

Assessing quality of a worksite health promotion programme from participants' views: findings from a qualitative study in Malaysia

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Abstract

Background An assessment of the process and outcomes of a health promotion programme is necessary for the continuous improvement of a programme.

Objective To explore the participants' perceptions of the quality and effectiveness of the 'Love Your Heart Programme'.

Design A qualitative study using semi-structured interviews with a purposive sample of participants of the 'Love Your Heart' programme. Interviews were based on an interview guide that grouped questions into four main subgroups: structure, process, immediate outcomes and impact. The interviews were audio-recorded, transcribed verbatim and analysed using the principles of grounded theory.

Results A total of 17 interviews were conducted. The participants were satisfied with the structural aspects of the programme. Different opinions arose regarding the ideal frequency and duration of the programme. The content of the seminars was thought to be too general. There was also a lack of interest in the 'Road to a Healthy Heart' booklet. All of the respondents had positive opinions about the communication skills and attitude of the health educator. The potential advantages and disadvantages of participating in the programme were discussed. Finally, the respondents expressed their satisfaction with the programme and the impact it had on them.

Discussion and conclusions In general, the participants who were interviewed held the programme, and the health educator conducted the programme in high regard. The suggestions that were received can be used to further improve the acceptability and feasibility of the programme.

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Introduction

Health promotion intervention is a process of empowering people to take more control over the determinants of health.¹ The Ottawa Charter has identified two aspects of a successful health promotion programme: process and outcomes.²

A literature search revealed several reports on quality assessments of health promotion programmes. These studies evaluate both the process and outcomes of the programme from the point of view of the health educators or participants themselves. Focus-group discussions were conducted among school children who participated in a fruit and vegetable programme. The children found the programme enjoyable and change their negative perception regarding consumption of fruit and vegetable, resulting in an increase in the consumption of fruit and vegetable. They also felt healthier and more energize.³ Similarly, several other studies reported that the health education booklet used was one of the strengths of their programmes.⁴⁻⁶ Moreover, the positive attitude and enthusiasm of the health educators motivates them to change their behaviours.⁴ Most of the studies reported an increase in awareness on health promotion activities.^{5,7} The participants were generally satisfied with the programme and would recommend it to their family and friends.⁸

Harting *et al.* published a report on the quality assessment of a health promotion programme as perceived by its participants.⁹ It was reported that the participants were satisfied with most of the aspects being studied (quality, satisfaction and normative concerns). The waiting time and the time and money invested by the participants received less positive reviews.⁹

A health promotion programme is seldom conducted as designed and planned. Process evaluation of the programme will provide a clear accountability of what actually happened.¹⁰ Studies suggested that assessment of the process and perceived quality of a health promotion programme would generate useful insights into making the programmes more relevant and

appropriate to the needs of the participants.¹¹⁻¹⁵ This also allows the providers of the health promotion programme to gather information on potential barriers to successful behaviour change.⁹ Therefore, the objective of this study was to explore participants' perceptions of the quality and effectiveness of the 'Love Your Heart' programme. The 'Love Your Heart' programme was a 6-month health promotion programme conducted with the employees of the Universiti Sains Malaysia (USM), a premier public university in Malaysia. The intervention comprised individual counselling sessions and seminars targeted at five cardiovascular risk factors (smoking, alcohol consumption, unhealthy diet, physical inactivity and being overweight/obesity).

Methods

Study design

In-depth interviews were conducted with the participants of the 'Love Your Heart' programme. All the employees of the Engineering campus were invited to participate in this programme. Purposive sampling method was employed to include participants who were compliant to the individualized counselling schedule and also those who were not compliant. Interviews were conducted with a sufficient number of participants to provide topic saturation, whereby no additional themes emerged.¹⁶ An additional four interviews were conducted to confirm apparent topic saturation.¹⁷ All of the interviews were conducted at a location suggested by the participants themselves.

