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Psychological reactions to information about risk of ischaemic heart disease in general practice

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Objective – To examine the psychological reactions in 40–49 year old men diagnosed as having an increased risk for the development of ischaemic heart disease at a health examination in general practice.

Design – A multipractice study including a questionnaire about the psychological well-being before and 6 months after a health examination aimed at finding an increased risk for ischaemic heart disease.

Setting – General practice in the county of Aarhus, Denmark. Sixty five general practitioners.

Participants – 123 men with and 150 men without an increased risk of ischaemic heart disease.

Outcome measures – Psychological well-being was measured by the General Health Questionnaire (12 item version).

Results – No significant change in GHQ-scores after the screening examination.

Conclusion – Information about increased risk of IHD in 40–49 year old men at a health examination in general practice did not change the psychological well-being as measured by a General Health Questionnaire 6 months after the examination.

Key words: general practice, screening, psychological reactions, labelling, health examination.

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Prevention of ischaemic heart disease (IHD) can be arranged as a high risk strategy, which is directed at individuals with increased risk of IHD. General practitioners (GPs) in Denmark have been recommended to carry out screening for risk factors for IHD (1).

The purpose of identification of individuals with increased risk of IHD is to prevent development of IHD. An unavoidable side effect of screening is that some people who are identified as belonging to risk groups may have negative psychological reactions, due to the fact that IHD

is a serious threat (2). Such reactions can be detrimental to health (3). In the evaluation of a high risk approach to prevention of IHD, it is necessary to examine the psychological reactions in relation to the positive effects on, for example, physical well-being and reduced mortality.

The aim of the present study was to examine the psychological reactions in 40–49 year old men who had been identified as having an increased risk of developing IHD at a health examination in general practice.

Materials and methods

The present study is part of a larger study on the prevention of IHD in general practice, carried out in 1990 with the participation of 65 GPs in two municipalities (Silkeborg and Randers) in the county of Aarhus (2,4).

A total of 2 452 40–49 year old men were randomly selected from the Public Health Insurance register and invited by their GP to a health examination for IHD. As part of the study, the examination was free of charge in one municipality (Randers), while in the other (Silkeborg) there was a fee of 225 Dkr.

The risk-score for IHD was estimated by a simple arithmetic model based on the addition of scores for risk factors for IHD (family predisposition, smoking habits, diastolic and systolic blood pressure, body mass index, and serum cholesterol) (5,6). Accordingly, the men were classified as being at low, moderate, increased, or high risk for the development of IHD. In connection with the examination, all participants had a health talk with the GP, including advice based on their individual risk-score.

Of the 2 452 invited, 1 272 (52%) attended the examination; 164 men were found to have an increased risk and 9 a high risk for developing IHD according to the risk-score.

In the GPs' waiting room, just before the examination, the participants filled in a questionnaire including the "12 item version" of "General Health Questionnaire" (GHQ) (Figure 1). GHQ is a self-administered questionnaire, developed by Goldberg, as a measure for psychological well-being (7,8). The GHQ was designed to cover four elements of distress concerning anxiety and insomnia, depression, social impairment and hypochondria (chiefly indicated by somatic symptoms) and social dysfunction (7,8). A total GHQ-score was calculated as the sum of scores of each question (9). The total score could be within the range of 12–53. A low score indicates psychological well-being.

Of the 173 men with increased/high risk at the initial examination, two were dead and two had moved from the area during the 6 month follow-up period. The remaining 169 men with increased/high risk were invited 6 months later to the second health examination to evaluate possible changes in the risk profile. In order to evalu-

Figure 1. The 12 item version of the general health questionnaire.

Have you recently

1. been able to concentrate on whatever you're doing?
 2. lost much sleep over worry?
 3. felt that you are playing a useful part in things?
 4. felt capable of making decisions about things?
 5. felt constantly under strain?
 6. felt you couldn't overcome your difficulties?
 7. been able to enjoy normal day-to-day activities?
 8. been able to face up to your problems?
 9. been feeling unhappy and depressed?
 10. been losing confidence in yourself?
 11. been thinking of yourself as a worthless person?
 12. been feeling reasonably happy, all things considered?
-

The answers to the questions were on a scale from "Not at all" to "Much more than usual".

ate change in psychological reaction after the first examination, the men with increased/high risk for IHD filled in another GHQ questionnaire, just before the second examination.

As a control group, 188 men were randomly selected from the 1 099 men with low or moderate risk for IHD. Two of these men had moved from the area. The remaining 186 men were asked 6 months later to answer a second GHQ questionnaire. The questionnaires were sent directly to the Institute of General Practice, University of Aarhus.

