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Abstract

This study assessed the feasibility of a telephone lifestyle coaching intervention for middle aged and older men in a service club setting and evaluated its impact on behavioural change in terms of BMI, physical activity, dietary habits, self-reported quality of life and stages of change. Forty participants from Rotary clubs in Western Australia participated in this pilot intervention. Findings showed significant improvements in lifestyle risk modification indicators. Participants were very satisfied with the interaction with their coaches and rated highly the telephone as a medium for coaching. Findings suggested that telephone coaching was a feasible means of delivering a lifestyle intervention in a 'real-world' setting for a hard to reach population group.

Keywords

Body Mass Index, chronic illness, community health promotion, lifestyle coaching, nutrition, physical activity, Waist Disposal Challenge

Background and objectives

Caring for populations who are living longer with chronic conditions is undoubtedly the major health care challenge of this century for many developed countries (Bodenheimer et al., 2002; Bury and Ink, 2005; Commonwealth of Australia, 2008; Jordan and Osborne, 2007; Lorig et al., 2005). Producing long-term, cost-effective public health impact is now the primary concern for interventions in lifestyle risk modification (Eakin et al., 2007; Foster et al., 2008; Kelly et al., 2003; Lindner et al., 2003a, 2003b; VanWormer and Boucher, 2004). However, the development and delivery of an

effective strategy to assist people to alter their lifestyle and behaviour has been challenging. People at risk or living with chronic conditions need to develop and continue practising complex self-management strategies (Heisler, 2006) as these behaviours result in better use of health

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professionals' time, better self-care and clear clinical benefits (Jordan and Osborne, 2007). Thus, there has been a growing emphasis on formal self-management education programmes (Heisler, 2006; Jordan and Osborne, 2007).

Communication technology, that is, the telephone, computers and the Internet, has been used to deliver lifestyle interventions and to encourage chronic disease self-management. Telephone assisted counselling demonstrated the clearest advantages including: participants and counsellors are not confined by distance, transportation or access to services; there are more possibilities for contact wherever a telephone is available; and its use requires little or no travel time (Castro and King, 2002). Further, the telephone enables communication with individuals in their own homes and facilitates disease management in a timely manner (Piette, 2005).

Excess body weight is an important contributor to medical risk for chronic diseases. This is most effectively addressed by increasing physical activity and adopting a lower kilojoules diet (Dieticians Association of Australia, 2008). Improving these two lifestyle factors has resulted in improvements in Body Mass Index (BMI) and various health-related quality of life indicators (Dieticians Association of Australia, 2008; Hassan et al., 2003; Stewart et al., 2008).

Improvements in physical activity levels have been demonstrated in many telephone-based lifestyle interventions (Castro and King, 2002; Eakin et al., 2009; King et al., 2007; Kolt et al., 2007; Opendacker and Boen, 2008) and a recent systematic review suggested this approach may facilitate long-term effectiveness of physical activity and dietary behaviour interventions (Muller-Riemenschneider et al., 2008). Telephone-based lifestyle interventions focusing on physical activity and dietary changes were delivered to various participant groups, including primary care patients, coronary heart disease patients, people at risk of developing cancer and healthy adults, with some interventions demonstrating significant benefits (Eakin et al., 2007, 2009).

Recent reports have highlighted men's special health challenges (AIHW, 2010b). They

live an average of 7.7 years less than women, die prematurely, experience disproportionately higher morbidity rates, have higher levels of disease risk, higher rates of chronic illnesses and a lack of focus on preventive care, particularly those living in rural areas (AIHW, 2010a, 2010b; Aoun and Rosenberg, 2002; Buckley and Lower, 2002; Egger, 2000; Schofield et al., 2000; Smith et al., 2006). One out of four male participants in a rural Australian study reported that they cared little about their body size and appearance and believed that everyone will 'die of *something*, so they might as well enjoy what they are eating'; 20 per cent also held the view that 'being physically big for a man has its advantages' (O'Kane et al., 2008).

Telephone-based health care services may benefit people living in rural areas, especially rural men. A pilot study of rural men living in the mid-west of Western Australia (WA) found a significant proportion of men reported that they would rather use the telephone than visit a health service (Buckley and Lower, 2002). Furthermore, health professionals in rural areas reported difficulties in providing advice to their patients due to time constraints and their lack of training in lifestyle education and counselling (Aoun et al., 2002). Piette (2005) suggested that telephone counselling would be most beneficial to patients who need reminders, monitoring, self-management information and coaching. However, the delivery of an effective, evidence-based intervention to facilitate physical activity and dietary changes remains a challenge at the community level, such as men targeted in this study from Rotary clubs.