Interview guide

The interviews were designed to elicit the participants' perceptions regarding the quality of various components of the programme, as well as their level of satisfaction. A semi-structured interview guide was used to establish reproducibility and to direct discussions during the interviews. The main topics of the interviews are

Table 1 Main topics for the interview

Aspects	Main topics
Structure	Location of the counselling sessions Frequency and duration of the counselling sessions Content and style of the counselling sessions Satisfaction on the 'Road to a Healthy Heart' booklet Satisfaction on the seminars held
Process	Participants–health educator communication Attitude of the health educator
Immediate outcomes	Potential advantages of the programme Potential disadvantages of the programme Effect of participating in the programme in terms of health, lifestyle and fitness
Impact	Satisfaction in terms of importance and applicability of the programme Recommendation of the programme to others Feeling responsible for one's health Experiencing more life restraints

listed in Table 1. Briefly, the questions for these interviews were categorized into four main sub-groups: structure, process, immediate outcomes and impact.⁹

The interviews were conducted by the principal investigator. The participants were encouraged to express their opinions as honestly as possible. The interviewer used neutral probing questions to deepen and clarify the participants' responses.¹⁷ All of the interviews were audio-recorded.

At the beginning of the interview, the purpose of the interview was explained to the participants. The confidentiality of the content of the interviews was ensured, and verbal informed consent was obtained for the conduct of interview and also to audio-tape the interview prior to the interview. This study was approved by the Joint Ethics committee of the School of Pharmaceutical Sciences, Universiti Sains Malaysia-Lam Wah Ee Hospital.

Data analysis

Interviews were conducted in either English or Malay language. Interviews conducted in Malay were translated into English by the principal

investigator and then transcribed verbatim. One independent researcher (Malay native speaking) reviewed the translated interviews to ensure its validity and accuracy.

Thematic content analysis was conducted using principles of grounded theory, notably constant comparative analysis, whereby regular patterns within the transcripts were identified.¹⁸ The data were coded around the main topics of the interview guide. Two researchers independently analysed portions of the interview transcripts in a line-by-line analysis. In this open coding process, relevant concepts were identified and noted in the margin of the text. Subsequently, these codes were rearranged under a newly developed thematic content to identify any links between the data. Both researchers met to discuss any discrepancies between codes and to develop a consensus on these codes. A third independent researcher who was familiar with the purposes of the study was consulted if no consensus could be reached with regard to the codes. Validity of the analysis and reporting was maintained using verbatim quotations from the participants.

Results

Socio-demographic characteristics

The socio-demographic characteristics of the participants were shown in Table 2. A total of 17 interviews were conducted. More women than men were interviewed, but this was representative of the participants from the 'Love your Heart' programme.

Themes emerged from the thematic analysis of the interview transcripts. The results are presented in accordance with the main elements of the interview guide.

Structural outcomes

The structural aspects of the programme being studied were all of the aspects of the individual counselling sessions, the seminars, the fitness tests that were conducted and finally on the 'Road to a Healthy Heart' booklet.

Table 2 Comparison between participants in the qualitative analysis of the programme and the participants in the intervention group

Socio-demographic characteristics	Participants interviewed	Participants in the intervention programme
Number of subjects	17	69
Age [mean (SD)]	38.29 (8.42)	35.97 (7.37)
Age (range)	25–51	23–51
Total year in full time study [median (IQR)]	14 (8)	13 (7)
Number of people older than 18 years including subjects themselves living in their household [mean(SD)]	2.0 (1.28)	2.16 (1.18)
Sex		
Male	5 (29.4)	19 (27.5)
Female	12 (70.6)	50 (72.5)
Ethnic group		
Malay	14 (82.4)	59 (85.5)
Chinese	2 (11.8)	5 (7.2)
Indian	1 (5.9)	4 (5.8)
Others	0	1 (1.4)
Highest level of education achieved		
Completed primary school	0	1 (1.4)
Completed secondary school	6 (35.5)	20 (29.0)
Completed high school	3 (17.6)	11 (15.9)
Completed college/university	3 (17.6)	21 (30.4)
Postgraduate degree	5 (29.4)	16 (23.2)
Estimated monthly household income		
Between MYR1501 and MYR3000	4 (23.5)	30 (43.5)
Between MYR3001 and MYR4500	6 (35.3)	10 (14.5)
Between MYR4501 and MYR6000	3 (17.6)	12 (17.4)
More than MYR6000	4 (23.5)	17 (24.6)

SD, standard deviation; IQR, inter-quartile range; MYR, Malaysian Ringgit.

