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**Evaluation of the Shepparton Health Heart Project:
project description, evaluation design and
methodology**

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ABSTRACT

This paper describes the conduct of the Shepparton Healthy Heart Project (SHHP) and the design and methodology of its evaluation. The SHHP was a community-based, coronary heart disease primary prevention project, auspiced by the Victorian Division of the National Heart Foundation, in association with the residents of Shepparton, a medium-sized rural community in Central Victoria. It sought, through community participation, to modify its 'culture' and structures relevant to heart disease prevention (rather than focus exclusively on individual risk factor change).

The SHHP had an overall Healthy Heart theme with three sequential phases relating to nutrition, physical exercise and smoking. There were additional subprograms directed at particular subpopulations (Koori and NESB) and community organisations (general medical practitioners, eating places, schools and pharmacies). The evaluation's overall design was quasi-experimental, based on a comparison of relevant changes in Shepparton and a comparable community, Mildura in North-Western Victoria across the project period, particularly through the use of baseline and follow-up instruments. Cognitive and behavioural changes in individuals as well as perceptions about change in local groups and the community was assessed using a self-administered mail questionnaire (to 1712 subjects aged 18-74 years at baseline). This was also studied using multiple focus groups. The level and nature of community participation in the SHHP was assessed based on interviews of key informants, document analysis and observations of the evaluation group. The response of the local media was assessed using a log of health-related items in the local newspapers across the project period.

Evaluation of the SHHP's phases included self-administered questionnaires and a log of food purchasing behaviour at local supermarkets across the project period. Evaluation of subprograms aimed at schools, eating places and general practitioners involved onsite assessments, interviews or mail questionnaires. The two communities had very similar socio-demographic profiles and only minor differences in baseline levels of Heart Health parameters at baseline.

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Project Description, Evaluation Design and Methodology

Introduction

A recent review of clinical and epidemiological data relating to the prevention of myocardial infarction concluded 'although available data suggests that major benefits in public health can be achieved by adopting the modifications of behaviour and lifestyle reviewed in this article, the efficacy of current strategies to modify risk-factors status has been less encouraging'.¹ It noted that, while some risk factor reduction had occurred (smoking and in some studies, serum cholesterol) the reduction had not otherwise been very large. Reduction in coronary heart disease (CHD) morbidity too had also not been large. In addition, reduction in CHD mortality had been quite small and might have been offset by a corresponding rise in non-CHD mortality producing a zero net change in total mortality.¹

These strategies include both primary prevention programs based on population-wide health education² and secondary prevention programs based on the screening, detection and subsequent treatment of 'at risk' individuals in the population.^{3,4} The value of both types of programs vis a vis other treatment and prevention programs must be questioned given their not inconsiderable costs and delayed effects.⁵ While additional basic research is necessary to define causal pathways more definitively, applied research is also needed. It has been argued that this should include evaluations of programs of a different type than has been conducted previously^{6,7}. Altman argues that it is more useful to divide the question 'do community-based health programs work' into several more easily answered research questions. These, he argues are best addressed through a study of the program's processes (that is the nature and success of its operations to realise the project's aims); its physiological, psychological and social effects and an evaluation of its social relevance.⁵

This form of enquiry has not formed the main basis of the evaluations of the principal primary prevention programs for CHD (The Stanford Five-City Project, the North Karelia Project, the Minnesota Heart Health Program, the Pawtucket Heart Health Program, or the WHO European Collaborative 'Paired Factories' Project).^{2,8,9,10,11} Rather they have focussed on program outcomes - risk factors and coronary events.) Thus, while their

community education activities have now been well documented,¹² this has occurred only to a lesser extent regarding the level of interaction between the program and the community¹⁰ (ie the program's processes) and the nature and extent of structural changes resulting from new policies and practices of relevant community organisations - businesses, local government and voluntary organisations (ie the program's social effects).⁷ There has also been little consideration of costs (ie the program's social relevance)¹³ and program equity, as assessed by impact (ie the short-term outcome) on disadvantaged groups compared with the mainstream population. With these information gaps, it is difficult to decide which components of these programs had a successful impact - and to decide which components could be improved, and in what ways.

