"SCREENING" OF THE POPULATION FOR RHEUMATIC DISEASES*

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The prevalence of rheumatic disorders has been investigated in the population of some villages in the northern part of the Netherlands.

Material

All these examined were over 14 years old, and lived in the village of Ten Boer, on the mainland of the province of Groningen, and in the villages on the Wadden-isles, Schiermonnikoog and Terschelling. To begin with, the people were informed verbally and in writing of the importance of the inquiry. The persons approached totalled 4,212 (567 from Schiermonnikoog, 791 from Ten Boer, and 2,854 from Terschelling); 80 per cent. (comprising 1,595 men and 1,783 women) responded, the greater part of the 20 per cent. who did not respond being prevented from doing so by reason of absence, sickness, etc.

The age structure of the population examined followed the usual pattern, except that the 14-20 year age group and also to some extent the 21-30 year and the 31-40 year groups were less well represented than usual. This can be attributed to the fact that many older persons return to Schiermonnikoog and Terschelling for their retirement, while young persons of between 14 and 30 years of age often leave these districts to pursue their studies or to engage in sea-going trade.

Method

The persons agreeing to participate were written to and called for interview street by street. The investigators (all specialists in rheumatology) questioned them and noted their replies according to a set formula. The questions concerned general health, presence of rheumatism (including its form and localization), time of onset, treatment and the results obtained, living conditions, working conditions, and the relation if any of these factors to rheumatism.

After the interview the cases were classified as negative or positive. The positive class included the following:

- (a) Those suffering at the time from pain which could be attributed to rheumatic disease;
- (b) Those who had suffered such pain in the previous year.

All other persons were classed as "negative". All "positive" cases were either examined immediately or referred with the agreement of their own general practitioner to a rheumatism clinic.

The value of this inquiry rests on the precision with which the questionnaires were completed and interpreted. There remains inevitably a certain element of subjectivity and superficiality, but it was found that soon as the investigators had acquired a certain degree of skill each interview took only about 3 minutes and that very often the negative cases could be disposed of in a minute or so.

At Terschelling the inquiry was carried out in collaboration with the mass Radiography Unit of the Anti-Tuberculosis Campaign, and the co-operation between the two teams (both organized by the Green Cross) was excellent in both the preparatory and the interview stages. A single organization was concerned with the preliminary arrangements, and those concerned only had to attend once, which seemed to be much appreciated by the public.

Results

Among 3,378 persons interrogated, 621 (18.4 per cent.) were found to be suffering from rheumatic complaints (Table I). About 25 per cent. complained of "rheumatism", but after examination and diagnosis this was reduced to 18.4 per cent. The proportions of men and women classed as "positive" were 13.5 and 21.7 per cent. of the total; about 3.2 per cent. of them were found to be suffering from a rheumatic disease serious enough to require medical treatment; most of the rest were already under medical care.

Acute rheumatism (rheumatic fever) was diagnosed in 0.29 per cent., and rheumatoid arthritis and ankylosing spondylitis in 1.06 per cent. of the persons examined. Thus 1.35 per cent. of the whole

* This is a condensed account of the full report of this large-scale survey (de Blécourt and Basart, 1953, 1954).

population under review were suffering from the most serious forms of rheumatic disorder. About 60 per cent. of these were in need of medical treatment, while in the rest the disease was in remission.

TABLE I
PERCENTAGE AFFECTED WITH VARIOUS
FORMS OF DISEASE

Complaint	No.	Per cent. of all Complainers	Per cent. of Total
Rheumatic fever	10	1.6	0.29
Rheumatoid arthritis ..	32	4.8	0.81
Ankylosing spondylitis ..	4	0.6	0.1
Osteo-arthritis	234	37.7	6.9
Rheumatism of the soft tissues	341	55.3	10.3
Total	621	100	18.4

In the positive group, 79.1 per cent. of the women and 84.5 per cent. of the men were over 40 years of age.

The proportion of sufferers from arthropathies was 44.7 per cent., and from rheumatism of the soft tissues 55.3 per cent. In women the latter often took the form of neuromyalgic symptoms in the cervico-scapular region, in men it most frequently presented as sciatic pain.

It is possible that fashions in dress are important factors among the women, and agricultural labour among the men.

No differences were noted between the inquiries carried out in July and those done in November, and there were no regional differences, though the figures were in every instance too small to allow definite statistical conclusions.

Discussion

The results of other investigators in Sweden, Denmark, and England correspond closely (Table II).

TABLE II
RESULTS COMPARED WITH THOSE OF
OTHER INVESTIGATORS

Investigation ..	Present Study	Kalbak (1953)	Kellgren and others (1953)	Bohman (1948)
Country	Nether- lands	Denmark	England	Sweden
Proportion of posi- tive cases	18.4 per cent.	18 per cent.	19 per cent.	—
Sex ratio	13.5/21.7	—	16/21	—
Cases needing medi- cal treatment ..	3.2 per cent.	9 per cent.	10 per cent.	3.8 per cent.
Total acute rheuma- tism, rheumatoid arthritis, and anky- losing spondylitis	1.35 per cent.	—	2.4 per cent.	1.9 per cent.

