AFFECTIVE DISORDER ARISING IN THE SENIUM

II. PHYSICAL DISABILITY AS AN AETIOLOGICAL FACTOR

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In previous papers (Roth and Morrissey, 1952; Roth, 1955) evidence for the importance of affective psychosis in old age was presented. It was shown further that in some half of those admitted after the age of 60 no attacks had occurred before this age, and that no new aetiological factor such as cerebral degeneration was associated with these cases of late onset (Kay, Roth and Hopkins, 1955). The problem is to elucidate why it is that defences against illness effective throughout most of these patients' lives prove inadequate in old age. Now in the study just referred to, a tendency for physical illness to be commoner in patients having their first attack after 60 was noted. A more detailed analysis of the incidence of physical illness in the two groups has therefore been carried out in order to investigate its possible aetiological role in old age affective disorder.

Method and Selection of Material

During a two-year period the case records of all admissions aged 60 and over were examined, and in addition about one-quarter were seen personally by one of us (D.W.K.K.). Cases with affective disorder were selected on the basis of a *manic or depressive symptom-complex* of at least a few weeks' duration. Those in which affective symptoms merely coloured a clear-cut organic psychosis were excluded. Out of a total number of 474 admissions, 231 satisfied these criteria. In order to determine if patients with onset late in life showed more or less physical illness than the others, the 231 cases were divided as in the previous study into two sub-groups as follows:

1. An early onset group whose first attack occurred before the sixtieth birthday.
2. A late onset group whose first attack or onset of illness occurred later.

Any incidence of physical illness in the group of early onset, in whom a tendency to affective disorder had already become manifest, is likely to be fortuitous or at the most suggest that somatic disease was one of the stress situations liable to bring about a recurrence of symptoms in predisposed individuals. A similar incidence in the group of late onset could likewise be coincidental or be due to the fact that physical illness plays some role in precipitation. A much higher incidence, if not due to age, would on the other hand suggest a closer aetiological relationship in the late onset group, which could be further investigated by a more detailed analysis of the differential incidence of the various kinds of illness and study of the individual cases.

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Sex Distribution. There were 28 males and 92 females in the early, and 49 males and 62 females in the late onset group (Table I).

TABLE I

Distribution of 231 Consecutive Cases with Affective Disorder Admitted During a Two-year Period, (i) *by Age of Onset,* (ii) *by Sex; the Mean Ages are Shown*

	Males		Females		Total
	Nos.	Mean Ages	Nos.	Mean Ages	
Group with:					
Early onset	28	68·5	92	65·4	120
Late onset	49	70·5	62	70·0	111
Totals	77	69·7	154	67·2	231

Age. The mean age of the early onset group was 66·1, of the late onset group 70·2 years.

Physical Illness. In assessing the frequency and nature of physical illness use was made of: (1) Data in social histories, which were available in about three-quarters of the cases. (2) Clinical examination. (3) Routine laboratory tests carried out on admission (full blood count, sedimentation index, blood bromide, blood urea, fasting blood sugar, Kahn, urine analysis). (4) Special investigations such as X-rays and electrocardiograms, which were carried out where indicated. (5) Consultant opinions: many patients were examined by a general physician to assess their fitness for E.C.T.; E.N.T. examination was carried out as a routine; and patients were referred to the ophthalmologist whenever there were visual symptoms. Follow-up studies carried out on all patients have usually settled the issue in cases of doubt.

Classification of findings. The authors have been responsible for the classification and interpretation of the data available. All cases of physical disorder have been included, except: varicose veins, herniae, osteoarthritis and joint deformities, congenital or long-standing non-progressive neurological defects, and chronic bronchitis and emphysema, unless these disabilities were sufficiently severe for special treatment to have been recommended. Terminal bronchopneumonia and peripheral arteriosclerosis were also excluded.

Where necessary, cases were included under more than one heading; these cases are also referred to separately under Multiple Disabilities.

RESULTS

The overall incidence of physical illness of all kinds was 63 per cent. among males and 51 per cent. among females; in the early onset group the corresponding figures were 50 per cent. and 42 per cent., and in the late onset group 71 per cent. and 65 per cent. Physical illness is thus commoner in the group of late onset ($P = < 0{\cdot}01$); but to evaluate the meaning of this, a more detailed analysis of the incidence of different types of illness in the two groups according to sex is necessary.