This paper seeks to address these issues. It reports on the evaluation of the Shepparton Healthy Heart of Victoria Project (SHHP). The SHHP stands broadly in the tradition of the primary prevention programs, listed above, albeit on a smaller scale. It aims however primarily to have an impact on individuals through an impact on the town's local 'culture', its community organisations as well as on particular local groups. The paper describes the SHHP as well as the design and methodology of the evaluation in detail. Relevant characteristics at baseline in the project and comparison communities are also described.

Materials and Methods

Broad Project Outline

The SHHP was principally funded and auspiced by the Victorian Division of the National Heart Foundation of Australia (HF). It was located in Greater Shepparton GS (1986 population - 47,359) a closely settled irrigation area based on fruit growing and dairy industries in Central Victoria. GS consists of the City of Shepparton and its neighbouring shires. It was launched on October 1991 and operated till July 1993. The SHHP had six staff and operated under the direction of an expert steering committee with local representation. Seven locally-based working parties oversaw particular parts of the SHHP.

The SHHP arose out of the decision of the Victorian Division of the HF to establish a rurally-based primary prevention heart program. It was anticipated that the program would be well received on the basis that CHD is widely regarded as a major cause of death and disability, amenable to prevention. Its location was not decided on the basis of local demand or objective evidence that disease rates in GS were higher than the rest of Australia. Thus there was no formal needs assessment - as occurred in the PRECEDE model^{14,15}; or formal community consultation - as occurred in the PATCH model; or sociological analysis of community structures and culture.¹⁶ GS was, however, an appropriate size and preliminary work suggested that it possessed the three major characteristics of a community: solidarity, integration and political autonomy.^{17,18} It was a manageable distance (180 kms) from Melbourne, where both the HF and the evaluation group were based. Appropriate media organisations for the television, radio and newspaper components of campaigns existed in the region.

The SHHP was conducted in three sequential phases - 'Towards eating a healthy diet', 'Towards taking regular physical exercise, and 'Towards being smoke-free'. Each phase of the SHHP incorporated core activities - health promotion activities coordinated by the HF based on the local mass media and a variety of environmental programs. Each phase also incorporated 'community action initiatives' - health promotion activities generated by

local community groups in association with the HF. These increased in number in the later phases of the SHHP.

The SHHP also had a number of subprograms. These were oriented to both particular community organisations/agencies/settings and particular subpopulations, as set out later in this paper.

Planning took place in the 12-18 month period before the SHHP. Successful health promotion materials were adapted for local use, as core activities. Planning was simplified because, excepting a small project staff and working parties, a large HF-based health promotional superstructure was not proposed. Rather it was intended that the SHHP would work through existing agencies. SHHP workers would reside locally. The SHHP office would be located to be easily accessible and working parties drawn from the community, would be established. In addition, SHHP workers would 'network' with relevant community organisations such as hospitals, schools, service clubs, ethnic groups, sporting organisations and local media. Key individuals such as GPs would be approached seeking their support and active participation in community initiatives.

The SHHP established a public profile in two ways: first, through a project launch attended by key individuals and representatives of key community organisations; and through the distribution of a letter of introduction, a brochure and a Food Pyramid 'refrigerator magnet' to the 17,000 households in the area.

This public profile was sustained during the project by regular newsletters as well as ongoing SHHP activities. This profile, once established, led to many opportunities for valuable but unplanned health promotional activities, which proved as valuable as planned ones. Some were initiated by the HF, others by the community. These included a newspaper for school canteen managers and community events organised by health and fitness centres, eg outdoor exercise classes and smoke-free dining at Expos and Agricultural shows.

The Three Phases of the Main Program

The first phase 'Towards a healthy diet' had two campaign themes "Fruit 'N' Veg with Every Meal" and "Flavour without Fat". These were adopted from the successful media-based programs of the Health Department of Western Australia.²⁰ These media included television, radio, brochures, pamphlets, tee-shirts and a variety of 'media events'. Community events included the following:- linking the campaign launch to an annual 'Fruit Salad Day'; distributing 'what you can do' resource packages to all school teachers; and poster displays by fruit and vegetable retailers and sales of cookbooks in their stores.

The second phase 'Towards taking regular physical exercise' was developed by a SHHP working party, which produced a series of 'community service announcements' on radio and television. These involved local sporting people advocating the advantages of their particular sport or form of exercise. Other activities included 'Come and try' community sports days in association with eleven local sporting clubs.

The third phase 'Towards being smoke-free' was organised to coincide with the Statewide 'Quit' program of the Anti Cancer Council of Victoria. Activities were based on 'Quit' and Health Department of Western Australia health promotion material. A SHHP working

party was actively involved in modifying previously used television, radio and newspaper advertising for local use. It also assisted in the distribution of material to schools.

