

DEMAND/ATTENDANCE PATTERNS IN AN “ARTIFICIAL PRACTICE”

ALBERT JACOB, M.D.

Dundee

PATIENTS attend their doctors in different ways. These attendance patterns have quantitative and qualitative aspects (Titmuss, 1965). The features of the individual attendance pattern depends, in the final analysis, on the patient (Scott, 1965). Because nothing is known about the details of these attendance patterns, their characteristics received special attention in the analysis of the work of the artificial practice.* This article describes how the D.F.P. (demand forming population) of the artificial practice is divided into subgroups using the demand/attendance patterns as a basis of classification.

The demand/attendance patterns owe their characteristics to quantitative properties which constitute the ‘demand’ fraction, and qualitative properties which constitute the ‘attendance’ fraction. It is necessary to point out, before continuing, that the demand fraction depends on the number of *episodes* of illness which an individual experiences, and upon the number of *items* required before each episode is brought to a conclusion. Throughout this work an episode of illness is defined as the period of time which begins when the patient (or responsible adult) first seeks attention, and ends when he is discharged from care.

This definition implies that after discharge the individual requests no further attention for that particular episode. In a situation where further care is requested, the additional items are added to the total of the original episode.

It may be argued that follow-up is not strictly part of the demand pattern but it should be remembered that a patient can influence a follow-up pattern in a number of ways, and so, strict adherence to the pattern imposed by the practitioner indicates either identity with the patient’s wishes or a submissive patient.

Although the classification is arbitrary it serves to divide the

*For definition and construction of an artificial practice see Jacob, A. J. *Coll. gen. Practit.* (1966). 11, 41.

D.F.P. of the artificial practice into distinctive subgroups.

The primary demand/attendance pattern

There are two ways in which primary demand is formed. One is through a need for personal attention and the other is through a need for attention for a dependant child or children. People who had no dependant children were placed in one category which has been called the *personal* category and the others have been placed in the *family* category. These two categories form the qualitative component of the primary pattern. A quantitative classification of the D.F.P. had already been made (Jacob, 1966). It had been divided into two groups; a perimean group composed of people who required less than ten items of service in the observation year and a supra-mean group composed of people who required ten or more items in the observation year. The perimean group was divided into three further categories; low (1-3 items), moderate (4-6 items) and high (7-9 items). Because of the multiplicity of secondary attendance patterns it was unwise to divide the supra-mean group further.

This means that four primary demand categories are used. These categories form the quantitative component of the primary pattern.

Table I shows how the D.F.P. is distributed among the primary demand/attendance patterns.

TABLE I
THE PRIMARY DEMAND/ATTENDANCE PATTERNS

Demand pattern	Attendance pattern		
		Personal	Family
Perimean	Low	50	7
	Moderate	46	11
	High	59	26
Supramean		161	119
Total		316	163

Secondary attendance patterns in the personal group

There was no necessity to modify the primary demand pattern of this group. The secondary attendance pattern depends partly on the number of episodes and partly on the number of items in each episode. The following conventions were adopted to allow further classification of the attendance pattern. Those who had less than three episodes of illness in the observation year were said to present a *single episode pattern* and those who had three or more episodes a *multiple episode pattern*.

Episodes with less than four items were called *single item* episodes* and those with four or more items *multiple item episodes*.

This episode/item classification allows only six attendance patterns. These are as follows:

1. A single episode/single item pattern of one or two episodes with less than four items.
2. A single episode/multiple item pattern of one or two episodes with four or more items each.
3. A single episode/mixed item pattern of two episodes, one with less than four and one with four or more items.
4. A multiple episode/single item pattern of not less than three episodes none of which have more than three items.
5. A multiple episode/multiple item pattern of not less than three episodes all with more than three items.
6. A multiple episode/mixed item pattern of not less than three episodes some with less than four items and some with four or more items.

When the necessary attendance patterns are combined with the primary demand pattern to give the full classification of the personal group there are a limited number of possibilities.

The low perimean group can contain only the first and fourth patterns (designated A and B respectively, i.e. low perimean A, low perimean B). The moderate perimean group contains the second, third and fourth patterns. For convenience the second and third are grouped together as A while the fourth is B.

The perimean high group allows three patterns; 2 and 3 which are grouped together as A, and 4 and 6 which are B and C respectively.

The suprimean group allows four attendance patterns. A and B are identical with A and B of the perimean high group while C corresponds to pattern 5 and D to 6.

The complete classification is shown schematically in figure 1.

The distribution of the attendance patterns of the personal group is shown in table II.