1. *Acute Physical Illness or Stress*

(1) *Acute physical stresses.* These events, which included acute fevers, operations and accidents, could be dated exactly, and occurred in a setting of normal or almost normal mental health. They were recorded whenever psychiatric breakdown took place contemporaneously, or during the immediate convalescent period. When physical recovery was incomplete (e.g. following prostatectomy), the case was also included under the next heading.

TABLE II

Frequency of Acute Physical Stress at Start of Psychiatric Disturbance in Two Groups with Affective Disorder of Early and Late Onset (numbers in brackets). The Differences Between the Groups and Between the Sexes are not Statistically Significant ($P = > 0 \cdot 05$)

	Males		Females	
	Illness	No illness	Illness	No illness
Early onset group ..	29 (8)	71 (20)	12 (11)	88 (81)
Late onset group ..	18 (9)	82 (40)	23 (14)	77 (48)

Table II shows the frequency of this kind of illness in males and females in the two groups. No significant differences were found between the groups, or between the sexes. Further examination shows, however, that there was, among males, a difference in the severity of the condition present in the two groups. Out of 9 cases in the late onset group, 7 had undergone operations which were, moreover, merely episodes in the course of chronic ill-health. On the other hand, of 8 patients in the other group, only 2 had undergone operations, the rest having suffered from acute febrile illnesses of relatively minor kind. In the case quoted below, a first attack of mania, probably with some initial clouding of consciousness, occurred immediately after operation and considerable blood loss; the subsequent history showed, however, that a chronic underlying disease was present.

Case 1.—A manager, aged 65, who had had a successful and healthy life, was admitted on 24 August, 1951, 8 days after a prostatectomy carried out as treatment for haematuria. Post-operatively, blood transfusion was required. The onset of the psychosis was very acute, with press of talk, bouts of shouting, persecutory delusions of a fleeting kind, and visual and auditory hallucinations.

On admission.—Albumin and pus in urine. Mentally, he was garrulous and expansive. Orientation correct, memory adequate. He recovered gradually from his attack of mania, and was discharged on 16 December, 1951.

Follow-up.—Died 31 July, 1953, after operation for removal of stone in bladder. Cause of death given as: Uraemia, Pyelonephritis, Vesical calculus. There had been no recurrence of mental symptoms.

The greater degree of physical stress necessary to precipitate breakdown in those who have remained well earlier in life is also shown by the greater prevalence among them of chronic illnesses.

2. *Chronic Illness*

(2) *Chronic ill-health.* Under this were classed such conditions as hypertensive or arteriosclerotic heart disease, urogenital disease, and cancer; their onset was usually gradual or insidious so that although in most cases they clearly preceded the psychiatric disturbance, the time relations between the two conditions could not always be exactly determined. Signs or symptoms of physical illness were always present on admission to hospital, and often persisted after discharge.

Eighty-nine cases (39 per cent. of the total) showed signs of physical ill-health on admission to hospital; the incidence being 32 per cent. in the early and 46 per cent. in the late onset group, a difference significant at the 5 per cent.

TABLE III

Frequency of Chronic Illness in Two Groups with Affective Disorder of Early and Late Onset (numbers in brackets). The Difference Between the Groups is Statistically Significant ($P = < 0 \cdot 05$)

	Males		Females	
	Illness	No illness	Illness	No illness
Early onset group ..	28 (8)	72 (20)	33 (30)	67 (62)
Late onset group ..	57 (28)	43 (21)	37 (23)	63 (39)

level. No significant differences were found among the females when all types of illness were included; among the males the late onset group showed a significantly greater incidence ($P = < \cdot 002$) (Table III).

The disabilities under discussion varied greatly in their nature and severity; by no means equal importance can be attached to them as aetiological factors. They may be considered under the headings: cardiac disorder; respiratory disease; urogenital disease; and other illnesses (Table IV).

TABLE IV

Varieties of Chronic Illness (excluding Sensory Defects) in Two Groups with Affective Disorder. Figures are Percentages, Showing Proportions of Affected Individuals in Each Group

	Cardio-vascular disease		Urogenital disease		Other conditions, e.g. lung, C.N.S. and Neoplastic diseases		Multiple disabilities		Total incidence	
	M	F	M	F	M	F	M	F	M	F
Early onset group	11	10	4	10	22	14	7	5	28	33
Late onset group	22	15	18	10	40	21	24	10	57	37