Sub-programs

The schools subprogram aimed at revising and expanding food and nutrition curricula, providing educational kits for classroom and school use and changing food offerings in school canteens. A SHHP working party and network of canteen managers were involved in the development of these activities. The worksite subprogram included Heart Health training workshops for representatives of local worksites. It also included the distribution of newsletters and displays of posters and brochures in staff cafeteria.

The community subprogram had two parts. The first aimed at encouraging eating establishments to adopt 'healthy' practices concerning food preparation/ presentation and smoking. Those that satisfied the prerequisite criteria were provided with Heart Health Hospitality Awards for on-site display. The *second* aimed at encouraging pharmacists to discuss Heart Health matters with their customers and to prominently display brochures and pamphlets in their shops. These were two initiatives of a SHHP working party consisting of representatives from local shires, sporting clubs, service clubs and the local hospital dietetic and nursing departments.

The general practitioner subprogram made available Heart Health videotapes and brochures to local GPs for use by their patients. It also provided information kits to assist GP activity in CHD prevention during patient consultations.

The Koori subprogram was auspiced by the Koori community through the local Koori-directed health centre in GS, following extensive consultation with the local Koori community. The Koori project worker promoted Heart Health issues (such as cooking and exercise) in health and other programs offered by the centre.

The NESB subprogram grew out of consultation with local ethnic communities. This continued throughout the project and involved the establishment of a SHHP working party. The subprogram aimed to make Heart Health issues more salient in these communities through both discussion and the provision of information. These included a speaker's resource, community newsletters and resource materials for student projects.

The Evaluation Design and Its Execution

The evaluation employs a quasi-experimental design. This involves the assessment of relevant parameters at project start and end in the project community and a comparison community. These parameters relate to the project goals which, as set out above, are oriented both to the individual and the community. Parameters relating to the individual are limited to behaviour and cognition and exclude clinical, biochemical or coronary events. Selected socio-demographic and Heart Health characteristics of the two communities are set out in Table 2 so as to demonstrate that the two communities are comparable (with only small exceptions) and thus form a suitable basis for such a quasi-experimental design. The evaluation also has some naturalistic features, particularly with regard to community participation in the SHHP and the reasons why and how this did or did not occur.

Data collection methods included mail questionnaire, personal interview, focus groups, on-site inspections, document analysis, logs of mass media and supermarket purchase items as well as direct observations of the evaluation group. The different parts of the evaluation and their relevant data collection methods are set out in Table 1.

A suitable area for comparison purposes existed. This was Sunraysia (SUN) (1986 population - 45,135) based on the City of Mildura, a municipality in north-western Victoria and its surrounding shires. This area shared with GS a large fruit growing industry, similar population size, age profile, sense of community and large resident Koori population.

GS (the project community) was exposed to the SHHP, SUN (the comparison community) was not. This did not uniquely determine the exposure of these communities to Heart Health information. Both communities also received Heart Health information from local medical practitioners, other health care professionals as well as services operating Statewide, eg. the QUIT Stop Smoking Program and the Food and Nutrition Program.

Impact of Main Program of SHHP on Individuals

Mail Questionnaire

Data were collected principally by mail questionnaire that related to the impact of the SHHP's three phases of nutrition, physical exercise and smoking on individuals. Several behavioural questions were drawn from questions in the NHF Risk Factor Prevalence Survey.^{19,20} New data collection measures for particular food consumption behaviours relevant to the project's objectives were designed and piloted. (The use of such simple checklist methods has been shown previously to be an efficient, rapid and valid way to inform public health nutrition programs.²¹) Data were also collected on relevant behavioural intentions using Prochaska's five stage self-change model and Bandura's concept of self-efficacy.^{22,23} They also included the measures set out in Table 2 and in the later section describing baseline characteristics of GS and SUN. The questionnaire was extensively piloted, particularly to test if it was readily comprehended.