Secondary demand/attendance patterns of the family group

The demand in this group has two components; a personal component and a vicarious component which consists of that part of the demand concerned with the needs of dependant children. Table III shows that only 3 per cent of the family group have a demand pattern which is wholly vicarious and 15 per cent a pattern which is wholly personal. This means that both the personal element and the vicarious element must be considered in the further classification of this group.

*The definition allows one item each for initial visit, convalescence and discharge.

On the other hand, it is important to remember that low or moderate demand spread over a number of children will give an adult a high or very high primary demand pattern when added to his personal demand.

It was apparent that if the demand for the dependant children is ignored the family adults' demand patterns could be classified in the same way as the patterns of the personal group. The next step was to determine whether the dependant demand pattern shows the same variations as the personal demand pattern.

The families with vicarious demand alone were excluded and the remainder were divided into two groups using perimean and suprimean *personal* demand as the criterion. At this stage it is necessary to determine whether the family commitments of these two groups differ. Table IV shows that they do not differ to a significant degree.

TABLE III
PERSONAL AND VICARIOUS DEMAND IN THE FAMILY GROUP

<i>Primary demand pattern</i>	<i>Perimean</i>			<i>Suprimean</i>	<i>Total</i>
	<i>Low</i>	<i>Moderate</i>	<i>High</i>		
Number with personal demand only	2	2	6	14	24
Number with vicarious demand only	2	—	2	1	5
Number with both vicarious and personal demand	3	9	18	104	134

TABLE IV
COMPARISON OF FAMILY SIZE OF PERIMEAN AND SUPRIMEAN GROUPS

<i>No. of children in family</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4-6</i>	<i>Total</i>
No. of perimean families	32	22	16	9	79
No. of suprimean families	31	21	14	13	79
Total	63	43	30	22	158

$X^2=0.9$ degrees of freedom=3 $P=0.8$ (not significant)

In addition table V shows that the attendance rates of the dependant children of both groups are similar.

Thus it must be accepted that adult personal demand is the major factor in determining variation within the family group.

Table V also shows that the majority of the attendance rates of the

dependant children are equivalent to the attendance rates of perimean adults.

TABLE V
COMPARISON OF ATTENDANCE RATES OF DEPENDANT CHILDREN

Rate/child in family	No. of items					Total
	0	1-3	4-6	7-9	10 and over	
Number of perimean families	14	22	18	11	14	79
Number of suprimean families	13	21	14	11	20	79

$X^2=1.566$ degrees of freedom=4 P=between 0.9 and 0.8 (not significant)

It follows that the further classification of the family group must be made from a consideration of the personal demand in that group, but must avoid error from classifying low demand patients as high demand patients through summation of family commitments. The following classification seems to be the most satisfactory.

The D.F.P. of the family group were divided into three categories; a group whose *personal* demand is more than nine items of service, a group whose *personal* demand is 1-9 items, and a group whose pattern is wholly vicarious.

Since the first group are suprimean adults their demand pattern cannot be further modified and they are designated the *unmodified family group*. In the second group the average number of items for the whole family was calculated and the patients were assigned to one of four subgroups; the first with a family average of 1-3; the second with a family average of 4-6; the third with a family average of 7-9; and the fourth with a family average of ten or more items. These subgroups were designated α β γ δ respectively and are equivalent to the primary demand groups. Because of this modification the second family group has been called the *modified family group*.

It is obvious that a person in this group with a high primary demand, e.g. suprimean or perimean high may have a low secondary demand, e.g. α or β . This phenomenon is called downgrading and the extent of downgrading is shown in table VI.

The vicarious group were not modified further.

The six attendance patterns for the personal group serve the family group equally well. Since the unmodified family group is a suprimean group the secondary attendance patterns are identical with the secondary attendance patterns of the personal suprimean group and

TABLE VI
DOWNGRADING IN THE MODIFIED FAMILY GROUP

		<i>Primary demand pattern</i>			
		<i>Perimean</i>			<i>Supramean</i>
		<i>Low</i>	<i>Moderate</i>	<i>High</i>	
Secondary demand pattern	α	5	11	12	4
	β	—	—	12	21
	γ	—	—	—	11
	δ	—	—	—	13

Twelve people were placed in a secondary demand category which was higher than their *personal* demand category but only two were displaced by two categories.

TABLE VII
SECONDARY ATTENDANCE PATTERNS OF UNMODIFIED FAMILY GROUP

<i>Secondary attendance pattern</i>	<i>No. of patients</i>
A. — single episode, multiple or mixed item	4
B. — multiple episode, single item	5
C. — multiple episode, multiple item	—
D. — multiple episode, mixed item	71

the same terminology, A.B.C.D. is adopted. The distribution of the unmodified family group between the A.B.C.D. subgroups is shown in table VII.

