

Six-month outcome data for the Good Life Club project: An outcomes study of diabetes self-management

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This paper reports the six-month outcomes data for the Good Life Club, a demonstration project funded under the Commonwealth of Australia Sharing Health Care Initiative. The Good Life Club is a chronic disease self-management intervention for people with diabetes aged over 50 years. The Transtheoretical Model of Behaviour Change and motivational telephone interviewing provided the conceptual framework for the project.

To date n= 85 participants have supplied six-month outcome data. Data collected at baseline and six-month follow-up included demographic information, type of chronic illness, health behaviours, health perceptions, activity levels, activities of daily living, self-efficacy, mood, service utilisation, and stage of change for nine target behaviours.

The participants demonstrated statistically significant positive changes in four of eight self-rated symptom measures, reductions in the reported use of GPs, improvements in social functioning, and large increases in all six confidence in self-management items.

The paper concludes with a discussion of the need for caution in interpretation of the six months outcome data and future research directions in modelling predictors of outcome.

Key words:

Governments in developed countries have now recognised the imperative of developing health systems and services that respond to the shift in the burden of disease from communicable acute conditions to non-communicable chronic conditions (World Health Organization, 2001, 2002). The ageing of populations in developed countries highlights the need to develop interventions and health service systems that will address the prevention and management of chronic conditions as people age (Andrews, 2002; Browning, 2003). In Australia, the necessity of finding innovative solutions for managing and funding health services for an ageing population has led to a range of large-scale trial programs, including the Australian Coordinated Care Trials and the Sharing Health Care Initiative. These trial programs have been devised to investigate how health services may be delivered and the health of the target populations enhanced in the most effective and efficient manner.

The Australian Coordinated Care Trials involved pooling of funds that would normally be separately allocated to health service providers with the view of enhancing care coordination for target populations within nine specified geographical areas across Australia from 1996 to 1999. The trials

have been extensively evaluated (Esterman & Ben Tovim, 2002; Gardner & Sibthorpe, 2002; Perkins et al., 2001; Shannon, 2002) with varied views as to their success or failure. Subsequently, a second round of trials has commenced and is currently under way. The focus of the Coordinated Care Trials was very much at the provider end of the health services continuum.

The Sharing Health Care Initiative (SHCI), on the other hand, as is reflected in its name, was intended to promote client-provider partnerships in the management of chronic illness (Department of Health and Aged Care, 2000). The SHCI involves eight demonstration projects and four indigenous demonstration projects. The data reported in this paper have been collected at one of the demonstration sites. The SHCI program design has been squarely based upon the concepts of chronic disease self-management.

Chronic disease self-management has emerged as a way of including multiple stakeholders in the management of chronic illnesses. Under this approach those with chronic illnesses, their carers and health care professionals work together in addressing the management of their illness (Von Korff, Gruman, Schaefer, Curry, & Wagner, 1997). In addition, self-management provides an

opportunity for the person with a chronic illness to take more control of their health (Browning, Menzies & Thomas, in press; Lorig et al., 2000).

Commentators such as Jayasuryia, Roach, Bailey & Shaw, 2001 have argued that in order for chronic illness self-management interventions to be effective they should be based upon a behaviour change model. The chronic disease management projects funded by the SHCI have primarily adopted either Lorig's chronic disease self-management program (Lorig et al., 2000) or the Transtheoretical Model of Behavior Change ([TTM] Prochaska, DiClemente, & Norcross, 1992) as the models or frameworks for intervention.

"The Good Life Club", funded under the SHCI and the subject of this paper, used the TTM and motivational interviewing by trained coaches. The intervention was targeted at people with diabetes who are aged 50 years and over. The program involved general practitioners, diabetes educators and coaches who assisted participants in achieving behaviour change and improving self-management of their condition. The coach specifically assisted the person with diabetes to achieve behaviour change in the areas of blood glucose monitoring, foot care, medication management, diet and exercise by identifying the stage of change, and using motivational interviewing to encourage the person increase health actions pertinent to diabetes (Emmons & Rollnick, 2001; Lindner, 2003; Rollnick, 1996; Rollnick, Mason, & Butler, 2000). A detailed description of the intervention is provided in this special issue by Kelly and Menzies (2003) and Lindner provides a description of the coach-training program used in the project.

