids to behaviour change maintenance in their lifestyle. Some participants acknowledged that family members were a significant motivator and aid to changing behaviour and then maintaining such behaviour.

'... So that helped a lot, I already had some knowledge and had support from my wife, she's done weight programs and that sort of thing.'

Others said that their confidence and self esteem were motivating factors in maintaining improved health behaviours.

'When I did lose that little bit of weight I did feel better, I look better, I look more confident, I feel more comfortable in my clothes, and because I don't want to go back to carrying that extra weight, that is a reminder to do the right thing.'

Some said that the group process of the lifestyle intervention and being a member of any group was a motivating factor in sustaining healthy habits.

'Well I have a lot of friends doing the same thing, so I don't want to be left behind. They're all marching ahead, losing weight, getting fit.'

Coping strategy in failure of maintenance

Although there was a session on maintenance and relapse management, few of the participants were able to identify strategies that they used to cope when their attempts to sustain behaviour change lapsed.

'I don't get too upset with myself if I have a slip.'

Lack of ongoing mentoring was mentioned, with some requesting more follow up or ongoing support:

Table 1. Characteristics of participants

Patient	Location	Age (years)	Gender	BMI baseline	Place of birth	Highest qualification	Employment
1	Urban	50–54	F	24.2	Overseas	University/TAFE	Employed
2	Urban	60–64	M	27.8	Australia	High school	Retired
3	Urban	65–69	M	24.7	Australia	University/TAFE	Unemployed
4	Urban	60–64	F	21.8	Australia	University/TAFE	Retired
5	Urban	65–69	F	27.2	Australia	High school	Retired
6	Urban	55–59	M	28.4	Overseas	University/TAFE	Employed
7	Urban	65–60	F	29.6	Australia	High school	Retired
8	Urban	60–64	F	23.9	Overseas	High school	Employed
9	Urban	60–64	F	29.4	Australia	High school	Retired
10	Urban	60–64	M	22.9	Overseas	University/TAFE	Employed
11	Rural	50–54	F	40.4	Australia	University/TAFE	Employed
12	Rural	60–64	M	23.4	Australia	University/TAFE	Employed
13	Rural	60–64	F	29.5	Australia	University/TAFE	Retired
14	Rural	50–54	M	27.9	Australia	High school	Unemployed
15	Rural	60–64	M	31.2	Australia	University/TAFE	Retired
16	Rural	60–64	F	20.8	Australia	High school	Employed
17	Rural	60–64	M	38.6	Australia	Primary School	Retired
18	Rural	55–59	F	26.2	Australia	University/TAFE	Employed
19	Rural	60–64	F	26.1	Australia	University/TAFE	Unemployed
20	Rural	55–59	F	28.0	Australia	High school	Employed

‘We needed to have a strong mentor there that was following up with us and also to have some group support.’

‘You know if the program was more ongoing? You know instead of ending, you know that’s it you’re on your own.’

Discussion

Most patients gave positive feedback on the intervention and many felt more involved in their care and reported at least some impact on their lifestyle. However, their ability to maintain this varied. Those who maintained their lifestyle tended to focus on the positive impact of their lifestyle. They cited the importance of self efficacy in making the lifestyle change and social support from family and friends. Those who were not able to maintain their lifestyle change cited practical difficulties including lack of time (especially for physical activity) and difficulty experienced because of comorbidities or psychological stress. Few reported knowledge or use of specific strategies to deal with relapse.

These findings are broadly consistent with the ‘props and burdens’ (physical, psychological, social and environmental barriers and facilitators) identified by Penn et al¹⁵ to be significant factors that could influence behaviour change

maintenance in the European Diabetes Prevention study. Maintenance of behaviour change requires persistent effort over time. Patients need to be provided with plans or strategies for relapse prevention and management, especially in the presence of comorbid depression or stress.¹⁶ Peer support, information and follow up are also likely to be important.¹⁷

This has important implications for the design of lifestyle management programs in Australian primary healthcare. There is a need for more attention to long term relapse prevention and coping strategies to be included in these programs and for follow up support to be provided through patients usual primary care providers. This follow up support by the practice nurse or GP requires funding. There also needs to be more effective communication from the lifestyle programs back to general practice to ensure continuity and a consistent approach. Patients with comorbid conditions, including depression and psychosocial stressors, are likely to be particularly vulnerable to relapse.