Rotary International is an organization of service clubs known as Rotary Clubs. There are more than 32,000 clubs and over 1.2 million members world-wide. The purpose of the organization is to bring together business and professional leaders to provide humanitarian service, encourage high ethical standards in all vocations and help build goodwill and peace in the world (Rotary International, 2011). Service clubs such as Rotary, Lions and Apex have been used as settings for health promotion (Apex

Australia, 2010; Lions Club, 2010; Rotary District 9465, 2010; Rotary International, 2011), but not in a longer-term programme of lifestyle risk modification such as the one described in this article.

The objectives of this study were to evaluate the impact of a pilot intervention in telephone lifestyle coaching on several health indicators and to assess the suitability, acceptability and appropriateness of data collection instruments. As such, this article presents quantitative and qualitative findings from pilot testing of a telephone lifestyle coaching programme implemented in a community setting through the 'Waist Disposal Challenge' (WDC).

The Waist Disposal Challenge

Lifestyle coaching is the third level of a three-tier innovative health intervention called the WDC (Aoun et al., 2009). This pilot intervention was delivered in 23 Rotary Clubs of District 9460 (recently changed to 9465) of WA, 2007–2008, comprising a membership of about 750 Rotarians. Nearly two-thirds of participating clubs were in rural areas, with distances varying between 200km and 800km from the capital city of Perth.

The objective of the WDC was to reduce the BMI of club members and improve their lifestyle behaviour. All participants were male. The project was designed to deliver health benefits at three levels, each level reinforcing the next. At Level One, up to three educational presentations on nutrition, physical activity and other healthy lifestyle habits were delivered to club members during normal club meetings. Level Two is a BMI Competition, facilitated by club Champions (volunteers) and a competition between clubs as an incentive (with monthly weigh-ins and a Leader Board on www.waistdisposalchallenge.com.au).

At Level Three, a telephone lifestyle coaching programme, consisting of four sessions, was offered to Rotarians with BMI 27 and over. Lifestyle coaches adopted the motivational interviewing (MI) technique, which has been

proven effective for individuals who are less willing to change their behaviours (Butterworth et al., 2006). Coaches rely primarily on reflective listening and positive affirmations rather than direct questioning, persuasion or advice giving (Alexander et al., 2010; Resnicow et al., 2008).

Methodology

Ethics approval for this project was granted by Curtin University Research Human Ethics Committee. Recruitment from Rotary clubs was facilitated by the Champions who approached members whose BMI was 27 or over, after completing Level Two, and encouraged them to take up Level Three of the WDC intervention. When invited members consented to participate, their telephone number was provided to the lifestyle coach to arrange an appointment for their first session. Recruitment from clubs was staggered. Participants were required to complete a lifestyle questionnaire prior to each session to form the basis of discussion at the coaching session. A copy of the completed questionnaire was sent to their assigned coach who then made contact to organize the time of the telephone coaching sessions with the participants. Four female dietitians, trained to be lifestyle coaches, coached participants in Rotary clubs located in their areas. During each session, a brief coaching contract was developed by the Rotarian and their coach. A copy was sent to participants to remind them of the goals they needed to achieve by the next session. The written contract aimed to provide increased ownership and commitment to self-management by focusing on strategies that assist in reducing weight and achieving other health-related goals. The coaching programme was delivered through four sessions, first at baseline and then at the first, third and fifth months after the baseline.

Data collection

Data were collected from two sources.

The lifestyle questionnaire. This is a self-administered questionnaire, which was completed by participants four times, at baseline and before each coaching follow-up session. The following variables are included:

- Demographics: age, BMI, general health conditions, ongoing medications and co-morbidities.
- Nutrition and diet: the Fat and Fibre Barometer has been found to be an accurate dietary assessment tool with the Cronbach's alpha coefficient of 0.86 and test-retest reliability ($r = 0.92$) (Lee et al., 2011; Wright and Scott, 2000). A scale from 20 to 100 is used where 20 represents intake of low-fibre/high-fat food, and 100 denotes high-fibre/low-fat consumption (Wright and Scott, 2000).
- Quality of life: the Short Form 36 Health Survey (SF36) measures quality of life on eight dimensions of physical and mental functioning: physical functioning; role-physical; bodily pain; general health; vitality; social functioning; role-emotional; and mental health (Ware and Sherbourne, 1992). Reported reliability is high (Cronbach's alpha > 0.85) (Brazier et al., 1992).
- Physical activity: the Active Australia Survey was used to measure participation in physical activity. Participants were classified into one of the three categories: sufficient (at least 150 minutes in physical activity per week and five sessions), insufficient (less than 150 minutes) or sedentary (no physical activity). This tool has intraclass correlation coefficients from 0.71 to 0.86 and Spearman's Rho from 0.54 to 0.77 (AIHW, 2003).