There is growing evidence that interventions based upon the TTM may be highly effective in changing the health status and behaviours of people with diabetes. Ruggiero and Prochaska's group in Canada have been running a linked series of large-scale studies involving people with diabetes and have found robust and sustainable changes associated with their interventions (see Jones et al., 2003; Ruggiero et al., 1997; Vallis et al., 2003).

There is also evidence that coaching as an intervention methodology leads to successful outcomes with people with diabetes. In a small RCT McMurray, Johnson, Davis and McDougall (2002) reported positive outcomes for coached patients in terms of baseline foot risk category,

amputations, hospitalisations and Hemoglobin A(1c) levels. Whittemore, Chase, Mandle and Roy (2001) used a qualitative methodology to investigate the effects of nurse coaching and reported positive outcomes. Joseph, Griffin, Hall and Sullivan (2001) reported the outcomes of a small intervention study of peer coaches for people with diabetes and found favourable outcomes in terms of healthy behaviour change and blood glucose monitoring.

The present Good Life Club intervention combines coaching and TTM concepts in its design. Evaluation data is being collected at baseline, six and 12 months from all participants. The data being collected includes demographic information, type of chronic illness, health behaviours, health perceptions, activity levels, activities of daily living, self-efficacy, mood, service utilisation and stage of change for nine target behaviours. The purpose of this paper is to describe changes in the health status and health behaviours of participants between baseline and at the six-month follow-up.

Method

Participants

The data reported in this paper are based upon the 85 participants who had enrolled in the Good Life Club project and for whom six-month outcomes/follow-up data had been collected at the time of writing. It is anticipated that the numbers of participants in the Good Life Club for whom full outcomes data will become available will grow to approximately 300 as time progresses.

Procedure and tools

All participants in the program are administered a battery of data collection tools at program entry and selected tools at six months and 18 months post-program entry. The interviews were conducted face-to-face with trained interviewers. The measures collected at program entry and six months included:

- Self-rated health (derived from the Stanford 2000 Health Assessment Scales, Lorig et al., 2001).
- Symptom Checklist (derived from the Stanford 2000 Health Assessment Scales, Lorig et al., 2001).
- Functional status measures (derived from the Stanford 2000 Health Assessment Scales, Lorig et al., 2001).

- Social functioning measure (derived from the Stanford 2000 Health Assessment Scales, Lorig et al., 2001).
- Kessler Psychological Distress measure (see Kessler et al., 2002).
- Satisfaction with Life Scale (see Diener, Emmons, Larsen & Griffin, 1985).
- Use of health services questionnaire (developed by the National Evaluators of the Sharing Health Care Program).

The data were entered into SPSS and analysed using paired Student t-tests. The critical alpha value was set at $p=.05$ because of the exploratory nature of the study. . The study received ethics approval from the La Trobe University Ethics Committee.

Results

Self-Rated Health and Symptom Measures

Table 1 shows a summary of the means of the Self-Rated Health and Symptoms by participants at program entry (baseline) and six months later with the associated paired Student t tests, degrees of freedom and p values.

All eight measures showed modest to moderate improvement at six months compared to baseline.

These data show a positive effect of the intervention upon fear of health problems and worry and frustration associated with them. Self-rated shortness of breath has significantly lessened among the study participants.

Self-Reported Health Service Use

Table 2 shows a summary of the means of the Self-Reported Health Service use for specific services by participants at program entry (baseline) and six months later. The table shows the type of health service use, the mean number of times the service was used by the participants in the previous six months at each time, descriptive statistics, and the results of paired t-tests for each variable.