(1) *Cardiac disease or disorder* occurred in 32 cases, the main conditions being: hypertensive heart disease or cor pulmonale (19 cases), angina of effort (8 cases), auricular fibrillation (5 cases). The criteria for inclusion were, congestive failure, marked dyspnoea, angina, or auricular fibrillation with rapid pulse. Cases with hypertension alone or with clinical or radiological evidence of cardiac enlargement without other signs, were not included. Congestive failure was present in 18 and marked dyspnoea of exertion in 15. Electrocardiographic abnormalities indicating conduction defects were present in 11. Twelve patients were digitalized and several others treated for angina pectoris. E.C.T. was employed in 7 only; 14 others at least would probably have received E.C.T. but were regarded, after consultation with a physician, as physically unfit despite the availability of muscle relaxants. Cardiac disease was relatively predominant in the late onset group and, particularly among males, appeared to be a factor in the development of the affective disturbance as in the following case:

Case 2.—A professional man, aged 69, had always been moody and hypochondriacal but had never before broken down. He was admitted voluntarily on 28 September, 1951, with a four years' history of increasing depression, fits of weeping, and fears of dying. He had attended many doctors with a multitude of physical complaints. Haemorrhoidectomy aged 60; cholecystectomy and appendicectomy aged 68.

On admission.—B.P. 210/90. Marked peripheral arteriosclerosis. Chest emphysematous. Depressed and grossly hypochondriacal; florid bowel complaints; some breathlessness, and ill-defined chest symptoms. He improved after 5 E.C.T. and was discharged.

Follow-up.—In April, 1952, he had a coronary thrombosis. Recurrence of mental symptoms soon afterwards necessitated readmission on 3 September, 1952. E.C.G. showed evidence of cardiac infarction. He was still grossly hypochondriacal, but on this occasion cardiac symptomatology predominated. He developed congestive failure after another coronary thrombosis, and died on 12 December, 1952. Post-mortem refused.

In retrospect, it seems almost certain that some of his earlier symptoms had had their basis in coronary artery disease, and that they could have been alleviated by treatment.

(2) *Respiratory disease* was uncommon, other than as part of the syndrome of cardiorespiratory disorder; mild cases of chronic bronchitis and emphysema are not included. There were 12 cases in all. Chronic bronchitis and asthma with severe dyspnoea was found in four; one of these was a publican's wife, aged 72, who suffered from alcoholism and made a suicidal attempt after

the death of her husband. There were two patients with advanced emphysema, and four others with chronic respiratory disease; silicosis was present in an ex-miner who had previously, when 34, become depressed on being discharged from the pits with miners' nystagmus; many years later he suffered from shortness of breath, but did not again fall ill mentally until after prostatectomy. There were two cases with bronchiectasis, both having acute exacerbations; one case with a chronic discharging sinus from an empyema; and one with a symptomless diaphragmatic hernia which was, however, thought to contraindicate E.C.T. There were no significant differences between the two groups.

(3) *Urogenital disease*. This condition has an obviously different implication in the sexes. Among females, in whom the incidence was 10 per cent., it was as a rule a symptomless urinary infection, discovered only on routine examination, and apparently related to emaciation and neglect. In no case was evidence of more serious disease forthcoming on further investigation or follow-up. The groups were equally affected.

Among males, the incidence was 12 per cent. Prostatic disease was invariably present, and 6 of the 9 cases had undergone prostatectomy; another patient had a prostatic carcinoma from which he later died, although recovering from his depression. All except one fell into the late onset group; this was a man aged 73, whose previous attack at the age of 55 had followed cataract extraction; during his present illness, in addition to prostatic disease, he suffered from failing vision and hearing. Our results appear to show that surgery in prostatic disease may involve a considerably greater risk of initiating affective disorder late in life among males than is generally recognized.

(4) *Other illnesses*. These consisted of: 8 cases of bone or joint disease; 7 with Parkinsonian or other neurological abnormality; 3 with thyroid adenomata; 2 each with exfoliative dermatitis, diabetes mellitus, gastro-intestinal disease, chronic purulent antral infection, post-herpetic facial neuralgia, and painful haemorrhoids requiring operation; and one each of intermittent claudication, painful urethral caruncle, cystic mastitis, leukaemia, gingivitis, severe varicose ulcerations of legs, rectal prolapse requiring operation, and enormous bilateral inguinal herniae impeding movement. There were 8 cases of carcinoma (including rodent ulcers and skin epitheliomata) in addition to the case of prostatic cancer. Twenty-three females and 20 males, of whom 17 belonged to the early and 26 to the late onset group, are included under this heading.

