

THE PERSONAL CHARACTERISTICS OF PEOPLE WHO REQUIRE LATE CALLS*

ALBERT JACOB, M.D.

Dundee

The work described in the previous article (Jacob, 1963) showed that most late calls do not differ in severity from the routine work of the practice. The obvious conclusion was, that if late calls are different in any way from routine services, it must be in the type of person who requires them. The following investigation was undertaken to test this hypothesis.

Before beginning it was necessary to decide what personal characteristics might be involved in causing a person to decide to make a late call.

These characteristics had to be selected by rule of thumb. The following were selected as the most likely:

1. Age
2. Sex
3. Intelligence
4. Personality
5. A quality which may be described as general competence
6. Health history
7. The patient's attitude to the disease

The late callers investigated were those who had been attended during the first part of the field work of this analysis. A control group was also necessary. The people who were selected to be the control group were chosen at a routine visit. They had to satisfy one requirement, and that was that they had not needed a late call in the three year period before the beginning of the investigation.

When children require late calls the person who makes the decision to send is the parent or guardian. The investigation was referred to the adult concerned in such cases. This adult was called the Responsible Adult, a term which will be abbreviated to R.A. in the subsequent text.

*Based on material in a thesis submitted to the University of St. Andrews for the degree of M.D.

Age of patient

The age of the patient at each of the 558 late calls was placed in one of the following groups; children of seven years or less, children of eight to fifteen years, and adults. Although some patients were included more than once this is justifiable since age as an independent factor in disease remains unaltered for practical purposes after each episode of illness. The figures are given in the first row of table I. These figures were compared with the equivalent figures taken from a random sample (one in seven) of the practice, given in the second row of table I. This table shows that children under seven are more likely to occasion late calls than older children or adults.

TABLE I

AGE OF PATIENT AT EACH LATE CALL AND AGE OF CONTROL SAMPLE OF PRACTICE.
(PERCENTAGES ARE GIVEN IN BRACKETS)

<i>Age groups</i>	<i>Children under 7</i>	<i>Children 8-15</i>	<i>Adults</i>	<i>Total</i>
No. of late calls to patients in each age group	213 (38.2%)	38 (6.8%)	307 (55%)	558 (100%)
Number of controls in each age group	58 (9.4%)	81 (13.1%)	475 (77.4%)	614 (100%)
Total	271	119	782	1172

$\chi^2=93.4$ degrees of freedom=2 $P<0.001$.

Age of responsible adult

The age of the R.A.'s. and R.A. controls were placed in three groups; fifteen to forty years, forty-one to sixty years, and over sixty years.

These figures are compared in table II which shows that the fifteen to forty age group is more likely to require late calls than the other groups.

To understand the relationship between these two conclusions it is necessary to study the numbers of children for whom the R.A.'s and R.A. controls were responsible. This information was obtained, but the detailed statistical treatment of the figures makes lengthy reading. In consequence I shall give my findings in summary form here. The late call R.A.'s. are responsible for a larger number of children of both age groups than the control R.A.'s. In addition the number of children in the under seven age group for whom the late

TABLE II

AGE GROUP OF INDIVIDUAL ADULTS RESPONSIBLE FOR LATE CALLS COMPARED WITH AGE OF CONTROL SERIES. (PERCENTAGES ARE GIVEN IN BRACKETS)

<i>Age groups</i>	15-40	41-60	60+	<i>Total</i>
Number of R.A.'s	192 (54.7%)	95 (27%)	64 (18.3%)	351
Controls	112 (37.4%)	106 (36.1%)	79 (26.4%)	299
Total	304	203	143	650

$\chi^2=19.6$ degrees of freedom=2 $P < 0.001$.

call adults are responsible is disproportionately high. The 15-40 age group of both late call and control R.A.'s. is responsible for a larger proportion of the children under seven than the other two adult groups. The disproportion in responsibility towards younger children between the late call R.A.'s. and control R.A.'s. is because the late callers have larger families of young children. The difference between the number of older children in the late call and control families is not significant.

Table III shows how the late calls are distributed among the different age groups.

