

Evaluation of the International Garden Festival Health Fair

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Mersey Regional Health Authority's strategy for health promotion includes increasing the general public's awareness of the individual and collective action necessary to improve health. The development of a 'Health Fair' was part of this process. The Health Fair was established as a feature at the International Garden Festival in 1984 and was used to denote a range of activities rather than the building where some of the events took place. The objective was to provide active learning which involved people in a consideration of their health status in different ways. One particular aspect was fitness testing. A sample of 234 people who undertook the fitness test over a two week period were interviewed by questionnaire. Twenty-six percent of males and 25% of females were concerned about their results and of these, 70% intended to exercise more. A follow-up questionnaire, sent 12 months later, produced a 67% response rate. The most obvious behaviour change was that 27% had been exercising more and 37% said that their diet had improved.

Introduction

Mersey Regional Health Authority's strategy for Health Promotion has two main elements¹:-

- (1) To place Health Promotion on the agenda of the key decision-making bodies within the

Region. These include Health and Local Authorities, Community Health Councils and many Voluntary groups. By doing this it is intended to foster an informed debate about the scope for Health Promotion and Preventive Medicine and to pave the way for intersectoral collaboration.

- (2) To increase the general public's awareness of the individual and collective action necessary to improve health.

Setting the agenda for key decision-making bodies was the aim of 'Health in Mersey – a Review' which was a profile of health and disease in the Region from which were identified twelve priority topics for Health Promotion.² The report was launched at a major Health Promotion conference attended by 550 opinion formers and decision makers.

Lalonde's concept of influencing the entire health field in which health is shaped was the basis on which the consciousness raising element was developed.³ This was addressed with the development of the Health Fair which was based on the 'high tech – high touch' approach.⁴ Modern technology – high tech – is used to convey information; the individual then interacts with that technology to obtain information with the help of a health worker (not necessarily a health professional) – high touch.

The Health Fair at the International Garden Festival

The International Garden Festival held in Liverpool from April to October 1984 offered an opportunity to bring health related information to a mass audience as part of Mersey Regional Health Authority's Health Promotion strategy.¹

Health was made a major theme throughout the Garden Festival and educational material was featured in a number of areas within the site, including the area containing allotments and other domestic horticultural gardens.

A number of events were held which attracted considerable media attention, e.g. a competition to find the healthiest family on Merseyside. The term 'Health Fair' was used to denote the range of activities rather than just the place where assessments were carried out. The objective was to provide active learning which involved people in a consideration of their personal health status in many different ways and avoided the traditional approach to health education. This was seen as 'consciousness raising' about health and health issues and was intended to provide a precursor to actual behaviour change. Any actual behaviour change from such activity was regarded as secondary.

The Regional Health Promotion unit's activities involved:-

- (1) Static displays: providing information on a range of health matters.
- (2) Dynamic displays: consisting of health oriented activities such as aerobic dancing, yoga, meditation and sports.
- (3) Public participation: involving physical fitness testing and interactive computerised lifestyle assessment.

A quarter of a million of the 3.3 million people who attended the International Garden Festival were estimated to have attended the static part of the fair and approximately 31,000 took part in the lifestyle assessment; 11,000 actually undertook a fitness test.

Funding

The greatest resource allocation came via the Manpower Services Commission who provided 15 full-time and 30 part-time health promotion assistants plus other staff involved in supervision, graphics, technical advice, information and clerical support.

Others involved in financing the health fair included the Sports Council, Health Education

Council, Mersey Regional Health Authority and manufacturers of fitness testing and computing equipment.

Computerised lifestyle assessment

Twelve computers offered a range of self-operated programmes which included a dental health game, an actuarial assessment of longevity and an interactive lifestyle analysis (programmed by E. Hopley). The lifestyle analysis featured on 2–4 of the 12 computers and it provided a printout for each individual, giving advice on their lifestyle. The areas included in the programme were diet, smoking, weight, stress, alcohol intake and heart disease risk.

Fitness testing

The health promotion assistants received training during a two week induction period. This consisted of:-

- (1) Education on major health problems and their relationships to lifestyle.
- (2) Instruction in fitness testing and result interpretation.
- (3) Instruction in the use of computer facilities.
- (4) Advice on communication and presentation to the public.