Theme 1: Individual counselling sessions

The evaluation of the one-to-one counselling sessions included their timing, frequency, duration, location, content and style. These were generally regarded as satisfactory. Almost all of the respondents were satisfied with the flexibility of their appointments and the possibility of rescheduling them when necessary. The short messaging system (SMS) reminder sent in the morning of the appointment was greatly appreciated: ‘...it was flexible and the SMS reminder in the morning was timely’ (R1). Most of the respondents found that the regular meetings with the health educator were a motivating factor to continue their changed behaviour and that, at the same time, they were not a burden on their own schedule: ‘Monthly consultation creates awareness and motivation to

change our lifestyle’ (R4). One of the participants felt that the 6-month duration of the programme was insufficient to promote and sustain behavioural change and that the programme should be prolonged to 1 year: ‘The duration was too short, and I suggest prolonging it to one year as some people might take longer to change’ (R10). There were positive comments regarding the respondents’ satisfaction with the content and style of the counselling sessions. The respondents were generally satisfied with the counselling sessions and found them to be helpful, acceptable and sufficient. Some reasons given were the two-way communication between the health educator and the respondents and the fact that the information that was delivered was individualized and provided in stages. The information was ‘Ok because it was

personalized (R15) and *'delivered...stage by stage'* (R14). One of the respondents found that the advice based on their food diary was particularly useful (R3): *'When we submitted our food diaries, we get comments and advice. This enabled us to improve our food intake in the future'*.

Theme 2: Seminars

During the 6-month period, two seminars were conducted, entitled 'Prescription for exercise' and 'Eat well live well'. An evaluation of these programmes was conducted in terms of the topics, speakers and the rooms used for these sessions.

There were mixed responses in terms of the topics of the seminars conducted. Some of the respondents were satisfied with the topics selected. They considered these topics to be related and relevant to the programme and that they reflected the objectives of the programme. *'It is relevant because it reflects our objectives in this programme'* (R11). However, other respondents felt that the content of the seminars was too general and not specifically related to the primary prevention of cardiovascular diseases: *'Good start but I would suggest additional topics such as the prevention of heart disease and how doctors can lower cholesterol. Make the talks more precise and more specific to the prevention of heart disease'* (R2). One of the topics suggested and considered to be useful was correct and appropriate ways to exercise: *'I would suggest having sessions on examples of good, correct and appropriate ways to exercise. A verbal explanation is difficult to comprehend. It will be easier for us to remember if we actually practice it ourselves'* (R8).

Generally, the respondents were satisfied with the speakers at the seminars. The speakers were reported to be vibrant, fun and knowledgeable. Their presentation style and skills were satisfactory. However, a language barrier presented itself, especially when the speakers explained certain terms in English: *'[They were] very knowledgeable but the dietician's talk was in English and we could not understand some of the terms'* (R16).

Theme 3: Usefulness of the 'Road to a Healthy Heart' booklet

All of the participants in the intervention programme were given the 'Road to a Healthy Heart' booklet during their first counselling session. The booklet consisted of 66 pages (A5 size) and was written in Malay and English languages. It consisted of chapters on the eight most common cardiovascular risk factors printed in font size eight.

