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THE PSYCHOLOGICAL ASSESSMENT OF PATIENTS WITH CORONARY HEART DISEASE

A PRELIMINARY COMMUNICATION

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MEDICAL thinking in the 19th century was greatly influenced by the work of Virchow who declared that there were no general diseases, only diseases of the organs and of the cells. The concept that local anatomical changes may be the result of more general disturbances which develop as a result of functional, or emotional stress was not put forward until later. Coronary heart disease and perhaps atherosclerosis in general, represent the many somatic conditions where one or more psychogenic factors may be of aetiological, or predisposing significance.

According to Alexander (1939) personality can be defined as the expression of the unity of the organism. The central nervous system is concerned with the regulation of the internal vegetative processes of the organism and also with the regulation of its external affairs, that is, its relations to the environment. The integration of the external and internal affairs of the organism is the function of the highest centres of the nervous system which in human beings we call personality. It was Alkan (1930) who first clearly stated that organic disease may be profitably studied by psychological methods and he pointed out that psychogenic disturbances within the field of the autonomic nervous system may result finally in organic changes, the morphological mechanisms of which form only the last links of an intricate causal chain. Independently, through his psychoanalytic researches, Alexander (1939) was convinced of the psychogenesis of, at first, gastro-intestinal disorders, and later respiratory and vasomotor disturbances.

Dunbar (1935) collected a great deal of data regarding psychosomatic interrelations and clearly indicated the extent of the field. Many other workers have followed these pioneers in the field of psychosomatic medicine and results of numerous researches have been published, some of which are concerned with coronary heart disease. The purpose of this communication is to review briefly the literature on the relationship between personality and emotional disturbances and coronary heart disease and to set out some preliminary results which have been derived from our own work in this field.

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Review of Literature

Although Kessel and Munro (1964) stated in a survey of psychosomatic studies based on epidemiological methods that there was little evidence to support the theory of a " coronary " personality, there are many workers who have attempted to prove otherwise.

Friedman and Rosenman (1960) claim that almost invariably the younger coronary patient presents a peculiarly distinctive personality complex which they designate " behaviour pattern A ". This behaviour pattern was found to consist of 2 series of identifying traits. The first of these, the emotional ones, consisted of (1) extreme competitiveness, (2) inordinate ambition, (3) unassuaged restlessness and (4) a profound sense of time urgency. The second series of traits consisted of the peculiar somatic or motor manifestations that subjects experiencing the emotional traits listed above frequently display. Thus, a man harbouring an excessive spirit of drive and competitive striving, or sense of time urgency was apt to exhibit the motor manifestations of those feelings, such as fist-clenching, desk-pounding, etc. The men with behaviour pattern A exhibited a higher average serum cholesterol, a faster clotting-time and a greater incidence of arcus senilis than men in two control groups, one of which was composed of subjects exposed to no significant time or competitive pressures and the other of men exhibiting an anxiety state.

These results have not been adequately duplicated and are not generally accepted. In a recent publication Keith, Lown and Stare (1965) report that among coronary patients only half were designated as the Friedman and Rosenman behaviour type " A " and they state that the description did not differentiate these patients from others without coronary heart disease. They noted, however, that when coronary patients were divided into those with angina pectoris and those with myocardial infarction angina patients were much more closely related to the behaviour type described by Friedman and Rosenman.

Jouve *et al.* (1961) found that, in a comparative study of 100 patients suffering from angina pectoris and of 100 control subjects, there was a higher incidence of obsessional personalities in the group of patients than in the controls. Cleveland and Johnson (1962) state that coronary patients reveal a pattern of personality characteristics, including chronic restlessness, underlying passivity and suppressed hostility, which they surmised might have a bearing on their propensity for coronary disease. On the other hand, Forssman and Lindegard (1958) found that, of a large number of personality dimensions measured in a group of post-coronary patients and in a group of controls, the only significant difference between the two groups was the disposition of the patient group to bouts of periodic depression. They compared this work with that of Miles *et al.* (1964) who showed only insignificant difference in personality pattern between post-coronary patients and a comparable control group. However, Miles *et al.* did find in the coronary group a tendency towards lower powers of introspection and a difficulty in controlling aggression.

Wandwell, Bahnson and Caron (1963) found that coronary patients revealed an " unstable self-concept " when compared to sick control patients, and they were also more " committed " than were sick control

patients to prevailing ethical norms. Gertler, Garn and White (1951) claim that a psychological history has shown the coronary patient to have strong goal-directed drives, usually with accomplishment, but that the " aggressive " pattern was not an outstanding feature. Their finding of " less masculinity " in coronary patients agrees with the findings of Wandwell, Bahnson and Caron (1963). The work of Ibrahim *et al.* (1964) has shown that, although the patient with coronary heart disease exhibits a distinctive pattern of psychological attributes, they were unable to show that this pattern precedes the disease.

The situation to-day would seem to be the same as that in 1959 when Ostfeld stated that, after 50 years of study, the relevance of psychological stress to vascular disease is still unclear. This is certainly due in part to the difficulties encountered in discovering, or defining psychological factors and in measuring such factors. So far no clearly defined pattern of association between psychogenic factors and coronary heart disease has emerged. This does not exclude the possibility that such a pattern may still emerge, nor does it exclude the possibility that the personality pattern and coronary heart disease may be due to the same underlying aetiological factor or factors.