TABLE III

DISTRIBUTION OF LATE CALLS BETWEEN ADULTS AND CHILDREN COMPARED WITH THE AGE GROUPS OF ADULTS RESPONSIBLE FOR CALLS. (PERCENTAGES ARE GIVEN IN BRACKETS)

<i>Age group of responsible adult</i>	<i>Age group of patient</i>			<i>Total</i>
	<i>Children under 7</i>	<i>Children 8-15</i>	<i>Adults (personal late calls)</i>	
15-40	202 (95%)	22 (57%)	111 (35.8%)	335
41-60	11 (5%)	15 (40.5%)	103 (33.6%)	129
60+	—	1 (2.5%)	93 (30.3%)	94
Total	213 (100%)	38 (100%)	307 (100%)	558

$\chi^2=29$ degrees of freedom=2 $P < 0.001$.

Young adults are responsible for most of the calls to children.

The figures suggest that the younger adult age groups receive more personal services, but further analysis shows that the number of personal adult late calls are in fact proportional to the numbers at risk in each adult age group.

Although there is no significant difference between the number of personal calls required by the younger and older late call R.A.'s, a disproportionate number of non-urgent late calls are to young children or young adults. Most of the emergencies are to adults in the older two age groups while the over 60's require a disproportionate number. The personal late calls to young adults are mainly non-urgent. This difference in urgency is the main distinction between the late calls required by young and old people.

The late calls to the 15-40 age group were studied with reference to the systematic diagnosis and it was found that there was a disproportionate number of services for respiratory and mental conditions.

Sex of responsible adult

A number of analyses of figures taken from general practice records have shown that females cause proportionately more work than males. This finding is confirmed in the present investigation. The excess of late calls to females is similar to the excess of routine items to females. Since this result was expected it need not be discussed in greater detail here.

Females were also responsible for most of the late calls to children, again a result to be expected.

Intelligence of responsible adults

It was not possible to apply an intelligence test to all the people involved because of the difficulty in arranging the necessary control conditions and also because of the possibility of an adverse affect on the doctor-patient relationship. An intelligence index based on age and occupation scales was used instead (Belson, 1955). This index divides the population into decile groups. It cannot be used for the prediction of an individual intelligence but is good enough for survey purposes.

The numbers of late call and control R.A.'s. in each decile group is shown in table IV. These figures show that there is a disproportionate number of late call R.A.'s. in the middle intelligence groups, and a disproportionate number of control R.A.'s. in the lowest intelligence groups a finding which is confirmed when the equivalent

figures for the age group 15-40 are analysed. (Table V).

TABLE IV
NUMBER OF ADULTS RESPONSIBLE FOR LATE CALLS AND R.A. CONTROLS IN EACH DECILE GROUP

Number of	Decile group										Total
	1	2	3	4	5	6	7	8	9	10	
Responsible adults	12	8	16	55	47	37	46	15	33	22	291
Controls	12	9	16	19	42	36	34	31	56	44	299
Total	24	17	32	74	89	73	80	46	89	66	590

$\chi^2=62.64$ degrees of freedom=9 $P<0.001$.

TABLE V
COMPARISON BETWEEN DECILE GROUPS OF LATE CALLS AND CONTROL R.A.'S IN THE 15-40 AGE GROUP

Decile group	1	2	3	4	5	6	7	Total
No. of late call R.A.'s in 15-40 age group	7	8	12	52	41	24	34	178
No. of control R.A.'s. in 15-40 age group	10	8	13	14	36	19	12	112
Total	17	16	25	66	77	43	46	290

$\chi^2=18.42$ degrees of freedom=6 $0.001 < P < 0.01$.

The latter table also shows that there are proportionately fewer late call R.A.'s. in the most intelligent groups.

The figures in table VI show that the bulk of non-urgent late calls and urgencies are to people in the intermediate intelligence groups but a higher proportion of the emergencies are to people in the lowest intelligence groups.