The possibility that there is an association between organic cerebral degeneration and affective disorder arising late in life has been fully considered elsewhere, and rejected (Kay, Roth, Hopkins, 1955). Only 7 cases with signs of neurological disease were found in this material, and these were nearly evenly distributed between the two groups.

3. *Auditory and Visual Defects*

There were 22 cases of moderate or severe deafness and 15 with visual defects; in 7 both defects were present so that 40 individuals were affected. Cataracts accounted for the visual defects in 10 cases, and macular degeneration, diabetic retinitis, post-herpetic scarring and glaucoma in the remainder. Fourteen patients belonged to the early and 27 to the late onset group, the difference being significant ($P = < 0{\cdot}05$) (Table V).

Multiple Disabilities

Thirty-eight patients fell into two or more categories of illness; of these, 25 (23 per cent.) belonged to the late onset group and only 13 (11 per cent.) to the

TABLE V

Frequency of Sensory Defects Among Two Groups with Affective Disorder of Early and Late Onset. Figures are Percentages of the Total Numbers of Each Sex in Each Group (numbers given in brackets). Taking the Sexes Together the Incidence of Defects is Significantly Greater in the Late Onset Group (P=<0·05)

	Males		Females	
	Visual	Hearing	Visual	Hearing
Early onset	7 (2)	14 (4)	6 (5)	6 (5)
Late onset	14 (7)	10 (5)	16 (10)	15 (9)

other group. This fact again illustrates the greater amount of physical illness in the former. One member of this group, was a widow of 73 whose first attack of depression was associated with post-herpetic neuralgia, loss of vision in one eye, and hypertensive heart disease. A first attack occurred in a man of 86; there was a chronic irritating dermatitis, and failing vision, due to senile macular degeneration. In a male of 65 physical activity had been severely restricted for a few years, first by rheumatoid arthritis, and later owing to congestive heart failure.

RELATIONSHIP BETWEEN SEX AND PHYSICAL ILLNESS

Although the frequency of acute stress at the beginning of psychiatric disturbance is not significantly different in the two groups in either sex, yet it is clear that among males, those in the late onset group suffer from more serious conditions, which either lead to, or are episodes in the course of, chronic ill-health. Chronic illness of each kind shows a higher incidence among males of late than of early onset and when all types are combined the difference is statistically significant (P=<0·01). Among females similar differences exist without reaching the level of statistical significance. The association between physical illness and affective disorder commencing in late life is evidently more clearcut in the male sex.

Physical Illness and Age. Since the incidence of physical disability tends to increase with age, the possibility that the difference found might be due merely to the different mean ages of the two groups and not related to the psychiatric disorder has to be considered. However, when the material is divided into five-year age groups the differences in incidence of physical illness between the groups of late and early onset remain striking and consistent, in each of the groups under 70 and over 75 years; in the group 70–75 years the incidence in the early and late onset cases was identical. Moreover, when a correction for differences in age between the two groups is applied the expected total incidence of physical illness does not differ significantly from that actually observed in males or females and whether or not sensory defects are included (P=0·05 in each case). Further examination of the data shows that only in the case of visual impairment is there a distribution with age which differs significantly from the random (P=<0·05).

Mortality Rates and Physical Illness. A comparison of the mortality in the two groups revealed that after a mean follow-up period of 82 weeks, 14 patients in the late onset group had died, whereas there were only eight deaths in the other group. Although the difference is not statistically significant, a detailed analysis of the relevant records suggests that it reflects the difference in the incidence of physical illness in the two groups. Thus 16 of the 22 patients who died were suffering from physical illness on admission which was, in fact, the cause of death in nearly every case. In about one-third of these cases the psychiatric illness may itself have made a considerable contribution to death as a result of

exhaustion and inanition; such cases were evenly distributed between the groups. In the remainder the specific physical illness seemed clearly to have been a major factor in the determination of the outcome. It was of some interest in this connection that if the expected mortality rates were estimated on the basis of those of the general population of West Sussex (Registrar-General's Annual Report, 1951) the rates actually observed are found to be significantly higher in the late onset group when the two sexes are combined ($P = < 0{\cdot}05$), but the difference fails to reach significance for the early onset group. These data offer a further hint that there may be some factor other than age contributing towards mortality which exerts a stronger influence in the group of late onset.