The feedback survey. A second self-administered questionnaire was mailed to each participant at the conclusion of the intervention. The questionnaire was designed to elicit information about the experience with coaching and overall satisfaction with the programme.

Statistical analysis

Analyses were conducted using Statistical Package for Social Science (SPSS) version 17. Frequency distributions and measures of central tendency were performed. Friedman statistical test, paired two-tailed Student's *t*-tests, and two-way repeated measures were used to find statistical significance over time. All tests were two-tailed and an alpha level of 0.05 set as the criterion for statistical significance.

Results

Participants

Four hundred and eleven Rotarians participated in the BMI competition and out of those, 307 had BMI ≥ 27 so were eligible to take part in the lifestyle coaching. Forty-nine (16%) agreed to participate and of these, 40 participants actually completed the baseline self-administered questionnaire and participated in at least one coaching session (attrition rate = 18%). By the time the study concluded after one year, 19 participants had completed all four lifestyle coaching sessions (48%), 25 participants had completed three sessions (62%), 33 had completed two sessions (82%). This article includes results from the two cohorts who completed three and four sessions as there were differences between the two cohorts in some variables.

Participants were all male and lived mainly in rural areas (79%). Participants who completed four sessions were older ($n = 19$, mean 64.3 years, SD 11.4) than those who completed three sessions ($n = 25$, mean 62.3 years, SD 11.9); the difference was not significant because of the small sample sizes. The chronic disease profile of participants was as follows: 35 per cent had two or more co-morbidities; 26 per cent had cholesterol and were on lipid regulating agents; 29 per cent had hypertension and were on antihypertensive agents; 24 per cent were also taking antiplatelet agents.

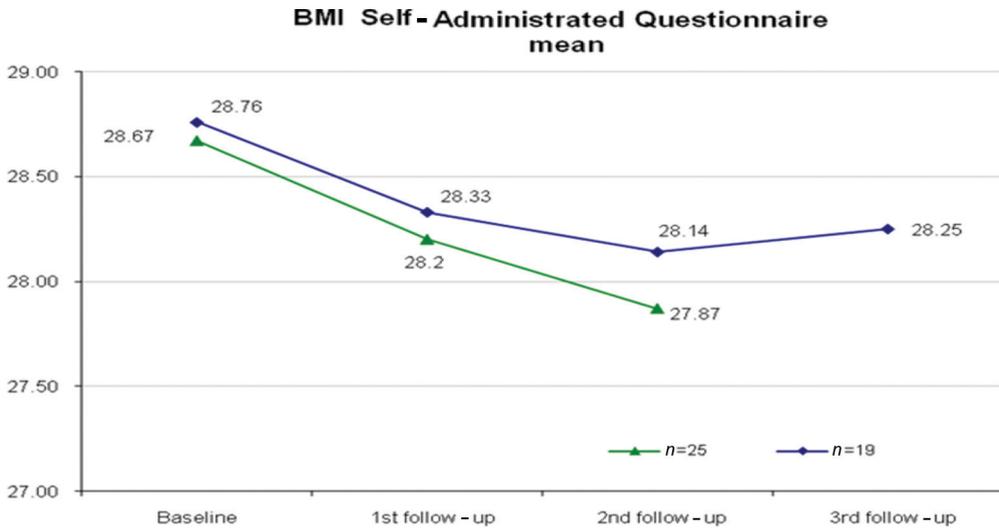


Figure 1. Mean BMI.

Coaching sessions

The median duration of coaching sessions from baseline to last follow-up decreased from 30 minutes (range from 23.4 to 75.0 minutes) to about 20 minutes (range from 4.3 to 45.0 minutes). The first session (baseline) was the longest as it was necessary to develop a good rapport between the coach and the client and to establish a plan of action to be achieved by the next coaching session. Generally coaches had to telephone the participants twice to make arrangements for undertaking the sessions (range: one to six attempts).

Barriers to participation

The main barriers to participants continuing in the coaching sessions were: work commitments and busy everyday life ($n = 12$); physical problems ($n = 11$), such as painful legs, sore backs and back injuries, relapse of cancer, biopsy for prostate cancer; lack of motivation and low priority ($n = 5$); seasonal travelling every year ($n = 4$); and emotional issues ($n = 3$), such as loneliness because they lost their wives.

Weight loss

Mean reduction of BMI was significant for both cohorts of participants who completed three ($p = .007$) and four sessions ($p = .021$) (Fig. 1). It is worth noting that participants who completed four sessions experienced some slight weight gain between the third and fourth coaching sessions and this pattern continues in all the measures that follow.