The notable finding was that there was a statistically significant reduction in the numbers of times the participants had seen a general practitioner in the last six months, with a mean of 6.25 times at program entry and a mean of 5.25 times at six months. There was also a large reduction in the mean numbers of times the participants had visited a hospital in the previous six months (0.73 times to 0.19 times) but this did not achieve statistical significance at the .05 level. Although the difference is large, the variability in this variable is also large so this militates against

Table 1: Self-Report of Self-Rated Health and Symptom Measures by participants at program entry and six months later

| Item | | Mean | n | sd | t | df | p (one tail) |
|--------------------------------|-------------|------|----|------|-------|----|--------------|
| General health | (baseline) | 2.95 | 84 | 0.92 | 0.365 | 83 | ns |
| | (at 6 mths) | 2.92 | 84 | 0.89 | | | |
| Discouraged by health problems | (baseline) | 2.54 | 85 | 1.29 | 1.477 | 84 | ns |
| | (at 6 mths) | 2.29 | 85 | 1.45 | | | |
| Fearful of health | (baseline) | 2.42 | 83 | 1.46 | 3.821 | 82 | <.001 |
| | (at 6 mths) | 1.75 | 83 | 1.12 | | | |
| Health a worry in life | (baseline) | 2.48 | 83 | 1.41 | 2.522 | 82 | <0.01 |
| | (at 6 mths) | 2.06 | 83 | 1.35 | | | |
| Frustrated by health problems | (baseline) | 2.86 | 83 | 1.47 | 2.038 | 82 | <0.025 |
| | (at 6 mths) | 2.47 | 83 | 1.52 | | | |
| Fatigue | (baseline) | 4.64 | 84 | 2.47 | 0.589 | 83 | ns |
| | (at 6 mths) | 4.46 | 84 | 2.94 | | | |
| Shortness of breath | (baseline) | 3.02 | 84 | 2.97 | 2.776 | 83 | <0.01 |
| | (at 6 mths) | 2.2 | 84 | 2.96 | | | |
| Pain | (baseline) | 3.19 | 84 | 3.06 | 0.932 | 83 | ns |
| | (at 6 mths) | 2.9 | 84 | 2.84 | | | |

Four of the eight measures showed statistically significant effects. The variables were:

- Fear of health problems
- Health a worry in life
- Frustrated by health problems
- Shortness of breath.

Table 2: Self-Report of Health Services Use by Participants at program entry and six months later

| Health Service Use | | Mean | n | sd | t | df | p (one tail) |
|--|-------------|------|----|------|-------|----|-----------------|
| Number of times in the last six months have seen a general practitioner | (baseline) | 6.25 | 84 | 5.4 | 2.152 | 83 | <.02 |
| | (at 6 mths) | 5.25 | 84 | 4.92 | | | |
| Number of times in the last six months have seen a specialist | (baseline) | 2.64 | 83 | 3.65 | 0.415 | 82 | ns |
| | (at 6 mths) | 2.46 | 83 | 3.84 | | | |
| Number of times in the last six months have seen a practice nurse or community nurse | (baseline) | 0.29 | 82 | 0.82 | 0.478 | 81 | ns |
| | (at 6 mths) | 0.39 | 82 | 1.68 | | | |
| Number of times in the last six months have seen another type of health professional | (baseline) | 2.71 | 82 | 4.84 | 0.947 | 81 | ns |
| | (at 6 mths) | 2.23 | 82 | 2.34 | | | |
| Number of times in the last six months have been to the hospital for one night or more | (baseline) | 0.73 | 85 | 3.19 | 1.56 | 84 | 0.06 |
| | (at 6 mths) | 0.19 | 85 | 0.5 | | | |
| Number of times in the last six months have been to a hospital accident and emergency or casualty department | (baseline) | 0.26 | 85 | 0.66 | 0.199 | 84 | ns |
| | (at 6 mths) | 0.24 | 85 | 1.35 | | | |

achieving statistical significance in a small study sample. If a difference of this magnitude were maintained into a larger sample, this would be a

useful finding. However, we cannot infer this from the current data.