Discussion

The data make it clear that both acute and chronic physical illness are common in affective disorder in old age. Whether or not such illness has a direct aetiological relationship to the affective disorder, its practical importance must be considered, for it is bound to influence the course and outcome of the psychiatric condition. It is particularly important to bear in mind the possibility of complicating physical disorder when evaluating affective illness in old age because the severity or florid nature of the psychiatric symptoms may obscure the presence of associated somatic disease. Even if the patient should complain of somatic symptoms there is some risk of these being attributed to a hypochondriacal self-scrutiny or delusions of a nihilistic kind. It was in fact not uncommon in this material for the physical illness to be overlooked, and in three cases the existence of serious physical disease was confirmed only at autopsy. In a number of other cases pre-occupation with vague chest pains attributed to hypochondriasis proved on follow-up to be associated with coronary artery occlusion and diffuse hypochondriasis with malignant or other chronic illness.

The figures for the incidence of all physical illness in the total material lend considerable force to such facts. Among males with affective disorder it was 57 per cent. and if sensory defects are reckoned, 62 per cent., while in females the corresponding figures were 43·5 per cent. and 51 per cent. No precise comparison with incidence in the general population is possible since there are no published figures based on detailed physical investigation. A survey of average monthly sickness assessed by interview in a sample of the adult population reported by the Registrar-General (Statistical Review of England and Wales for 1949) revealed a very high incidence of physical illness in individuals aged 65 and over, but over four-fifths of this was classified as minor or ill-defined disability which would have been either unrecorded in our notes or excluded by our criteria. Control studies of the incidence of physical illness in the general population from which our cases were drawn are evidently indicated.

But our method permits comparisons between the two direct groups and this suggests that in cases of late onset physical illness played a part in overpowering defences against breakdown that had proved effective during the greater part of life. To consider in more detail the different types of physical disability that have been defined, acute illness was equally common at the onset of the psychiatric disorder in each group. But among males of the late onset group acute illness was far more often of a grave character and prone to be followed by chronic disability than among the group of early onset. Among the females this was not so; yet examination of the case records suggests that here, too, there may have been more stress in the late onset group. Thus 3 patients out of 9 had recently lost their husbands, whereas no such bereavements

had occurred in the other group. We may tentatively conclude that in both sexes, but especially in males, a first attack in old age is associated with a greater amount of stress than is usually found among those who have fallen ill earlier in life.

Turning now to chronic physical illness and sensory defect we find that the group of late onset is much more often afflicted by all the categories defined. The frequency of this kind of illness is in fact extraordinarily high, well over half the male cases being affected. The men show a higher incidence of all categories of illness. Among women there is at first sight little difference between the early and late onset group, but in fact among females with affective disorder of late onset there are more with serious or multiple physical illnesses.

Not all the late onset group were first admissions, a proportion having had previous attacks (though after the age of 60). A detailed analysis of the case records was therefore carried out and this showed that in the great majority of cases of the late onset group the chronic illness identified on the present admission had been present before the very first breakdown. In the remaining cases some other physical illness had been clearly associated with the first attack.

We must now ask if it would be correct to conclude from these facts that the psychiatric disorder is merely symptomatic of the physical disease. But the term "symptomatic psychosis" usually signifies an intimate and specific association between the physical and psychiatric phenomena. It is unlikely that the association here observed is of this kind. Thus 29 per cent. of men and 35 per cent. of women fall ill in old age for the first time without physical illness, and if sensory defects are not reckoned the figures are 35 per cent. and 47 per cent. The psychiatric picture in the great majority of cases was that of a functional affective psychosis independent of any contribution by cerebral disease; nor was there any difference between the two groups in this respect (Kay, Roth and Hopkins, *loc cit.*). Moreover, the physical and psychiatric disorders by no means pursued a parallel course. Thus, in a number of cases the physical illness associated with breakdown continued, but the patient recovered from the psychiatric disorder or improved sufficiently to be discharged; the pattern of outcome of both late and early onset groups, with their high discharge and low mortality rates despite the frequency of physical illness, is in fact that of a benign psychiatric disorder. In other cases the illness improved, as for example, after prostatectomy with subsequent chronic urinary infection, but the patients did not exhibit a corresponding psychiatric recovery.

Hence, we cannot attribute to physical illness any specific aetiological role in relation to affective disorder, whether appearing in old age for the first time, or occurring afresh in senescence. But the relatively high incidence of physical illness in those who have avoided affective illness until old age suggests that in it we have identified *one* aetiological factor of importance. Independent evidence in relation to the possible role of physical illness must obviously be sought. The incidence of affective breakdown among old people admitted to general hospitals must be investigated to ascertain whether this is greater than the normal expectation. And the incidence of physical illness in a sample of old people living outside hospital needs to be compared with that in our affective cases.