The statistical analysis used t-test with separate variance estimate testing difference in GHQ-score between the two groups and ANOVA testing difference in GHQ-score between the two groups in relation to system of payment or attendance. The significance level was put at 5%.

Results

Of the 169 men with increased/high risk for IHD, 123 attended the second health examination and filled in the second GHQ. Since two men had not filled in the first GHQ-questionnaire, the response rate was 73% (95% CI 66%–80%). Of the 186 men without increased risk for IHD, 150 returned the second GHQ-questionnaire, i.e. a response rate of 81% (95% CI 75%–86%). There was no significant difference in response rate between the

Table I. GHQ score at the first health examination of participants in follow-up study in relation to risk score for IHD.

	GHQ SCORE		N
	MEAN	(SD)	
Men with increased/ high risk for IHD	24.08	(6.90)	121
Men with low/ moderate risk for IHD	22.65	(5.78)	150

t-test = -1.83 (separate variance estimate) df = 233.9
p = 0.07

two groups ($\chi^2 = 2.55$ df = 1 p = 0.10). Five questionnaires in the former group, and 4 in the latter group, were incomplete and were therefore excluded. Table I shows the GHQ-score at the first examination for the men who were invited to fill in the second GHQ-questionnaire. There was no significant difference in GHQ-score between the two risk groups.

The GHQ-score at the first health examinations was analysed in responders and non-responders to the second GHQ-questionnaire. There was no significant difference in GHQ-score at the first health examination between responders and non-responders at the second GHQ-score in relation to risk of IHD ($F = 0.611$ p = 0.43).

Table II shows the changes in GHQ-scores during the 6 month follow-up period in the two risk groups. A negative value indicates increase in psychological well-being. There was no statistically significant change in the GHQ-scores in the two groups and no statistically significant difference between the two groups (t-test = -0.26 (sep-

Table II. Change in GHQ score 6 months after the first examination of participants in follow-up study in relation to risk score for IHD.

	CHANGE IN GHQ		N
	MEAN	(SD)	
Men with increased/ high risk for IHD	-0.81	(7.02)	116
Men with low/ moderate risk for IHD	-0.61	(5.30)	146

t-test = -0.26 (separate variance estimate) df = 209.0
p = 0.80.

arate variance estimate) df = 209.0 p = 0.80). The data were analysed according to fee or free of charge for the health examination in relation to risk of IHD. No statistically significant difference in change of GHQ-score in relation to system of payment and risk of IHD was found using analysis of variance ($F = 0.010$ p = 0.92)

Discussion

The present study showed that the well-being 6 months after a health examination, at which men were informed about an increased risk of developing IHD, was unaffected by the information.

Psychological reactions after the health examinations were assessed using Goldberg's GHQ-questionnaire. GHQ has proved its value for the measurement of well-being with respect to screening examinations, drug treatment, and social stress (7-11). The 12 item version, used in the present study, is suitable for measurements of changes over time (9,11). This score has proved useful in other studies as an evaluation of changes of well-being in screening examinations (10). The follow-up at 6 months allowed study of real long-lasting psychological reactions, in contrast to the immediate reaction to disturbing information (12).

Previous studies have dealt with sick leave and well-being after identification of risk factors for IHD, usually high blood pressure. The results have varied, some showing a difference, others not (13). The different results are probably due to, or partly due to, problems related to the research methods, e.g. too few participants, different measures of effect (direct effect measure such as well-being, indirect such as sick leave), or differences between the study populations (13).

The relatively low response rate (73%) at the second examination by the men with increased/high risk might indicate poor well-being, but there was no difference in GHQ-score at the first examination between responders and non-responders at the second GHQ in relation to risk for IHD.

It is evident that negative psychological reactions from screening may occur. Recent studies, however, have shown that various strategies can be effective in preventing their occurrence (13,14). The following conditions in the present

programme may have been of importance in the preventing of negative psychological reactions (13,15): 1) The men were invited to the examination. The invitation explained the aim of the examination, stressing that it was voluntary. The men could therefore decide whether they were interested. This contrasts with an examination offered in connection with consultations for other causes. 2) The person who carried out the health examination was the same doctor who interpreted the results and gave advice if there was increased risk of IHD. It was not just a question of obtaining the results. 3) The health examination was carried out by the patient's own GP, who could therefore give appropriate individual advice. 4) Because of the stable doctor/patient relationship, the doctors were able to follow up individual worries at consultations during the study period.

Conclusion

Information about increased risk of developing IHD in 40–49 year old men at health examinations in general practice, following a standard routine, did not affect the men's psychological well-being, evaluated by the General Health Questionnaire 6 months after the health examinations.

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