Personality of responsible adults

The concepts of personality adopted in this part of the study were Eysenk's (1959a). Two dimensions of personality were estimated: neuroticism or liability to break down under stress; and extraversion

TABLE VI
NUMBER OF EACH TYPE OF LATE CALLS TO ADULTS IN EACH DECILE GROUP

<i>Type of late call</i>	<i>Decile group</i>								<i>Total</i>
	1, 2, 3	4	5	6	7	8	9	10	
Non-urgent	39	80	63	39	64	19	23	19	346
Urgency	5	12	6	5	9	1	4	4	46
Emergency	4	10	10	14	14	2	13	13	80
Total	48	102	79	58	87	22	40	36	472

$\chi^2=41.4$ degrees of freedom=14 <P <0.001.

or sociability. The estimation of neuroticism was made from the practice records. Neuroticism was diagnosed if a patient had a history of neurosis. The diagnosis of introversion was made from the following three traits: a tendency to complain about numerous trivial complaints, preoccupation with self, and tendency to prolong absence from work. The diagnosis of extraversion was made from another three traits: a tendency to present with single well defined complaints, unwillingness to leave work or a rapid return to work following absence, and a tendency to direct treatment. As a check the personality of the R.A.'s. was measured by the short scale of the Maudsley Personality Inventory (Eysenk, 1959b). (Table VII).

TABLE VII
HISTORY OF NEUROSIS IN R.A.'S. AND R.A. CONTROLS

<i>History of neurosis</i>	<i>Yes</i>	<i>No</i>	<i>Total</i>
R.A. late callers	50	301	351
R.A. controls	6	293	299
Total	56	594	650

$\chi^2=19.35$ degrees of freedom=1 P <0.001.

Table VII shows that there is a significantly larger number of people with a history of neurosis in the late call group than in the control group. This finding was confirmed by the neuroticism ratings from the Maudsley Personality Inventory. (Table VIII).

TABLE VIII
 "N" SCORE OF ADULTS RESPONSIBLE FOR LATE CALLS AND R.A. CONTROLS

"N" score	1	2	3	4	5	6	7	8	9	10	11	12	Total
Adults responsible for late calls	8	14	7	48	4	44	4	45	6	46	4	61	291
Controls	22	30	5	36	4	45	12	40	7	46	5	47	299
Total	30	44	12	84	8	89	16	85	13	92	9	108	590

$\chi^2=20.59$ degrees of freedom=11 $0.02 < P < 0.05$.

Table IX shows that a disproportionate number of non-urgent late calls were to people who had a history of neurosis, but the Maudsley scale failed to confirm this. On the whole, the evidence indicates that neuroticism is likely to be a factor in the production of late calls in general and non-urgent late calls in particular.

TABLE IX
 NUMBER OF EACH TYPE OF LATE CALLS TO INDIVIDUALS WITH AND WITHOUT A HISTORY OF NEUROSIS

Type of late call	History of neurosis		
	Yes	No	Total
Emergencies	13	116	129
Urgencies	6	42	48
Non-urgent	83	298	381
Total	102	456	558

$\chi^2=38.37$ degrees of freedom=2 $P < 0.001$.

The investigation into the introversion-extraversion dimension produced indefinite results, although the late call group tended to introversion. Since the figures are not convincing they need not be produced in detail here.

General competence of responsible adults

Competence means ability to adapt oneself to one's environment. This adaptability may be achieved in a material and intellectual sense. For present purposes material competence was measured from the housekeeping standards of the person under investigation. High housekeeping standards indicate an ability to cope with the material problems of existence, while low standards indicate deficiency of

this quality. Five categories of housekeeping standard were selected: very good, good, moderate, poor, very poor. Classification into these categories was made from a system of points awarded for cleanliness, tidiness, tendency to put off chores, and upkeep of the house. The details of the scale are given elsewhere (Jacob, 1962). The figures in table X show that 79 per cent of late call adults have satisfactory housekeeping standards and 21 per cent, a significant minority, do not. This minority did not differ from the other late call R.A.'s. in either age or intelligence.

Intellectual competence means the ability to cope with the emotional problems produced by the environment. In so far as neuroticism is a measure of failure of intellectual competence, the late call group has already been shown to be deficient in this quality.