Some independent evidence already exists to support the aetiological role of physical illness as suggested by our findings. Dayton (1940) as a result of his large scale statistical studies of admissions to mental hospitals in the U.S.A., has suggested that the incidence of psychoses at all ages is related to that of physical illness and disability in the general population, and that it increases with age in

association with the degenerative changes of later life. He was referring mainly to the senile and arteriosclerotic psychoses. Our findings suggest that there may also be some relationship between physical disability and affective disorder of late onset.

Dayton further suggested that the higher incidence of psychiatric disorder which he found among males of all ages (when account was taken of the sex ratios in the population at risk) was related to their greater physical morbidity and mortality risks, particularly late in life. However, Sheldon (1948), in his survey of a random sample of elderly people living in Wolverhampton, found that among men physical disability was not in fact commoner than among women, and that more robust health was the rule. This interesting observation receives some confirmation in the report on general morbidity in England and Wales (Registrar-General's Statistical Review, 1953), which shows that sickness rates as estimated in a random sample of the general population, are in fact lower for males than for females in all age groups, including the groups 75 and over. Now physical illness is significantly more frequent among males than the females in our material. If, therefore, the sex difference described in the Registrar-General's Statistical Review is a real one the relative incidence in the sexes observed in our affective cases represents a reversal of the trend in the normal population. And this could be interpreted as providing some independent confirmation that the association between physical and psychiatric disorder we have found is unlikely to be fortuitous, but may have aetiological significance, particularly in males. The implication would be that there are differences in the response to physical illness in old age between males and females, there being in the former a greater hazard of complication with affective disorder. Such an interpretation would offer one possible explanation for the significantly larger proportion of males in the group of late onset ($P = < 0 \cdot 02$). It would seem that physical illness in males, though less common, is more dangerous; they are more likely to die, and also appear to be more likely to suffer from affective illness.

Why this should be so is not clear. A common factor in most of the chronic and miscellaneous conditions described appears to be a tendency to restrict free motor activity; others are irritating and painful; and a few, by their toxic effects, probably lower resistance and general health. It may be that restriction of normal activity is less well tolerated by males whether from innate biological, or cultural reasons, and is more likely to lead to an affective psychosis, which might itself be a contributory cause of their greater mortality. Such a formulation is not necessarily inconsistent with the theory of specific predisposition to affective disorder. The manifestation rate of one in three or four of the gene responsible for this type of illness leaves considerable room for a causal contribution by exogenous factors such as physical illness. But in fact the issue as to whether specific or multifactorial inheritance contributes to the causation of affective disorder is at present undecided (Slater, 1953). These questions are evidently matters for further study.

It might be advisable meanwhile to pay more attention to the risk of affective breakdown in old age as a complication of operations and physical illnesses. Prompt treatment or amelioration of physical disorders in old age might conceivably prove to be of some prophylactic value against psychiatric breakdown. And in all cases of depressive or manic illness in the old a most detailed and rigorous physical investigation must be carried out in an attempt to identify physical illness that may be contributing to causation, particularly in males who before senescence had been immune to mental disorder.

SUMMARY

(1) The aetiological role of physical disability in affective disorder of old age has been studied in 231 consecutive admissions aged 60 and over. The incidence of acute and chronic illness and serious sensory defect was compared in those whose first attack had occurred before 60 (120 cases) and those with a first breakdown after 60 (111 cases).

(2) Physical illness and/or sensory disability was present in 62 per cent. of the men and 51 per cent. of the women in the whole material.

(3) In about one-sixth of all cases acute physical stress (illness, operation, or trauma) immediately preceded the onset of affective breakdown. But in the group with onset after 60, the physical condition was more often an exacerbation of, or consisted in operative treatment for, underlying chronic disease, from which recovery was incomplete.

(4) Chronic physical illness was found in 40 per cent. Nearly every kind of illness, including sensory defect, was commoner in the group with late onset.

(5) These results suggest that more severe stress is necessary to cause affective breakdown in those individuals who have been resistant during most of life. In general, exogenous may be more important than constitutional factors in this group, whereas broadly speaking the reverse may be true of those with earlier breakdown.

(6) The difference between groups of late and early onset is more marked and consistent for males. Physical illness is probably more important in the causation of affective psychosis commencing in old age in men; this may contribute to the higher proportion of males in the group of late onset.

(7) Thorough physical investigation is indicated in all cases of affective disorder commencing in old age particularly in men. Serious organic disease is often present and underlies hypochondriacal complaints.

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