TABLE 1

Evaluation of Project Parts and Relevant Data Collection Instruments

Project Parts	Data Collection
<ul style="list-style-type: none"> • Main Program <ul style="list-style-type: none"> ◊ Impact on individuals ◊ Awareness of SHHP ◊ Perceptions of community & local group response to SHHP ◊ Impact on mass media ◊ Response of community to SHHP • Phases Of Project <ul style="list-style-type: none"> ◊ Nutrition phase 	<ul style="list-style-type: none"> Mail questionnaire (B,F) Focus groups (B,F) Log of items in local newspaper Interviews key individuals Project documents Observations by evaluation group Mail questionnaire at end of phase

	Log of supermarket food purchases
◇ Smoking phase	Self administered school questionnaire at beginning and end of phase
• Sub-Programs Of Project	
◇ Schools	Document analysis On-site interviews (B,F)
◇ Community	
◆ restaurants	Document analysis On-site interviews (B,F)
◆ pharmacies	On-site interviews (B,F)
◇ General Practitioner	Mail questionnaire (B,F)
◇ Koori	Separately evaluated
◇ Non-English speaking background	Separately evaluated
Notes:	B = Baseline F = Follow up

An initial sample of approximately 1100 was drawn in each community in order to define a cohort of approximately 600-700 taking into account:- the exclusion of residents, 75 years and over; allowance for errors in the register (eg electors who had moved away from their listed address); and non-response and attrition across the project period.

TABLE 2

Selected Baseline Characteristics of GS and SUN Projects* (Parameter Differences and 95% CI)

Parameter	GS	SUN	Difference (95% CI)
• Socio-demographic			
◊ Mean age			
◆ Male (n = 734)	43.4	43.9	-0.6 (-2.8, 1.6)
◆ Female (n = 822)	42.6	44.0	-1.4 (-3.5, 0.7)
◊ Gender (% male)	46.5	48.0	-1.5 (-6.5, 3.5)
◊ Country of Birth (% NESB)	6.3	7.7	-1.4 (-3.9, 1.1)
◊ Marital status (% currently married/defacto)	74.6	78.2	-3.6 (-7.8, 0.6)
◊ Educational status (% ≤ 10 school years)	51.7	55.1	-3.4 (-8.4, 1.6)
◊ Nominated occupation (% Manager/prof/ paraprof in work force n = 947)	36.1	39.9	-3.8 (-9.1, 1.5)
◊ Mean number of children	2.1	2.0	0.1 (-0.04, 0.26)
◊ Currently in work force (%)	60.3	58.9	1.4 (-3.2, 6.0)
• Biological and Health Characteristics			
◊ Height (cm)			
◆ Male	176.6	176.0	0.6 (-0.5, 1.7)
◆ Female	162.8	162.5	0.3 (-0.8, 1.4)
◊ Weight (kg)			
◆ Male	79.8	79.9	-0.1 (-2.2, 2.0)
◆ Female	64.3	66.2	-1.9 (-3.8, 0.0)
◊ 'High blood pressure' (%)	18.9	18.4	0.5 (-3.4, 4.4)
◊ 'Angina' (%)	3.1	4.2	-1.1 (-3.0, 0.8)
◊ 'Heart attack' (%)	2.7	3.4	-0.7 (-2.4, 1.0)
◊ 'Stroke' (%)	1.4	1.6	-0.2 (-1.4, 1.0)
◊ 'High cholesterol' (%)	10.4	13.5	-3.1 (-6.3, 0.1)
Notes:	* n = 816 (GS) + 740 (SUN) - small number of missing values, except where stated.		

The Pre-intervention questionnaire was mailed to 1,115 and 1,090 subjects of GS and SUN respectively, (Oct-Dec 1991). These subjects, 18 years and over, were randomly selected, using the uniform function of the SPSS program, from the Electoral Registers maintained by the Australian Electoral Commission. The roll, updated to June 1992, was stratified by local authority area. Subjects consequently included only those who were registered to vote (which in Australia is compulsory for all citizens and some non-citizens, 18 years and over). Three mail-outs with telephone or home visit follow-up, where necessary, and incentives, namely cinema tickets or gymnasium passes, were used. Respondents over 75 years, or not resident at their listed address at the beginning of the project period, were subsequently excluded.

Change in relevant parameters across the project period for individuals in the panels drawn from each community will be compared after adjusting for known confounders. Initial data analysis for the large number of variables consisting of changes in ordinal ranking across the project period, will be principally based on the Mann-Whitney U test (also known as the Wilcoxon rank sum test). (Mann-Whitney is robust to departures from normality and equality in variances and is almost as powerful as the paired t test). Appropriate nonparametric tests, logistic regression and structural analysis will be used if multivariate analysis is necessary.