Only three of the respondents admitted to reading the booklet thoroughly. The content of the booklet was said to be similar to the content of the one-to-one counselling sessions, and moreover, the counselling sessions were reported to be more effective: *'I found that verbal communication is better'* (R10) and *'...information is the same as what you are giving us'* (R12). Moreover, the information provided was a collection of basic knowledge about healthy living. This information was considered to be very general and could be obtained elsewhere; it was seen as *'general knowledge which can be obtained somewhere else, something we already know'* (R5). The physical appearance of the booklet was considered to be dull, with too many words. The small font size did not help.

Suggestions on ways to improve the booklet in terms of the format, content and style were provided by the respondents. Generally, most of the respondents suggested making the booklet more colourful, with more pictures as well as fewer but bigger words to capture the interest of the readers.

Process outcomes

Theme 4: Satisfaction with health educator

The evaluation of the process element of the programme involved evaluating the respondents' satisfaction with the health educator in terms of her communication skills, attitude, character, listening and understanding skills and pace when conducting the one-to-one counselling sessions.

The respondents who were interviewed reiterated that the health educator had good communication skills and that she delivered the message clearly and fluently in both Malay and

English: '[She] can speak both Malay and English and thus has alternative ways to express certain terms' (R4), ensuring that there was '...no miscommunication' (R3).

The health educator had an exceptional attitude, which received positive comments from the respondents. They agreed that she was very encouraging and motivating, as well as being approachable, cheerful and humble: '[She was] friendly and humble and easy to talk to...' (R16), and '...encouraging and quite motivated' (R2).

Immediate outcomes

The immediate outcome element of the programme elicited the largest number of comments from the respondents, especially in terms of the potential advantages of implementing this programme in USM.

Theme 5: Potential advantages of implementing the programme in USM

The respondents were of the opinion that the programme will be beneficial for all of the staff at USM. This is because the aims were achievable and useful for everyone. Those who were thought to gain the most were those who led a busy and sedentary lifestyle as well as those over the age of 40 years old: 'It was good for everyone because we can look after our health on campus as, according to the statistics, many of the campus staff have started to become sick at the age of 40 and above' (R16).

The potential advantages of implementing the programme can be seen from the employer's perspective (in this case, USM), and also from the employees' perspective. USM pays for all medical treatment for its employees, and if this involves hospitalization, the government will have to bear the cost of the hospitalization. This is a potential financial burden for USM specifically and the government in general. Therefore, the implementation of this healthy lifestyle programme has the potential to build a healthy USM community as well as to identify high-risk individuals who need medical advice: 'In years to come, we can build a healthy USM community which will be healthy and have perfect eating

habits' (R9). As a result, the programme could reduce medical costs and hospitalizations: '[The programme could] increase awareness of people's health through counselling. The return on the investment by USM would be healthier staff and money saved on treatments and hospitalizations in the future' (R4).

The respondents thought that the implementation of the programme would potentially create an awareness among the employees regarding healthy lifestyles and how to live them out: '[The programme] will make people realize the importance and existence of a healthy lifestyle...Many of us do not realize this and we should create an awareness among the staff here' (R11). Moreover, the periodic blood tests were thought to be beneficial for those who rarely had blood tests, as it would help them to know about their health status: '...Some people are scared of the blood tests because they are worried about the results, but if they join this programme, the regular blood tests will familiarize them with the process and facing the results' (R12).

Theme 6: The effects of participating in the programme in terms of health, lifestyle and fitness

There were generally positive comments on the effects of participating in this programme in terms of health, lifestyle and fitness levels from the respondents. All of the respondents felt that they were healthier after participating in the programme. More specifically, their blood test results had improved, and some of them had even lost weight: 'My health has improved in terms of my blood tests results and weight...' (R1); 'I feel healthier and more energetic' (R7). Improvements in terms of lifestyle, eating habits and exercise were commonly mentioned: '...my lifestyle also improved, especially my fruit intake. My exercise regimen also improved' (R4); '...after a while, I became used to the healthy food and the healthy cooking style and beginning to adapt to it' (R5). With regard to fitness levels, there were mixed responses. One of the respondents felt that his level of fitness had worsened because of a lack of exercise: 'My fitness has decreased, maybe because I have undertaken less exercise lately' (R1). Four respondents felt that their level

of fitness had remained the same as it was prior to participating in the programme: *'I have not experienced a big change in my fitness because I did not increase my level of exercise significantly'* (R5).