The venue was constantly manned using a rota system, with additional numbers present on weekends and bank holidays.

The fitness tests used were:-

- (1) Stamina test: heart rate was measured, using a Cardionics Cardiometer, during the final minute of a six minute bout of submaximal exercise on a stationary cycle ergometer (Monark). Aerobic capacity was predicted (Astrand) and a fitness rating given.
- (2) Grip strength: a hand grip Dynamometer (British Indicators) was used. Three grip attempts were made with each hand and the best score for each hand used.
- (3) Flexibility: measured using a sit and reach bench.
- (4) Body fat: skinfold fat was measured at four body sites, subscapularis, suprailiac, triceps, and umbilical – from which % body fat was calculated (Harpenden Skinfold Calipers).

Data was entered on a computer (Commodore 64) and scores were generated by comparisons with the norms and percentiles from the Canadian Public Health Project.⁵ Table I lists the scoring categories.

The Initial Evaluation

A questionnaire eliciting behaviour and attitude was administered over a two week period to 234 people who underwent fitness testing (54% men, 46% women). The interviewing was based on a 1 in 3 sample of attenders at times when it was administratively possible for interviewing to be carried out taking account of the fluctuations in attendance volume.

Results

Most of the respondents were younger adults (68% under the age of 40 years) with an age range of 15–69 years. Of those who were economically active, only 10% had occupations in social classes IV and V of the Registrar General's classification. Approximately two-thirds reported taking regular exercise; 68% of men and 63% of women.

Table I Scoring categories for each element of the fitness testing (based on the Canadian Public Health Project percentile scores)

Body fat (skin thickness)	Obese Above average Average Ideal Slim
Flexibility	Poor Below minimum Minimum acceptable Good Excellent
Hand Grip Strength	Poor Below minimum Minimum acceptable Good Excellent
Stamina	Poor Below average Average Good Excellent

Fitness scores

Only 15 people, 12 men and 3 women had an above average body fat score and flexibility was poor in 13 men and 6 women.

Fifty-three percent of men and 28% of women achieved a minimum score on the grip strength test. However, good or excellent stamina scores were achieved by 73% of men and 68% of women. Of those who took regular exercise, 19% scored below 'good' on the stamina scale compared with 49% of irregular exercisers.

Most of the respondents felt no adverse effects after testing but 17 reported tiredness and 5 were otherwise affected by minor complaints.

Attitudes

Thirty-seven percent of participants thought that their scores were higher than they had expected whereas only 10% thought that they were lower. Twenty-six percent of men and 25% of women were concerned about their results. Forty-two of the 60 (70%) who were concerned about their results said that they now intended to exercise more. This compares with 32% of the 54 people who were not concerned about their results.

Overall, 41% of men and 45% of women said that they now intended to exercise more. Interestingly, 56% of those aged over 40 years intended to take more exercise compared with only 37% of younger people.

A low stamina score seemed to be taken most seriously in the battery of tests with 74% of those with low scores intending to exercise more compared with only 36% of high scorers.

Regular exercisers had less intention of exercising more than irregular exercisers (38% compared with 52%).

The Follow-up Evaluation

Twelve months after the initial interview, the 234 people in the sample were sent a further questionnaire to complete themselves. The first mailing produced 124 replies (53%). A further 33 people responded after the second mailing, giving an overall response rate of 67%.

Results

Recall of fitness test scores

A majority of the respondents claimed to remember their fitness test scores. The lowest recall rate was for grip strength at 93.5% and the highest was body fat at 95.5%. A comparison of their actual score and the score they claimed to remember shows that over two-thirds who said they remembered their scores, had remembered correctly (see Table II). It is worth noting that 22% of people overestimated their body fat score i.e. perceiving themselves as more overweight than they actually were on testing.

Behaviour change

Exercise In reply to the question 'Have you been exercising more, less or the same since the Garden Festival?', 27% said that they had been exercising more, 17% less and 55% said they exercised with the same frequency. Of those who were exercising more, 57% were undertaking a new exercise, of which swimming was the most popular, the remainder were undertaking a previous form of exercise more frequently.