Dietary habits

The enhancement of healthy dietary habit was significant ($p = .010$) for those who completed four sessions, with a slight drop by the fourth session. The improving dietary trend was more significant ($p = .009$) for those who participated in three sessions (Fig. 2).

Quality of life

Most SF36 quality-of-life scores improved between baseline and the last follow-up session. This improvement was more significant for mental health summary and vitality, for both groups. For mental health summary, $p = .009$

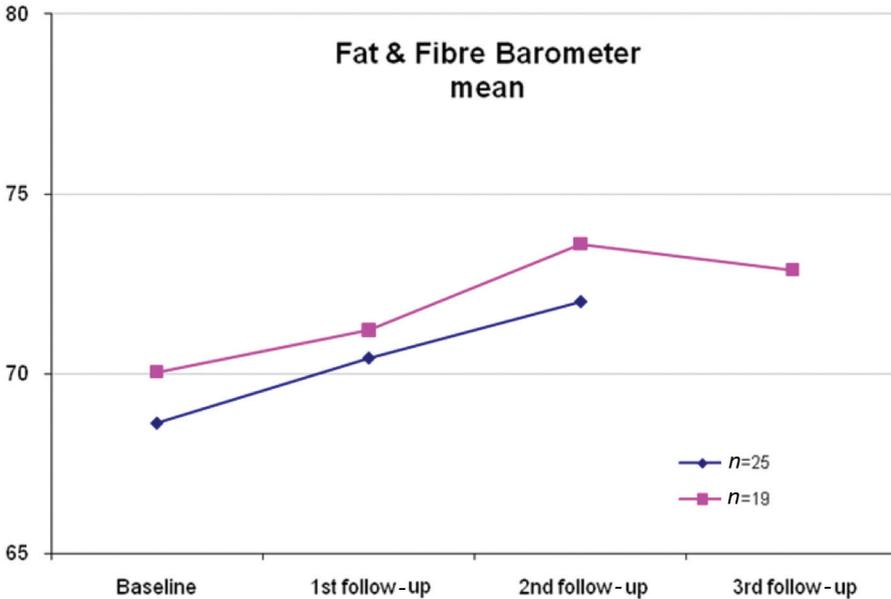


Figure 2. Mean scores for Fat & Fibre Barometer.

for those who completed three sessions, and $p = .024$ for those who completed four sessions. For vitality, $p = .036$ for those who completed three sessions, and $p = .035$ for those who completed four sessions.

Physical activity

Almost two-thirds of the participants (61%; $n = 11$) were undertaking sufficient physical activity at baseline to maintain good health. This percentage rose to 74 per cent ($n = 14$) at the fourth session. Participants who completed three sessions increased their average time per week from 215 minutes to 244 minutes (though not statistically significant) while those who completed four sessions maintained 252 to 256 minutes per week.

Qualitative feedback from participants in the lifestyle coaching programme

Twelve months after the completion of the intervention, evaluation questionnaires were mailed to the 33 participants who completed at

least two coaching sessions, as they had sufficient experience with the coaching to provide useful comments. The response rate was 88 per cent ($n = 29$).

Organization of the coaching programme. The majority of respondents found the coach very flexible in arranging coaching sessions (93%) and the coach telephoned when expected (83%). The coaching contract was deemed useful by 72 per cent of participants and about two-thirds agreed that having the summary of their coaching session helped them to stick to improved dietary and physical activity habits: 'coaching sessions produced excellent info. It was my failing not fully implementing exercise sessions e.g. bike riding more often.' The majority (83%) found it easy to find time for coaching sessions. The opinion on the frequency of coaching sessions was split evenly between those who preferred it once a month or once every two months (43% each) and for a total of six months or 12 months (18% each). However, most of the comments pointed to the need to have 'more follow-ups and more frequent ones'.

Use of telephone. The majority of participants agreed that the use of the telephone for coaching sessions was appealing as a method of communication with the coach (90%) and that it was convenient for them (93%). Only three participants would have liked at least one face-to-face meeting with the coach: 'the lack of face-to-face contact reduces the impact of the coach. You are just committing to a voice not a face.'

Relationship with coach. An overwhelming majority thought that the coach was enthusiastic and positive (97%), the relationship was collaborative (90%) and that the participants were actively involved in the decision making to change their lifestyle habits (86%). The vast majority of respondents were pleased with the coaches' attributes: the coach listened to them without any judgement (93%), answered their questions (97%), helped them identify barriers to achieve weight loss (87%), enhanced their confidence to make changes (80%) and provided good advice helping them to change their lifestyle (93%). Overall, respondents felt more confident to lose weight with the assistance of the coach (83%) giving credit to their coach and the programme by saying 'thanks to my coach and the opportunity to participate'.