Power calculations for sample size estimation were problematic as the study involved multiple dependent variables with baseline values that were unknown at the study design stage. Sample sizes were comparable to those employed in the cohort samples in the Stanford Five-City Study.²⁴ The power of the study to detect observed differences in parameters that are statistically significant will be calculated post-hoc.

Focus Groups

Perceptions concerning the provision of Heart Health promotion and the community's response were studied using focus groups. The eight groups (per community) were based variously on residents in rural areas, mothers, professionals, gymnasium members, hospital workers, Italians, and lower socio-economic status workers. Each group consisted of 6-8 individuals. Discussions related to subjects' initial reactions to the prompt of 'Heart Health'; their awareness of heart disease; their perceptions regarding diet, exercise and smoking; any recent relevant behaviour change and any barriers to change; their food purchasing behaviour at supermarkets; and finally their insights regarding the provision of Heart Health programs currently.

Groups with a designated social characteristic were assembled (nonrandomly) by a long-term resident member of the evaluation group who had wide acquaintance of that community. Interviews took place at project outset and end. Appropriate qualitative data collection techniques including the data analysis methods of Miles and Huberman were used.²⁵ Perceptions of relevant issues within the groups were examined in depth. Complexities in the relationship between health promotion campaigns, health attitudes and relevant behaviours were explored in group discussions.

Local Media Response to the SHHP

This was based upon a log of all health items and specifically Heart Health items including SHHP activities in GS and SUN newspapers across the study period (as well as for a limited prior period of time in order to establish a baseline). This included a count and 'column inches of relevant articles.

Response of the Community to the SHHP

The evaluation of the 'community action initiatives' required the development of new methods. This was because guidance from published works, with the exception of the Minnesota Heart Health Program was limited.²⁶ These initiatives were assessed using the following measures:-

- Penetration - the number of community groups in contact with the SHHP;
- Initiatives - the number of new activities generated by local groups associated with the SHHP;
- Ownership - the extent to which the local community identified with the SHHP;
- Networking - the degree of 'connectedness' or avenues for communication between the SHHP and community groups;
- Institutionalisation - the continuing existence of the program beyond the SHHP period;
- Community competence - the development of organisational skills in local groups, necessary to develop local health promotion programs (other than Heart Health).

The possibility of the suppression of other community health activities (namely alcohol abuse and home/driver safety) resulting from the SHHP was also investigated.

These were assessed using interviews with HF staff and key individuals who either had contact with the SHHP or had standing in, or substantial knowledge of the GS or SUN community. These were conducted particularly towards the end of the SHHP period. Minutes of working party meetings were reviewed. The evaluation group also maintained an ongoing observation of the SHHP across the project period. The SHHP will be followed-up at the end of the project period to seek evidence of its institutionalisation.

Impact of the Main Phases of the SHHP

This was restricted to two of the three phases. A mail questionnaire (with limited follow-up) was sent to a cross-sectional sample population of 1105 subjects, unrelated to the main study cohort. This occurred at the end of 'Towards eating a healthy diet' phase' in GS alone (Aug - Nov 1992). Questions related to subjects' awareness, involvement and cognitive and behavioural responses relating to the Phase. Selected questions from the Pre-intervention questionnaire were included to monitor levels of relevant behaviours during this part of the SHHP period.

Individual behaviour change was also tracked in the two communities based on change in food purchasing behaviour. Inventories of table spreads and milk products (classified by fat content) were maintained across the SHHP period. This was done using barcode scanning in all supermarkets with this equipment (five in GS and three in SUN). Wholesale milk sales (from local dairy producers) during the SHHP period were also tracked. As part of the 'Towards being smoke-free' phase, self-administered questionnaires were completed by all students in selected schools before and after its conduct.

Impact of Subprograms of SHHP

Schools Subprogram

This included an analysis of both sales inventories, menus and policy documents for school canteens across the SHHP period. It also included semi-structured interviews with canteen managers, volunteer helpers and teaching staff. (15 of 16 schools in GS and all 14 in SUN had canteens). Teaching staffs in these schools were also interviewed regarding food and nutrition curricula.

Community Subprogram

A large proportion of all sit-down eating establishments (49 of 56 in GS and 39 of 70 in SUN) was contacted at project beginning and end. The proprietor/manager was interviewed and the menu analysed to discover the presentation and availability of low fat and 'healthy' food options as well as 'house rules' concerning smoking.