In Holland, as in Denmark and England, most of the sufferers (especially the men) were in the age group 41-60 years.

Our investigation also confirms the view of Kalbak (1953) that cervico-scapular rheumatic pain predominates in women and sciatic pain in men. On the other hand, whereas Kalbak found that 66 per cent. of rheumatic complaints were muscular and 34 per cent. articular, our figures are 44.9 per cent. articular and 55.1 per cent. muscular. This disparity and also the high incidence of cases of osteo-arthritis in our material is probably due to the higher average age of our cases.

All the houses occupied by the persons examined (a total of 2,638) were checked for their degree of dampness, using hygrometers specially designed for the purpose (the results of this study are reported elsewhere). Although most of the houses were damp, this did not seem to increase the frequency of rheumatic complaints to any appreciable degree; this is in agreement with the observations of Kellgren and others (1953) in England, and of Dahlberg and Grubb (1951) in Sweden.

Without giving too much importance to preliminary observations it appears that a useful method has been evolved for making a rough estimate of rheumatic morbidity in various areas of the country.

By analysing figures thus obtained in relation to those produced by other workers, it is possible to formulate conclusions about the need of clinics, and their number, nature, and location. A repetition of these inquiries after 5 or 10 years' work by such clinics will show whether or not they are useful.

When further inquiries on these lines have been carried out in other places, the influence on the rheumatic diseases of such factors as geographical location, occupation, climate, sex, etc., may be gauged more precisely. For this purpose this sampling process might be carried out in the same way throughout the country.

Summary

An investigation has been made of the incidence of rheumatic disease in a specified area of North Holland; 4,212 persons over the age of 14 were approached, and 3,378 (1,595 men and 1,783 women) came for interview; 621 (18.4 per cent.) were found to be suffering from some form of rheumatism, but most of these were not acutely affected at the time of the interview, the number seriously ill amounting to 1.35 per cent. of the 3,378 examined. Articular complaints accounted for 44.7 per cent. and muscular pains for 55.3 per cent. of those affected. The proportions of men and women affected were

13.5 and 21.7 per cent. respectively; 84.5 per cent. of the men and 79.1 per cent. of the women were over 40 years of age.

These results are compared with those of other investigators in Denmark, England, and Sweden.

REFERENCES

- de Blécourt, J. J., and Basart, A. H. M. (1953). "Report No. 20 of the Research Institute for Public Health Engineering T.N.O." The Hague, Netherlands.
 ——— (1954). *T. Soc. Geneesk.*, 32, 219.
 Bohman, F. (1948). *Acta med. scand.*, 132, 150.
 Dahlberg, G., and Grubb, I. (1951). *Acta genet. statist. med.*, 2, 42.
 Kalbak, K. (1953). *Ibid.*, 12, 306.
 Kellgren, J. H., Lawrence, J. S., and Aitken-Swan, J. (1953). *Annals of the Rheumatic Diseases*, 12, 5.

Recensement de la population à l'égard des maladies rhumatismales

RÉSUMÉ

On fit une enquête sur la fréquence de la maladie rhumatismale dans une partie déterminée de la Hollande du Nord. On s'adressa à 4.212 personnes âgées de plus de 14 ans et 3.378 (1.595 hommes et 1.783 femmes) se présentèrent à l'entrevue. On trouva que 621 personnes (18,4 pour cent) furent atteintes d'une des formes de rhumatisme, mais chez la plupart d'entre eux l'affection ne fut pas aiguë au moment de l'entrevue, la proportion des malades graves étant de 1,35 pour cent des 3.378 sujets examinés.

Parmi les affectés on trouva que 44,7 pour cent présentaient des manifestations articulaires et 55,3 pour cent des douleurs musculaires. Les hommes et les femmes furent affectés en proportion de 13,5 et de 21,7 pour cent respectivement; 84,5 pour cent des hommes et 79,1 pour cent des femmes furent âgés de plus de 40 ans.

On compare ces résultats avec ceux obtenus par d'autres chercheurs au Danemark, en Angleterre et en Suède.

Censo de la población respecto a enfermedades reumáticas

SUMARIO

Se investigó la incidencia de la enfermedad reumática en una parte determinada del Norte de Holanda. Se abordaron 4.212 personas de más de 14 años de edad y 3.378 (1.595 hombres y 1.783 mujeres) de ellas presentaron a la entrevista. En 621 personas (18,4 por ciento) encontré una de las formas de reumatismo, pero en la mayoría de ellas éste no fué agudo al tiempo de la entrevista, la proporción de los enfermos graves siendo el 1,35 por ciento de los 3.378 sujetos examinados.

De los afectados, el 44,7 por ciento tuvo manifestaciones articulares y el 55,3 por ciento dolores musculares. El 13,5 por ciento de los examinados fueron hombres afectados y el 21,7 por ciento mujeres; el 84,5 por ciento de los hombres y el 79,1 por ciento de las mujeres tuvieron más de 40 años de edad.

Se comparan estos resultados con los obtenidos por investigadores en Dinamarca, Inglaterra y Suecia.