Aims and Methods

The present project aims to investigate patients suffering from coronary heart disease, with or without essential hypertension, to determine the existence of any identifiable set of psychological factors which might differentiate the subjects from a control group matched for age, sex, urban or rural domicile, marital and socio-economic status. This present communication deals with patients with coronary heart disease. It is also intended to study specifically patients with or without hypertension, but this project will be delayed until we have data on a larger number of subjects.

All patients of both sexes under 60 years, and in the case of bundle branch block under 65 years, are examined by means of a Cattell 16 personality factor questionnaire. In addition all patients under 55 have a more elaborate psychological assessment carried out including biographical inventory, a structured interview, an I.E.S. test and a Rorschach. This preliminary report deals only with the results of the Cattell questionnaire derived from 63 successive male patients under 60 years. The Cattell test consists of 187 items put forward as questions, each with three response categories: true, do not know, or false. It is designed to measure how the subject pictures himself as a person and the responses are combined to yield scores on 16 dimensions of personality. The significance of individual questions is not obvious to the subject. The following table gives a brief description of the 16 personality traits. A more detailed description of these factors can be found in the 1957 edition of the 16 P.F. Handbook.

The 16 factors coded by alphabetical symbols refer to personality traits. Each of these traits is scored on a 10 point scale, with 1 and 10 as the scores furthest from the norm, as follows:

1. Reserved (1-5), or outgoing (6-10) (A).

2. Less intelligent (1-5), or more intelligent (6-10) (B).
3. Affected by feelings (1-5), or emotionally stable (6-10) (C).
4. Humble (1-5), or assertive (6-10) (E).
5. Sober (1-5), or happy-go-lucky (6-10) (F).
6. Expedient (1-5), or conscientious (6-10) (G).
7. Shy (1-5), or venturesome (6-10) (H).
8. Tough minded (1-5), or tender minded (6-10) (I).
9. Trusting (1-5), or suspicious (6-10) (L).
10. Practical (1-5), or imaginative (6-10) (M).
11. Forthright (1-5), or shrewd (6-10) (N.).
12. Placid (1-5), or apprehensive (6-10) (O).
13. Conservative (1-5), or experimenting (6-10) (Q 1).
14. Group dependent (1-5), or self-sufficient (6-10) (Q 2).
15. Casual (1-5), or controlled (6-10) (Q 3).
16. Relaxed (1-5), or tense (6-10) (Q 4).

Preliminary Findings with the Cattell questionnaire

At this preliminary stage we have analysed the results of the Cattell administered to 63 male patients under 60 years. In comparing this group of patients with the standard scores of the American adult male population, Factors C, E, F, H and Q 1 showed a lower score and factors O, Q 2 and Q 4 showed a higher score to a degree which was significant at the 0.1 per cent level of confidence. Of these the low C score, indicating affected by feelings, emotionally less stable, or easily upset, was the most striking with a standard deviation of minus 6.28. Thus our patients when compared with the "average" adult American male were found to be less emotionally stable, more conforming, more serious, more shy, more conservative, more apprehensive, more self-sufficient and more tense.

These results seem to differ from those of Ostfeld *et al.* (1964). Their results of a prospective survey of 1,990 American males aged 40 to 55 showed that the total coronary group scored higher than the non-coronary group in Factor L and Factor Q 2. Also, when their coronary group was sub-divided into those with angina and those with infarction, the angina group scored lower than the infarct group on Factor C. They deduced from these results that the men in the coronary group were more independent in their social relationship, more suspicious about the motives of other persons and had greater feelings of inner tensions than the men in the non-coronary group. Also that the men who developed only angina pectoris in comparison with the men who had myocardial infarction and with the men who were in the non-coronary group, had a greater tendency, prior to the occurrence of the disease, to complain about somatic symptoms of all sorts and to be worried about the state of their health even in the absence of objective findings.

Discussion

The difference which we have found in our patients compared to the adult American population could be due to many factors. Our patients' significant personality traits may be the immediate result of the illness

and consequent hospitalisation, or there may be an ethnic difference resulting in different Irish and American norms. Before we can consider our work to have any value these various avenues must be explored. With this in mind we propose to administer the questionnaire to a control group of non-coronary subjects matched with this experimental group for age, sex, occupation, marital status and domicile, whether urban or rural. Clearly for the purpose of interpreting the Cattell 16 P.F. questionnaire in different groups of patients, it is important that a population " norm " should be established.

If a difference between these groups appears, we must then outrule the possibility that this difference is due to the fact of illness and hospitalisation. This we propose to do by comparing our patients with a third group of subjects who have been hospitalised for a similar length of time with an illness of similar severity engendering much the same type of apprehension as would acute or chronic coronary heart disease. Comparison between these three groups would show whether or not any personality differences exist which are peculiar to the coronary heart disease patients and are not found in a healthy control group, or in patients suffering from illnesses of similar severity. Only by eliminating the effect of illness and hospitalisation, and by establishing a basic " norm " for the Irish population, can we hope to attribute aetiological importance to the present rather significant trend of personality types found so far in our patients.

Summary

As part of a wider study of patients with coronary heart disease a psychological assessment of all patients under 60 years is carried out. This psychological assessment includes an examination by means of the Cattell 16 personality factor questionnaire.

This communication deals with some preliminary results of the Cattell questionnaire derived from 63 male patients with coronary heart disease under 60 years. The results are compared to normal American adult male standards and to a group of American patients with coronary heart disease. Clear personality traits are noted in the 63 patients. The significance of these preliminary results is discussed and the need for further work on patients and controls is stressed.

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