Impact

Theme 7: Positive features of the programme

Finally, the normative concern element of the quality assessment of the programme also included the respondents' satisfaction with the programme. In terms of the most enjoyable feature of the programme, both the activities and the psychological benefits were taken into consideration by the respondents.

Some of the respondents thought that the monthly individualized counselling sessions were the best features of the programme: *'Monthly consultations create awareness, provide knowledge and also motivate us to change our lifestyles'* (R4). Similarly, the information received during these monthly counselling sessions was considered to be beneficial. The respondents reiterated that they liked the fact that the content of the sessions covered the whole spectrum of a healthy lifestyle: *'The arrangement of the programme focused on healthy lifestyles on the whole and not on exercise alone. It also included healthy eating. There was lots of guidance on the whole picture of living a healthy life, with references'* (R9). Two of the respondents commented that the regular blood tests had helped them to be aware of their health status: *'Regular blood tests and counselling has helped me to stay on track to maintaining a healthy status'* (R2).

Apart from the physical effects of participating in this programme, the psychological benefits were also important. The respondents felt that the best psychological feature of the programme was the development of self-discipline, which helped participants to improve and maintain their changed behaviour: *'The programme made me more disciplined, which helped me to practice daily. It definitely improved my lifestyle, compared to before the programme'* (R8). Other psychological factors include moti-

vation and encouragement to take charge of their health: *'It was very good because it encouraged us to take care of our health and eat a balanced diet'* (R17).

Theme 8: Negative features of the programme

Mixed responses were received in terms of the respondents' opinions of the worst features of the programme. Half of the respondents had no negative opinions regarding the programme. Others felt that the idea of needing to reach their set goals was mentally stressful and that it was a burden to them, especially during the initial phase: *'Exercising and the target to be achieved was an extra burden and mentally stressful. Nevertheless, it worked in that it helped me to change'* (R5). Second, some experienced mental stress when they were told their blood test results or weight, and this did not improve despite their best efforts: *'Knowing the blood test results was very stressful. I was worried about the outcomes despite them improving our lifestyles'* (R15).

Theme 9: Importance, appreciation and applicability of the programme

All except one of the respondents commented that the programme was applicable and appropriate as well as practical, although at times it was difficult: *'Yes, it is practical, although the eating part is difficult and there are lots of constraints'* (R15). However, one of the respondents felt that it was not practical but that it is essential to maintain good health: *'It was not applicable, but there is no choice if you want to maintain good health'* (R2).

Theme 10: Using knowledge and skills gained in the future

The respondents were fairly positive regarding using the knowledge and skills they had gained as a result of participating in the programme in the future, especially for themselves and family members: *'[I will] implement them at home and educate my family and children to eat more fruit and vegetable and a balanced diet'* (R4). The participants would like to be role models for others to see and learn from: *'It is important to*

spread the information to others, as well as practicing it ourselves and to be an example to others as well (R9).

Theme 11: Recommending the programme to others

The programme was considered to be a good programme, which benefitted the respondents' lives. Thus, the respondents stated that they would recommend the programme to others, especially their family members, colleagues and friends: *'[I would recommend it] to all those who have yet to participate in this programme because I feel that this programme is beneficial and is a positive aspect of our lives. I want others to benefit from it as well'* (R9).

The respondents would primarily recommend the programme to those who were overweight or who did not take care of their health, probably due to their busy schedule: *'[I would recommend it] to my friends and other lecturers who are always too busy and have no time to take care of their health and who frequently attend meetings and conferences which serve unhealthy food'* (R13). They would also recommend the programme to those of an advanced age and those who frequently take medical leave from work: *'[I would recommend the programme] to my colleagues who have not attended the programme because they are overweight or always take medical leave, so that they know what to do and how do it correctly'* (R16).