This study was limited by the methods of recruiting participants to interviews. By only inviting patients who attended the allied health provider assessment and two sessions or more of the lifestyle intervention, patients were selected that were more likely to adhere to behaviour change.

The study was also limited by the subjective nature of self reporting by the patients on their behavioural change maintenance.

Conclusion

Patients reported short term positive impact of the health check and group program on their lifestyle behaviour. However, their maintenance of these changes varied. Factors that contributed to sustained behaviour change included social support and self efficacy. Factors contributing to relapse included competing demands on time, comorbidity and stress, suggesting the importance of skills in managing stress. Perhaps most importantly, programs need to be designed with continuing peer support and follow up in general practice.

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References

1. Australian Institute of Health and Welfare 2006. Chronic diseases and associated risk factors in Australia. Cat. No. PHE 81. Canberra: AIHW, 2006.
2. Britt H, Miller GC, Charles J, et al. General practice activity in Australia 2008–09. General Practice series no. 25. Cat.no. GEP 25. Canberra: AIHW, 2009.
3. Stevens VJ, Obarzanek E, Cook NR, et al. Long-term weight loss and changes in blood pressure: results of the Trials of Hypertension Prevention, Phase II. *Ann Intern Med* 2001;134:1–11.
4. Tuomilehto J, Lindström J, Eriksson JG, et al. Prevention of type 2 diabetes mellitus by changes in lifestyle among subjects with impaired glucose tolerance. *N Engl J Med* 2001;344:1343–50.
5. Counterweight Project Team and Trueman P. Long-term cost-effectiveness of weight management in primary care. *Int J Clin Pract* 2010;64:775–83.
6. Britt H, Miller GC, Charles J, et al. General practice activity in Australia 1990–00 to 2008–09: 10 year data tables. AIHW: Canberra, 2009. Available at www.aihw.gov.au/publication-detail/?id=6442468307 [Accessed 22 August 2011].
7. Amoroso C, Harris MF, Ampt M, et al. Health check for 45–49 year old patients in general practice: feasibility and impact on practices and patient behaviour. *Aust Fam Physician* 2009;38:358–62.
8. Denney Wilson E, Wan Q, Vagholkar S, Shutze H, Harris MF. Routine assessment and management of lifestyle risk factors in general practice: results from two randomised controlled trials. *Aust Fam Physician* 2010;38:950–3.
9. Harris MF, Hobbs C, Powell Davies G, et al. Implementation of a SNAP intervention in two divisions of general practice: a feasibility study. *Med J Aust* 2005;183:s54–8.
10. Norris SL, Zhang X, Avenell A, et al. Long-term effectiveness of weight-loss interventions in adults with pre-diabetes: a review. *Am J Prevent Med* 2005;28:126–39.
11. Council of Australian Governments. Council of Australian Governments' Meeting Communiqué, 10 February 2006: Better health for all Australians. Available at www.coag.gov.au/coag_meeting_outcomes/2006-02-10/index.cfm [Accessed 20 October 2011].
12. Department of Health and Ageing. Health Budget 2007–2008 COAG – reducing the risk of type 2 diabetes. Available at www.health.gov.au/internet/budget/publishing.nsf/Content/budget2007-hfact31.htm [Accessed 20 October 2011].
13. Australian General Practice Network. Prevention of type 2 diabetes: information for health professionals. 2010. Available at www.agpn.com.au/programs/prevention-of-type-2-diabetes-program/information-for-health-professionals [Accessed 20 January 2011].
14. Fanaian M, Laws RA, Passey M, et al. Health improvement and prevention study (HIPS) – evaluation of an intervention to prevent vascular disease in general practice. *BMC Fam Pract* 2010;11:57.
15. Penn L, Moffatt SM, White M. Participants' perspective on maintaining behaviour change: a qualitative study within the European Prevention Study. *BMC Public Health* 2008;8:234.
16. Sniehotta FF, Schwarzer R, Scholz U, Schuz B. Action planning and coping planning for long-term lifestyle change: theory and assessment. *Eur J Soc Psychol* 2005;35:565–76.
17. Winkleby MA, Flora JA, Kraemer HC. A community-based heart disease intervention: predictors of change. *Am J Public Health* 1994;84:767–72.

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