Impact of coaching programme. Overall, the coaching programme was valued by participants with 83 per cent agreeing that it was helpful and that they would recommend it to other club members (with 30 per cent strongly agreeing). A considerable proportion of participants reported that they were able to achieve a weight loss (61%), to acquire a healthier diet (73%), to increase their physical activity (73%) and to increase their confidence to maintain a healthier lifestyle (79%).

Discussion and conclusions

This pilot programme achieved positive outcomes, not only on physiological endpoints (BMI reduction) but also on behavioural outcomes in terms of improved dietary intake and

physical activity, improved quality of life, self-reported well-being as well as satisfaction outcomes. The risk profile of participants confirms that this intervention has reached those who need it the most, as 88 per cent of club members were overweight or obese (Aoun et al., 2009). Participants increased their consumption of high-fibre and low-fat food and improved their levels of physical activity, supporting other similar findings (Castro and King, 2002; Eakin et al., 2009; Kolt et al., 2007). Participants in this study were more active compared to Western Australian men (45–64 years) (Wood and Daly, 2007) and their average time of exercise per week was far more than the recommended minimum 150 minutes of exercise per week. It may well be that taking part in the BMI competition for about six months prior to the coaching had already positively influenced their physical activity habits, so they started from a higher baseline. Also there could be an element of self-selection and those who participated were more motivated and had already started making changes to their lifestyle. BMI proved to be a sufficiently reliable measurement, undertaken by lay people in such community settings (Dhaliwal et al., 2010).

For those 19 who completed the four sessions, there was a general trend of improvement until the third session and then a slight regression by the fourth session. Champions revealed that this trend was due to seasonal travel for most of the 19 participants who were mainly retirees and migrated up north to warmer weather in the cold winter months, hence losing focus and momentum to keep up with the programme. Significant improvements in SF36 scores were experienced in mental health and vitality but no previous studies reported on this aspect of quality of life. Also very few studies reported on the feasibility of implementation (Eakin et al., 2007) as we did in this study.

Participants provided feedback that it was a worthwhile programme to be involved in and they would definitely recommend it to other clubs. Considering that this evaluation was

undertaken 12 months after the conclusion of the project, the response rate was high. This might be an indication that the content and delivery of the project resonated well with the participants. It is possible that this positive feedback is closely tied to the fact that the programme in its three levels was designed with the Rotarians' input and was instigated as a response to a perceived need by them.

Participants gave high ratings on how the coaching programme had positively affected a number of their lifestyle habits and they were very satisfied with the interaction they had with their coaches. Although a minority voiced their preference for a face-to-face encounter, most participants rated the telephone as a medium for coaching highly. This is encouraging considering that participants with a mean age over 60 years, it might be assumed that this age group would not find it comfortable connecting around a health issue using technology-based strategies.

Limitations

While it seemed that the coaching was effective, it was not possible to determine from this pilot study the overall strength and depth of the effectiveness as there was no control group and the sample size was relatively small, hence it is not possible to generalize the findings. Future expansion of the project is needed to address these limitations. Participants indicated that the duration between the coaching sessions could have been shorter and more sessions were needed to keep motivation and interest, hence future expansion of the project will need to consider monthly and more follow-ups to measure longer-term effects. We need to add a further follow-up at 12 months after the intervention to measure maintenance effects and sustainability, which is a key area for future research (Eakin et al., 2007; Orleans, 2000). The lifestyle questionnaire needed to be shorter and administered less frequently.

Conclusions

The programme catered for a hard-to-reach population group, men, living in rural areas. The relatively simple set of strategies and straightforward health messages facilitated the intervention's implementation and enhanced its feasibility for this population group in a 'real-world' setting. The strategies seemed to suit the health psychology of this age group of men and health services are encouraged to consider re-orienting their community lifestyle programmes to encompass such strategies to encourage self-management and less reliance on health professionals. Future initiatives in this field need to consider training peer support leaders (called Champions in this study and referred to as lay health advisers in the literature) to provide the support for their peers leading to maintenance of healthy lifestyle habits and sustainability of such community-based programmes, capitalizing on the existing natural social networks existing in service clubs. All over the world, organizations are at a loss how to reach men with health interventions and service clubs are emerging as an important setting that make interventions more acceptable for men when they are in groups. Rotary is an international organization with a wide reach into communities of all types, a total of 1.2 million Rotarians who can spread such community-based interventions effectively.

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Competing Interests

None declared.

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