Do health checks cause stress?

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Data are reported concerning social responses to health checks in an occupational
setting. Previous research has suggested that screening may be a stressful
experience. This, in turn, has contributed to a degree of scepticism about the value
of health checking. No evidence was found in the present study to support the
proposition that health checks cause such responses. It is shown that health checks
prompt recipients to try to engage in health promoting behavioural changes. The
study was a randomized controlled trial of 1,371 persons employed in a large
engineering factory in the West of Scotland.

Key words: Behavioural change; coping; health checks; health promotion; stress.

INTRODUCTION

This paper reports on data about social reactions to health
checks in an occupational setting. The data presented
were derived from a randomized controlled trial of the
effectiveness of the provision of different types of health
information on health-related behaviour change, blood
pressure, serum cholesterol and body mass index. As
part of the trial it was decided to test the proposition that
screening healthy people may cause stress.

Previous studies have shown that risk assessments
sometimes result in raised anxiety and sometimes do
not. There are a number of studies that point towards
the adverse effects of screening. Haynes et al., for
example, screened for hypertension among steel workers
and found that absenteeism increased among those who
were found to be, and were told that they were, hypertensive.

The authors concluded that the absenteeism was
associated with becoming aware of the condition. Stoate,
reported that ‘there is a real risk of causing distress by
screening healthy adults’. Indeed the idea that screening
and health checking are potentially stressful enjoys con-
siderable currency especially among those sceptical of
the value of health promotion. Recently Marteau
et al., examining the psychological effects of cardio-
vascular risk assessment, found no increase in concerns
about heart attack among those screened. The allegedly
damaging effects of screening have been dismissed by
some writers as has the idea that a group of worried
well are created by preventive interventions.

debates led the present research team to consider the
social, as well as the physical consequences of going
through health checks.

Design

The design was a randomized controlled trial which
lasted 12 months. It took place in a large engineering
factory employing over 2,600 people in the West of
Scotland. The work force was predominantly male and
blue collar. One thousand six hundred subjects were
randomly recruited from the payroll, of whom 1,381
accepted the invitation to participate in the study. Ten
of these were excluded because they were in another
coronary intervention study or were on lipid lowering
drugs.

Individuals were allocated by computer randomization
to one of five groups. It was calculated that 200 subjects
in each of the study groups would show a difference in
the mean change between any two groups of 0.3 of a
standard deviation to be detected with 80% power at the
5% significance level. All groups were seen at enrolment
(Stage 1), at five months (Stage 2), and at the com-
pletion of the study after 12 months (Stage 3). Details
about family and personal medical history, height,
weight, blood pressure and non-fasting plasma chole-
sterol (laboratory and reflotron) were collected. Data
concerning health behaviour (diet, alcohol consumption,
exercise and smoking) were also collected. The five
groups were recipients of one of the following interven-
tions during a health check: (1) Health education with-
out information about cholesterol or a coronary risk
score. (2) Health education with feedback on cholesterol,
but without feedback on the coronary risk score. (3) Health education with feedback on the coronary risk score but not on cholesterol. (4) Health education with feedback on cholesterol and on coronary risk score. (5) No feedback. (This group acted as the control group. They had physiological and behavioural measures taken at Stage 1 but no feedback was given).

RESULTS

The instrument which was designed to test stress was based on the work of Lazarus.\textsuperscript{14-16} This instrument consisted of 12 items. Subjects had to indicate their response to each item on a five-point scale from strongly agree, agree, through neither agree nor disagree, and disagree, to thoroughly disagree. This instrument was administered immediately after the respondents had had their initial health check. The results are shown for those groups 1-4 that received an intervention compared to the control group\textsuperscript{5} that received no intervention at the first health check (Tables 1-6).

The first part of Lazarus’ model posits that some potential stressors do not get defined or recognized as such by people who face them. Instead the phenomenon are defined as something positive or benign. The first two items in the questionnaire dealt with these possibilities:

Item 1. I found the health check reassuring
Item 2. I was very pleased to have the chance to come along here today.

These were designed to test benign/positive responses to the check. The results are shown in Table 1.

Overwhelmingly the response of the intervention subjects was favourable or not unfavourable to the process of having a health check with a higher percentage of the controls having a more neutral attitude to item 1 (that they were reassured by what happened at the health check). This latter result is not surprising given that other than collection of base-line data, nothing actually happened to the controls at the first stage.

The Lazarus model also suggests that some potential stressors are defined by people who confront them as irrelevant to them. The next three items were designed to assess the irrelevance criteria. These were:

Item 3. The health check did not live up to my expectations.
Item 4. I feel disappointed, the health check did not deal with the issues I wanted to hear about.
Item 5. I only came here today to get time off work.

The results are shown in Table 2.

The majority of responses indicated that the individuals did not regard the health check as irrelevant. A higher percentage of controls were neutral to item 3, (that the check did not live up to expectations), and similarly a higher percentage of the controls were neutral to item 4, (disappointment that the check did not deal with the issues anticipated). Given the design of the trial this is not surprising.

According to Lazarus if something which is a potential stressor is defined neither benign nor irrelevant, it

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* Row percentages have been corrected to the nearest whole number and may not add to exactly 100%.