Pharmacy Subprogram

This was assessed using interviews and observations made by the SHHP team - and validated by the evaluation group - particularly regarding the display of brochures, pamphlets and booklets in pharmacies.

General Practitioner Subprogram

This was evaluated using a mail questionnaire (with mail and telephone follow-up) sent at the beginning and end of the SHHP period, to all GPs in the two communities. Forty seven of the 57 listed GPs responded to the first of these questionnaires in August 1991. (A good response rate was also achieved in the follow-up of these GPs at project end.) Questions concerned:- the extent to which GPs initiated enquiries concerning patients' smoking, diet and exercise behaviours; strategies adopted to modify them; identification of high risk patients; cholesterol testing; GP involvement in Heart Health community activities; and GP socio-demographic and workplace characteristics.

Koori Subprogram

This was evaluated based on the diary of SHHP workers' activities.

NESB Subprogram

This was evaluated using focus group interviews conducted before and during the SHHP period. (The evaluation of both subprograms that were separately funded from the main project was separately conducted and did not involve the evaluation group.)

Comparison of Population Characteristics at Baseline

This comparison was based on data collected in the Pre-intervention mail questionnaire - Of the 2,205 subjects in the two populations 1712 responded; 274, for a variety of reasons, no longer resided at the listed address; and 219 did not respond. The response rate accordingly was 87.5% for current residents. Response rates in GS and SUN separately, were similar (87.1% and 88.1% respectively for current residents). After excluding 156 further subjects, 75 or more years who responded, 1556 subjects (816 in GS and 740 in SUN) remained and formed the initial cohort.

Selected variables that could potentially confound relationships investigating SHHP effects are set out in Table 2. These show that the characteristics of the two communities were very similar. (No variable had a 95% confidence interval that excludes zero.) A comparison of other Heart Health variables also made clear that, with few exceptions, their baseline values were similar, as set out below. (It should be noted that a comparison of changes in parameter levels in GS and SUN did not require parameters to be the same in the two sites.)

Diet

The adoption of special diets, consumption of fruit, vegetables, fried food, takeaway food, milk products, intentions regarding dietary behaviour and perceptions regarding their effects on CHD were similar in the two communities. However 9.0 per cent fewer GS subjects removed fat from their meat (95% CI, 4.0 - 14.0%) and 12.6 per cent fewer used margarine as a table spread (95% CI, 7.8 - 17.4%).

Exercise

The performance of less vigorous exercise and vigorous tasks, intentions regarding exercise behaviour & perceptions about effects on CHD were similar. However, 5.5 per cent more GS subjects engaged in vigorous exercise (95% CI, 1.3 - 9.7) and did so on a mean of 0.2 extra occasions in the last week (95% CI, 0.1 - 0.3). Seven percent more GS subjects also walked for exercise/recreation (95% CI, 2.1 - 11.9).

Smoking

The proportion smoking, the mean number of cigarettes smoked by smokers, the proportion of ex-smokers, the mean duration of time since cessation and intentions regarding smoking behaviour were similar in GS and SUN. However, 6.7 per cent more GS subjects perceived smoking as leading to CHD (95% CI, 1.5 - 11.9).

Individual Health Care Seeking Behaviour

Behaviour was similar for blood pressure and cholesterol check ups, weight measurement and provision of Heart Health Advice.

Health-related Group Participation

Attendances of sporting clubs, stop smoking, dietary and other groups were similar. However 3.3 per cent more GS subjects attended fitness/health groups (95% CI, 0.5-6.1).

Heart Health Mass Media Exposure

Exposure to television, radio, newspapers, magazines, pamphlets, posters and the HF food labelling logo was similar.

Perceived Level of Activity of Local Groups in Heart Health Matters

Perceived activities concerning diet, exercise, smoking and weight reduction were similar.

Concluding Remarks

The conduct of such an intensive evaluation is particularly suitable for such a broad-based project as the SHHP. The intensity of the evaluation makes possible insights into the inter-relationship between events that help in distinguishing project and non-project effects. It also makes possible to distinguish which components of the SHHP did and did not work and what were the problems and barriers affecting those components that were least successful. (This is bearing in mind some unavoidable limitations in the generalisability and validity of the results that are based on one project and one comparison community.) On the basis of these insights, it should be possible in the future to design better, more cost-effective community-based primary prevention programs of this type.

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