Additional information about intellectual competence can be obtained from the ability of the parent to look after the child. Childhood stress disorders may be taken as evidence of parental failure. Parents who press for admission to hospital when their children have minor illness also show a measure of incompetence.

The stress disorders selected for investigation were bronchial asthma, enuresis, and school phobia. In all there were 30 cases of childhood stress disorder in the late call group as against 5 in the control groups. These figures were added to the numbers who pressed for unnecessary admission to hospital and the combined totals are given in table XI which shows that the late call R.A.'s. are deficient in intellectual competence.

TABLE X
HOUSEKEEPING STANDARD OF LATE CALL R.A.'S. AND CONTROLS

<i>Housekeeping standard</i>	1	2	3	4	5	<i>Total</i>
Number of late call R.A.'s.	147	85	31	24	4	291
Number of control R.A.'s.	200	72	24	2	1	299
Total	347	157	55	26	5	590

$\chi^2=30.1$ degrees of freedom=4 $P<0.001$.

Health history of responsible adults

Late call and control R.A.'s. were classified according to the number of items of service they require in a year. This classification provides an indication of the state of the individuals' health. There were three sub-groups: those who require single items (less than

three), those who require several (three–six), and those who require regular services (more than six).

The figures in table XII show that late call R'A's. require more medical attention than control R.A.s.

TABLE XI

NUMBER OF PARENTS IN LATE CALL AND CONTROL GROUPS WHO REQUESTED UN-NECESSARY ADMISSION OR HAD CHILDREN WITH A STRESS DISORDER

	<i>No. of parents requesting admission or with children who have a stress disorder</i>	<i>No. of parents with normal children</i>	<i>Total</i>
Late call group	55	143	198
Control group	5	65	70
Total	60	208	268

$\chi^2=12.12$ degrees of freedom=1 $P<0.001$.

TABLE XII

DIFFERENCES BETWEEN ADULTS RESPONSIBLE FOR LATE CALLS AND CONTROLS IN ROUTINE REQUIREMENTS

<i>Routine requirements</i>	<i>Single</i>	<i>Several</i>	<i>Regular</i>	<i>Total</i>
Adults responsible for late calls	176	121	54	351
Controls	259	25	15	299
Total	435	146	69	650

$\chi^2=97$ degrees of freedom=2 $P\leq 0.001$.

Attitude of late call R.A's. to the disease

This part of the analysis belongs chronologically to the first part of the investigation.

After the advice had been given at each late call the responsible adult was asked to explain why he had requested the service. With three exceptions the reason for a request for a visit to an emergency or urgency was assumed to be "severity of symptoms". This reason was also given once at a non-urgent late call.

At 166 non-urgent late calls the R.A. had made a provisional diagnosis before sending and this diagnosis had caused sufficient alarm to occasion a request for urgent help. Ninety four of such

diagnoses arose from fear of major disease. Pneumonia and acute appendicitis were the two most frequently mentioned. In 72 cases the disease mentioned was minor, e.g. measles or mumps.

One hundred and forty six calls were requested to suit the domestic conveniences of the R.A. concerned. In those cases there was no question of alarm. Sixty eight late calls were made because a third person had advised the R.A. that rapid attention was necessary. Alarm was the explanation most frequently given by young people while the advice of a third party was found to be a reason given more frequently by the older age groups. Convenience, as a reason for a request for a late call, was given earlier in the day while alarm following a provisional diagnosis occurred more frequently as the day wore on.

Differences within the group of the late call R.A.'s.

The number of late calls required by individual R.A.'s. in the year varied from one to eight.

Only 21 people required more than three services in the year but this small group had almost a fifth of the total number of late calls. It was found that people who require frequent late call services do so for non-urgent conditions (table XIII). This small group of people were found to differ from the other late call R.A.'s. in two respects: they had a record of more frequent attention in general, and they had lower housekeeping standards.

TABLE XIII

RELATIONSHIP BETWEEN THE NUMBER OF LATE CALL SERVICES TO LATE CALL R.A.'S.
AND THE NUMBER OF EACH TYPE OF SERVICE

<i>No. of calls</i>	1, 2,	3, 4,	5, 6, 7, 8	<i>Total</i>
Emergency	97	25	7	129
Urgency	36	9	3	48
Non-urgent	241	78	62	381
Total	374	112	72	558

$\chi^2=13.03$ degrees of freedom=4 0.01 <P <0.02.