Smoking Sixty-six percent of respondents were non-smokers. Of those who were smokers at the time of the Health Fair, 15% were smoking more, 25% were smoking the same amount, 20% were smoking less and 40% had stopped.

Alcohol Ten percent of the sample thought that they were consuming more alcohol but 16% were consuming less; 68% reported no change in their consumption; 6% were alcohol abstainers.

Table II Recall of fitness test results

Test	Claimed remembered n (%)	Recall		
		underestimate	accurate	overestimate
Body fat	148 (95.5)	9 (6)	106 (72)	33 (22)
Flexibility	147 (94.9)	37 (25)	105 (71)	5 (3)
Grip strength	144 (93.5)	15 (10)	113 (78)	16 (11)
Stamina	145 (94.3)	13 (9)	113 (78)	18 (12)

Percentages do not total 100 because of rounding.

Diet Thirty-seven percent of respondents said that their diet had changed by consuming less fat, more fibre and more fruit and vegetables; 6% thought that their diet had deteriorated and 57% said there had been no change.

Relaxation Seventeen percent thought that they were more relaxed than previously; 15% claimed to be less relaxed and 67% reported no change.

Difficulty experienced in changing behaviour

Sixty percent of respondents wanted to change aspects of their lifestyle but found difficulty in doing so. Some of the reasons given were individual based, such as having enough willpower to cut down food intake and enough time to take regular exercise, others were due to not being able to find 'healthy foods' and not having access to recreational facilities.

Sixty-nine percent learnt something of value at the Health Fair. Comments ranged from gaining knowledge about health in general to how to actually change aspects of their own lifestyle. Eighty percent wanted another fitness test arranged in the future.

Non-responders

The non-responders to follow up did not differ from those who replied in terms of social class, sex, age and 'concern about the result of the fitness test.'

Discussion

It is generally accepted that all health promotion initiatives should be evaluated. The health fair concept was part of the Regional strategy for consciousness raising about health and health related issues, designed to act as a precursor to behaviour change. The evaluation concentrated on actual behaviour change at follow-up 12 months later, as it is easier to quantify than attitudinal or knowledge change, but is less directly related to the original purpose of the evaluation.

The experience of carrying out this study has served to identify several sources of bias which should be taken into account when planning the evaluation of 'live events.' For example, the International Garden Festival attracted a select population by comparison with the general public, with an over representation of female, middle aged, more affluent individuals (NOP survey of IGF attenders). From within this total attendance there may be a selection on attendance by socio-economic groups at the health fair itself and it also seems that the fitness testing attracted young, and possibly fitter people. Selection by socio-economic group was evident by the local pressure to take the health fair out to locations in the community because of the cost of attending the Garden Festival. The results obtained from fitness testing in the community in Mersey Region show considerably lower levels of fitness, thus supporting the idea that the fitness testing at the Festival attracted a much fitter population. However, comparison of each person's obesity score with their body mass index suggests that the testers tended to record lower obesity scores than would have been expected by the body mass index score, thereby overestimating their overall fitness.

The fitness test results were compared with norms generated from a Canadian population which may not be entirely satisfactory and new norms need to be developed which aim at the 'ideal' fitness level rather than population averages. An attempt to quantify local fitness norms has been undertaken in the West of Scotland.⁶ Knowledge of the local perceptions of fitness would also be useful.

Problems also arise with attempting to draw a systematic sample when the volume of attendance is changing. A sudden influx of people meant that the assistants were unable to devote time to special interviews. This could have been overcome by using a separate person for the interviews. Similarly, it would have been useful to have recorded more base line data about each individual at the initial interview but again this was limited by the time available to do so.

In spite of possible biases, there does seem to have been an actual change in behaviour in the three main topics of the health fair i.e. diet, smoking and exercise. Even if the responders are atypical and the non-responders have not changed, there still appears to have been an effect on behaviour (24% with a better diet, 20% taking more exercise and 6% smoking less or stopped).

Evaluation of the health fair has led to changes being made in the components of fitness testing (which is now undertaken on double decker buses travelling around Mersey Region).

Acknowledgement

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