Suggested improvements

Following on from this, suggestions for improvements to the programme were received from the respondents. It was suggested that the blood test results for each participant should be presented in a graph, so that it would be easier for the participants to comprehend the changes in their blood test levels: *'[They should] prepare a graph for each blood test instead of tables. Graphs are easier to comprehend compared to tables. This can also act as self-motivation and a starting point for behavioural change'* (R1).

Five of the respondents felt that information regarding the benefits of the programme should

be disseminated to those who have yet to participate to interest them: *'More information should be given to staff in order to attract their interest, so we can encourage others to participate by informing them of the benefits of participating in this programme'* (R8).

Discussion

The findings from the interviews were generally positive. They provided an insight into the participants' opinions on the quality and effectiveness of the programme. The respondents also gave some suggestions regarding how to further improve the programme to make it more relevant for the recipients.

The respondents were generally satisfied with the various aspects of the structure of the counselling programme. The flexibility of the timing of counselling and its duration and location were deemed to be satisfactory by almost all of the respondents, unlike the results of a study by Harting *et al.*, which reported that the participants of a programme were not satisfied with the waiting time in the programme.⁹ Therefore, the importance of allocating ample time for each counselling session is emphasized. One of the aspects that gathered a mixed response was the frequency of the counselling sessions and the duration of the programme itself. Programmes with scheduled and frequent follow-ups were found to be more effective and can build trust between the health educator and the respondents. These meetings can be face-to-face or via email.¹⁵ The premature cessation of a programme often resulted in the reversion of the changed behaviour. There is no conclusive evidence regarding the ideal follow-up period. It can range from six weeks to more than 12 months. A minimum of a 6-month follow-up was thought to be required to assess the sustainability of a programme.¹⁵

The content and style of the counselling were very well received by the respondents. The use of two-way communication and individualized counselling sessions was frequently preferred. Two-way communication centres around a partnership and collaboration, whereby the

participants' own experiences and intentions are central in the decision-making process. This ensures their compliance with the decisions made.¹⁹

Some of the respondents felt that the topics presented during the seminars were too general and compact. The language used by the speakers might not be suitable for a diverse audience in terms of their education level and ethnicity. Similarly, a more educated audience would expect to receive more specific information instead of general information, which is readily available. Thus, the topics should be more specific with reference to cardiovascular disease prevention and more relevant to the participants. The seminars should also be presented in a language that will be understood by everyone. It is essential that the speakers avoid any medical jargon and use language that the audience can comprehend.²⁰

All of the participants in the programme were given a copy of the 'Road to a Healthy Heart' booklet. A few of the respondents found it was useful, but almost all of them did not read the booklet thoroughly, because of the physical appearance and the contents of the booklet. However, numerous studies reported the acceptability of the booklets on health-related topics. Both health educators and participants regarded such booklet as important resource for participants to increase knowledge, attitude and behaviour of the participants.⁴⁻⁶ Therefore, an improved 'Road to a Healthy Heart' booklet might improve its acceptability among the participants. Almost all USM employees have access to the Internet and therefore can readily obtain information from it. However, not all of the information posted on the Internet is evidence-based and trustworthy. To provide information for these employees to look for learn from, a website could be developed. Computer-tailored intervention for behavioural change is resource-savvy and has been very successful.^{21,22}

The respondents found the health educator's communication and counselling skills as well as her attitude to be satisfactory. It was important that the health educator should possess a positive attitude and skills and build a close relationship

with the participants to create a positive atmosphere. Good communication skills and a positive attitude are known to be the mediators of behavioural change and can affect participants' attitudes and behaviours and thus ensure the success of the programme.^{20,23} This finding was consistent with studies reported elsewhere.^{9,24,25}