Table 3: Self-Report of Social Functioning by Participants at program entry and six months later

| Social Functioning Item | | Mean | n | sd | t | df | p (one tail) |
|--|-------------|------|----|------|-------|----|-----------------|
| Condition and/or its treatment interfere with feeling of being healthy | (baseline) | 3.21 | 72 | 2.1 | 1.298 | 71 | ns |
| | (at 6 mths) | 2.9 | | 2.16 | | | |
| Condition and/or its treatment interfere with things eaten or drunk | (baseline) | 3.85 | 80 | 2.23 | 0.878 | 79 | ns |
| | (at 6 mths) | 3.58 | | 2.27 | | | |
| Condition and/or its treatment interfere with work | (baseline) | 3.05 | 74 | 1.88 | 1.198 | 73 | ns |
| | (at 6 mths) | 2.74 | | 1.99 | | | |
| Condition and/or its treatment interfere with playing sports, gardening etc. | (baseline) | 3.33 | 66 | 1.97 | 0.162 | 65 | ns |
| | (at 6 mths) | 3.29 | | 2.37 | | | |
| Condition and/or its treatment interfere with quiet recreation or hobbies | (baseline) | 2.03 | 74 | 1.7 | 1.375 | 73 | ns |
| | (at 6 mths) | 1.72 | | 1.57 | | | |
| Condition and/or its treatment interfere with financial situation | (baseline) | 3.02 | 63 | 2.29 | 3.066 | 62 | <0.01 |
| | (at 6 mths) | 2.19 | | 1.94 | | | |
| Condition and/or its treatment interfere with relationship with spouse or domestic partner | (baseline) | 2.68 | 47 | 1.98 | 1.275 | 46 | ns |
| | (at 6 mths) | 2.3 | | 1.98 | | | |
| Condition and/or its treatment interfere with sex life | (baseline) | 3.25 | 36 | 2.3 | 1.54 | 35 | ns |
| | (at 6 mths) | 2.67 | | 2.08 | | | |
| Condition and/or its treatment interfere with relationship and social activities with family | (baseline) | 2.3 | 60 | 1.79 | 1.954 | 59 | <0.03 |
| | (at 6 mths) | 1.9 | | 1.64 | | | |
| Condition and/or its treatment interfere with social activities with friends, neighbours or groups | (baseline) | 2.56 | 63 | 2.09 | 1.787 | 62 | <0.04 |
| | (at 6 mths) | 2.11 | | 1.74 | | | |
| Condition and/or its treatment interfere with religious or spiritual activities | (baseline) | 1.72 | 39 | 1.45 | 0.65 | 38 | ns |
| | (at 6 mths) | 1.56 | | 1.55 | | | |
| Condition and/or its treatment interfere with involvement in community or civic activities | (baseline) | 2.11 | 47 | 1.87 | 2.082 | 46 | <0.02 |
| | (at 6 mths) | 1.66 | | 1.52 | | | |
| Condition and/or its treatment interfere with self-improvement or self-expression activities | (baseline) | 2.09 | 55 | 1.75 | 1.023 | 54 | ns |
| | (at 6 mths) | 1.82 | | 1.67 | | | |

Social functioning

Thirteen items from the Stanford 2000 concerning social functioning were administered to all participants at baseline and six months. Table 3 shows a summary of the means of the Self-Reported Social Functioning items by participants at program entry and six months later.

All items showed movement from the baseline to the six months' measurement in the desired direction. The items that achieved statistically significant favourable changes were:

- Condition and/or its treatment interfere with financial situation.
- Condition and/or its treatment interfere with relationship and social activities with family.
- Condition and/or its treatment interfere with social activities with friends, neighbours or groups.
- Condition and/or its treatment interfere with involvement in community or civic activities.