Discussion

This investigation showed that the late call group have well defined personal characteristics. They are young and of intermediate intelligence. They have relatively large families of young children and many of their calls are to their children, but they require a

proportionate share of the personal late calls, As a group they have neurotic tendencies.

Most of the late calls to these people were for non-urgent conditions. The emergencies were to older people who approximate to the control group in their characteristics. It is also possible to divide the late call R.A's. into two sub-groups, a majority who have good housekeeping standards and who are responsible for sporadic calls, and a minority who have bad housekeeping standards and are responsible for repeated late calls.

A poor housekeeping standard is indicative of an inability to cope with the material environment. The late call group also show evidence of parental insufficiency and taken as a whole they require more medical attention than the control group.

These characteristics help to explain why there are so many non-urgent late calls. Limited intelligence combined with neuroticism and inability to cope with stressful situations is bound to occasion alarm in the presence of minor illness. It requires some intelligence to make a provisional diagnosis but higher intelligence is necessary to estimate the genuine severity of symptoms; conversely people of low intelligence are unlikely to be alive to the possibility of severe illness and do not feel the need for urgent treatment.

The number of calls made to suit domestic convenience is again evidence of limited reasoning on the part of the person responsible.

This late call analysis has a wider application. It has been established that the work load varies from practice to practice, but no satisfactory explanation has been given for this phenomenon. (Hadfield, 1953; Logan, 1953; Taylor, 1955; Logan and Cushion, 1958). The results of this investigation suggest a possible explanation. They show that the medical needs of two groups differ in relation to the personal characteristics of the groups and not solely in relation to their diseases. Although the investigation was concerned with late calls the evidence indicates that people in the late call group require frequent general medical attention. The variation observed in work load studies may also be indicative of similar differences in the personal characteristics of the types of people who predominate in the practices studied. This means that medical services which have been planned on a basis of morbidity statistics will not supply all the needs of the people for whom they are intended. Before workers become too involved in operational research programmes, those who plan for general practice would do well to revise their attitude

to medicine in its widest sense. The divisions of individual or clinical medicine and mass or social medicine are no longer sufficient. A third division is required, community medicine, the essence of which will be the investigation of the personal characteristics of the groups which constitute the whole community and the use of the knowledge so obtained to determine their real medical needs. The ultimate aim of such work would ensure that the community has a uniform standard of medical care.

Summary

An enquiry was made into the personal characteristics of people responsible for late calls.

It was found that there was a relationship between those characteristics and the fact that the subjects had requested late call services.

Because of this relationship it has been suggested that planning for general practice in the Health Service based on morbidity statistics is inadequate and the complementary information required is to be found from a study of the population.

Acknowledgements

To Dr W. A. Wilson, late of the Department of Public Health and Social Medicine for advice on the statistical evaluation of the figures, to Prof. I. R. C. Batchelor of the Department of Psychiatry, and Mr A. J. M. Flook of the Department of Psychology for advice on the selection of psychological tests used in the investigation. All are members of the staff of St Andrews University.

REFERENCES

- Belson, W. A. (1955). *Brit. J. Psychol.*, **46**, 44.
Eysenk, H. J. (1959a). *The Structure of Human Personality*. London: Methuen.
Eysenk, H. J. (1959b). *Manual of the Maudsley Personality Inventory*.
Hadfield, S. J. (1953). *Brit. med. J.*, **2**, 683.
Jacob, A. (1962). *M.D. Thesis*, St Andrews University.
Jacob, A. (1963). *J. Coll. gen. Practit.* **6**, 272.
Logan, W. P. D. (1953). *Analysis of General Practice Records*. H.M.S.O. London.
Logan, W. P. D. and Cushion, A. A. (1958). *Morbidity Statistics from General Practice*. H.M.S.O. London.
Taylor, S. (1955). *Good General Practice*. Oxford University Press.