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becomes a threat and therefore a source of stress. The next three items in the questionnaire were designed to assess threat or lack of it.

Item 6. I was very threatened by what I was told in the health check.

Item 7. I found the actual health check very stressful.

Item 8. I found what I was told in the health check very helpful.

The results are shown in Table 3.

These data show that the vast majority of respondents did not find the check threatening, although a higher percentage of controls were neutral to item 6 ("I was very threatened by what I was told in the health check"). This might be expected given that they received no feedback.

Lazarus argues that a number of behaviours are employed in order to cope with something threatening. The first are direct action and seeking out information. The next items are designed to look for direct action and information seeking responses:

Item 9. I will be able to use the information that I was given to make changes in my lifestyle.

Item 10. I want to make changes in my lifestyle because of what I was told in the health check.

The responses are presented in Table 4.

It is apparent that a large majority of the intervention respondents proposed to make changes in their behaviour by some form of direct action in response to the health check (item 10) and felt that they would be able to use the information given to them to do so (item 9). Given that the controls were not given any information, the percentages reporting neutral responses in this group are not surprising.

If direct action or information seeking do not occur then Lazarus suggests that worry or inaction will follow. The last items specifically tested for the inaction and worry. This information is to be found in Tables 5 and 6.

Item 11 was designed to test for the 'doing nothing' response and item 12 was designed to test for worry:

### Table 3. Threat/harm

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### Table 4. Direct action and Information seeking

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* Row percentages have been corrected to the nearest whole number and may not add to exactly 100%.

### Table 5. Doing nothing

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* Row percentages have been corrected to the nearest whole number and may not add to exactly 100%.
Table 6. Worry

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* Row percentages have been corrected to the nearest whole number and may not add to exactly 100%.

Table 7. Responses at 12 months

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Item 11. It will be difficult for me to change my lifestyle.
Item 12. I was very worried about coming along here today.

While 27% agreed or strongly agreed that it would be difficult to change their lifestyle, 54% did not think so at the time of the check. Only a small percentage claimed to be worried about their health check experience.

The data suggest two things. First, that many of the intervention respondents intended, at the point immediately after they had received the health check at work, to take direct actions of various sorts in order to change their lifestyle in the direction of health gain. Second, the responses suggest a benign rather than a threatening experience. In turn, this suggests that benign and positive responses are linked to intentions to make positive behaviour change, and does not, on the basis of this instrument at least, suggest that the process of experiencing the health check is threatening and something with which people have to cope.16

In order to determine what sorts of responses people had actually made, at the time of the final intervention a further test was carried out 12 months after the initial screening. Using a five-point scale again, respondents were asked to indicate agreement or otherwise with the following statements (results given in Table 7):

1. I was able to use the information I was given in the health check to make changes in my lifestyle.
2. It was difficult for me to change my lifestyle.
3. I was very worried by what I was told in the health check.
4. I still feel worried by what I was told in the health check.

These data show that a majority (65%) of respondents were able to use the information they had received, although 40% found it difficult to make behaviour changes. The data also show that levels of worry had not altered with time and that it would be hard to argue that a group of worried well had been created by the experience.

DISCUSSION

These results are extremely interesting from an occupational health promotion point of view and a number of points may be made. First, for the vast majority of participants, health checks at work did not appear to be threatening either at the time of the check, or subsequently. Second, most participants wanted to do something positive about their health after the check. Third, it is encouraging that 65% either agreed or strongly agreed, at the time of subsequent testing, with the statement that they were able to use the information to make changes in their lifestyle. This suggests both a generally positive response and one which was not simply of short-term duration. The implication of the general positive tone of the responses 12 months after the initial screening, is that
positive support and reinforcement might be very worthwhile follow-up to this type of health promotion activity in the workplace.

Fourth, the above finding must be considered in light of the fact that 40% agreed with the statement that they found it difficult to make changes to their lifestyle. The familiar problems attached to the social and cultural context within which behaviour change may or may not take place is relevant here. The message for professionals is clear: people who want to embark on health enhancing behaviour change need support and help and trying to make change alone is difficult.

Fifth, given that 63% did not report that what they had been told in the health check was very worrying and 26% gave a neutral response, it would seem that health checks, as conducted in this workplace setting, were not, in and of themselves, particularly threatening. This seems to be underlined by the fact that only 8% responded positively to the final item, i.e., that they felt worried by what they had been told 12 months after the check.

Sixth, these data suggest that doing workplace-based health checks is an acceptable way of conducting health promotion. It is viewed positively by the recipients. They may make certain decisions to change behaviour in the direction of health gain. Although this may be difficult for them to put into practice, they are nevertheless pointed in the 'right' direction. The clear implication is that follow-up and support should be an aid to such interventions and that one-off health promotion activities may not be very effective without such support.

CONCLUSION

On the basis of a randomized controlled trial of the effects of health checks as part of coronary heart disease prevention, the evidence is that health checks in this particular work setting, which involved screening for coronary heart disease, did not generate threat for most of the participants. The typical response to the check was positive and one which seemed to prompt an intention to change behaviour in a way which may be beneficial to the health of the individual.

REFERENCES