These results are indicative of useful gains of the six months study period to date.

Confidence in self-managing condition

Six items from the Stanford 2000 concerning confidence in the self-management of the condition were administered to all participants at baseline and six months. Table 4 shows a summary of the means of the Self-Reported Social Functioning items by participants at program entry and six months later.

All items showed very strong movement from the baseline to the six months' measurement in

the desired direction, achieving statistical significance at the .001 level for all items.

Discussion

This is an interim report of the Good Life Club study outcomes, and, as the study numbers grow, the pattern of results may well change somewhat from the currently reported patterns. The research design employed in this study is a single group pre-test post-test design with the participants acting as their own controls. A randomised control trial would have been a superior design but there were serious ethical issues associated with the implementation of such a design. The research participants were people with a serious and mostly not well-controlled chronic illness. In the absence of an RCT methodology, a waiting list control may well be considered to be acceptable. However, within the parameters of the present study, this would involve a long period of treatment delay. Thus, a waiting group control or standard RCT approach was considered not to be acceptable in the present context. In this study the effects that are not controlled for by this type of design, to use Campbell and Stanley's terminology, include history, maturation and regression to the mean effects. However, these possible problems are common to all studies that use this type of design. A further methodological consideration is the fact that most of the data reported in this study are self-report data. There could be an expectancy or suggestibility effect operating in the data masking real effects and/or promoting artefactual ones. Nevertheless, this study is in good company with most others in this area that also rely upon self-report measures.

Table 4: Self-Report of Confidence in Managing Condition at program entry and six months later

| Health Service Use | Mean | n | sd | t | df (one tail) | p |
|---|---|----------|----------|--------------|------------------|----------|
| Confidence in keeping fatigue from interfering with things wanting to be done | (baseline) 6.36 (at 6 mths) 7.42 | 85 | 85 | 2.89 2.74 | 3.223 | 84 <.001 |
| Confidence in keeping physical discomfort from interfering with things wanting to be done | (baseline) 6.46 (at 6 mths) 7.68 | 85 | 85 | 3.03 2.58 | 3.364 | 84 <.001 |
| Confidence in keeping emotional distress from interfering with things wanting to be done | (baseline) 6.89 (at 6 mths) 7.92 | 85 | 85 | 2.88 2.53 | 3.113 | 84 <.001 |
| Confidence in keeping other symptoms from interfering with things wanting to be done | (baseline) 6.44 (at 6 mths) 7.57 | 84 84 | 84 84 | 3 2.61 | 3.395 | 83 <.001 |
| Confidence in different tasks/activities needed to manage health condition to reduce the need to see doctor | (baseline) 6.45 (at 6 mths) 7.96 | | | 2.59 2.29 | 4.913 | 84 <.001 |
| Confidence in doing things other than just taking medication to reduce how much their condition affects everyday life | (baseline) 6.62 (at 6 mths) 8.1 | 84 | 84 | 2.65 2.32 | 4.61 | 83 <.001 |

The results found to date in the Good Life Club project are promising and indicative of an effective set of interventions. The measures reported show that important health behaviours, use of health services, fear of health problems and confidence in dealing with health problems have all been improved within the program participants. These positive changes provide evidence of program efficacy to six months.

The results of the six months' outcome study for the Good Life Club support the earlier work by researchers such as McMurray et al. (2002) who found that coaching was effective in the

management of diabetes, the work of Emmons and Rollnick (2001) who found similar effectiveness in their studies of motivational interviewing and Ruggiero and Prochaska's group in Canada with their studies of TTM (Jones et al., 2003). Of course, with an omnibus intervention, there is strong interest in attempting to disentangle the relevant elements that are causative or facilitating of program success. Later work in this program will focus on the sustainability of the changes reported to date and modelling of the characteristics of the program and program participants that predict sustained program success.

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