All of the respondents felt that the programme was beneficial for everyone, especially with the proliferation of sedentary lifestyles and unhealthy diets. Numerous potential advantages of the programme were stated, ranging from a reduction in health-care costs for the organization to a reduction in stress and healthier lifestyles for the employees themselves. This has been supported by studies published elsewhere.^{3,26-31} In terms of improving lifestyles, both single-risk factor intervention and multiple-risk factor intervention studies have been reported.³²⁻³⁶ Similarly, cost-effective studies have shown that lifestyle modification has been associated with a reduction in sick leave and is generally cost-effective.^{37,38}

In addition, the regular health screenings provided information for the participants regarding their current health status, and this can be a motivating factor for them to initiate or encourage behavioural change. The benefits of health screenings have been studied. An increase in awareness on the factors influencing health was reported, and this awareness was extended to their family and friends.⁵ Positive outcomes were reported among high-risk individuals and for certain risk factors such as serum cholesterol and blood pressure.^{39,40} Health screening has been reported to lower cardiovascular risk and mortality.⁴¹⁻⁴³

One of the disadvantages of the programme was the uncertainty of the outcome and the returns from investment in the programme. The lack of support from the higher authorities and the employees themselves might have caused the failure of existing health promotion initiatives in USM under the healthy campus initiative.⁴⁴ Therefore, concurrent supportive home and school environment is important and can have an impact on the outcome of a health promotion programme.^{3,5}

The respondents felt that their health and lifestyle had improved as a result of participating in the programme, thus supporting the effectiveness of the programme. However, their fitness had remained very much the same. Fitness can only improve after a period of regular exercise, and most of the respondents had failed to undertake a sufficient amount of exercise on a regular basis. Studies have shown that by modifying our lifestyle, there was improvement in health.³

The information received during the individualized counselling sessions was one of the best features of the programme. The customization of the information received was considered to be more persuasive and effective.⁴⁵ Individualized counselling allowed the suggestions for behavioural changes and goal setting to be tailored.¹⁵ Regular blood tests enabled the participants to know their health status and motivated them to improve their lifestyle. This was supported by an evaluation of a 2-year community-based health promotion programme that reported improvement in perception in health and enable the participants to take better care of their health.⁸ Knowledge about their serum cholesterol level was associated with an improvement in this area during follow-up in individuals with higher pretest levels.^{46–48} Other benefits included increased self-efficacy and self-discipline, allowing participants to change their behaviour. Perceived self-efficacy is a major predictor of behavioural change.⁴⁹

Some negative comments about the programme included the belief that the goals set were difficult to achieve and hence became a burden to the participants. It was recommended that the goals should be agreed upon by both the health educator and the participants and that these goals should be measurable and achievable in the near future. There should be a balance between meeting the expectations of the health educator and that of the participants themselves.^{50,51}

It was suggested that regular group exercises should be held to teach the participants about correct exercise methods and to motivate participants to exercise regularly. Group-based activities would complement the individualized

counselling sessions. This would enable social interactions, role modelling and positive learning from observation.¹⁵

The respondents felt that they had gained from the programme, both physically and psychologically. The personalized advice and periodic blood tests had improved their health status. It has been reported that the five principles of a quality intervention are relevance, individualization, feedback, reinforcement and facilitation.⁵² These principles were applied during the course of this programme by providing personalized feedback and assisting the participants to modify their behaviour.

Limitations

The presence of the health educator who conducted the interviews may have led to Hawthorne effects, because the same person also conducted the counselling sessions. However, the purpose of the interviews was explained to the interviewees prior to their commencement.

Conclusions

The respondents were generally satisfied with the structural aspects of the programme except the 'Road to a Healthy Heart'. The respondents felt that the programme could benefit everyone including the university in terms of lowering health-care costs and hospitalizations. The potential challenges were the lack of support from potential participants and the university's authority in creating a supportive environment and facilities for healthy lifestyle. All of the participants highly recommended the programme to their family and friends. Suggestions derived from the interviews should be taken into account to improve the current 'Love your Heart' programme.

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Conflicts interests

The authors declare that there is no conflict of interest.

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