All six attendance patterns are possible for the modified family group and the breakdown among these patterns is shown in table VIII.

Validity of differentiation between modified and unmodified family pattern

The $\alpha \beta \gamma \delta$ modification is based on the assumption that in this group the family demand is similar to the personal demand. Table IX shows that this assumption is correct and that the subgroups correspond reasonably well to the low, moderate, and high perimean personal groups.

Although downgrading can occur in the unmodified group if the family averages are calculated, this is an arithmetical artefact since the personal demand in this group is so high. It has already been shown in table V that the attendance rates of the dependant children in both groups is similar. This indicates that the factors involved

in the production of the demand for medical care in adults and children differ and are independent of each other. The figures also indicate that high demand of the supremean type is more common among adults than among children. Therefore, the classification based on personal adult demand described above is valid.

Discussion

Although the classification described above has been designed to allow detailed study of the personal and morbid factors which interact to produce the demand for medical attention, some deductions of a general nature can be drawn from its construction.

It is known that the mean demand for the general population must lie somewhere between three and five items of service/patient (Logan and Cushion, 1953; Taylor, 1955). It has been observed that the artificial practice contains a higher proportion of high demand patients than one would expect in the general population. It seems,

TABLE VIII
SECONDARY ATTENDANCE PATTERNS OF MODIFIED FAMILY GROUP

		<i>Secondary attendance patterns</i>					
		<i>Single episode</i>			<i>Multiple episode</i>		
		<i>Single item</i>	<i>Multiple item</i>	<i>Mixed item</i>	<i>Single item</i>	<i>Multiple item</i>	<i>Mixed item</i>
Secondary demand pattern	α	6	—	—	20	—	6
	β	—	—	1	22	—	10
	γ	—	—	—	7	—	4
	δ	—	—	—	—	—	2
Total		6	—	1	49	—	22

These groups are shown schematically in figure 1.

TABLE IX
RELATION BETWEEN PERSONAL DEMAND AND FAMILY DEMAND

<i>Personal demand of responsible adult</i>	<i>Secondary (family) demand pattern</i>				<i>Total</i>
	α	β	γ	δ	
1-3 items	19	4	1	—	24
4-6 items	8	9	4	1	22
7-9 items	5	20	6	1	32
Total	32	33	11	2	78

$\chi^2=37.05$ degrees of freedom=6 P=0.001

in consequence, that the commonest demand patterns in the general population must be the perimean low and moderate in the personal group and the α and β secondary demand patterns in the modified family group. The suprimean group, the unmodified family group and the δ modified family group together probably account for about 10–12 per cent of the general population, since it has already been calculated that these three groups, together with that portion of the D.F.P. of the modified family group who are responsible for a total of more than nine items of service, are equivalent to 15 per cent of the real practice from which they are taken; a practice with a mean work load of 5.9 items of service for a year (Jacob, 1966).

It is clear that this small section of the population exerts a much greater influence on the pattern of medical demand than would be anticipated from its size.

Further conclusions about the nature of general attendance patterns can also be drawn since there is no reason to suppose that the attendance patterns within the artificial practice are subject to selection bias.

In the personal group, single episode patterns are the rule for the perimean low group, but account for slightly more than half of the perimean moderate patterns. Multiple episode patterns are exceptional in the perimean low group, but increase in frequency through the moderate and high perimean groups by steps of one-half and two-thirds respectively. They account for almost three-quarters of the suprimean personal group, while the multiple episode/single item pattern and multiple episode/multiple item pattern are infrequent. This means that the majority of people in the suprimean personal group present with multiple ailments which vary in the extent to which they contribute to the individual's total demand for medical attention. Thus it is less common for high demand to be produced by a single morbid process.

In the family group the multiple episode/single item pattern is most frequent in the α and β modifications, but because personal and vicarious demand produce a summation effect this may be regarded as a disguised single episode pattern. The multiple episode/mixed item pattern is the rule in the unmodified family group but accounts for slightly more than a quarter of the modified group.

These observations allow two hypotheses. One is that the population may be divided into two groups. The larger group is a 'resistant' or 'avoiding' group, who avoid illness or are subject only to mild illness. One would expect to find these people in the low or moderate personal demand groups or the modified family group. If these people sustain more serious illness, they might enter one of the higher demand categories but present with a single episode/multiple item pattern because of general 'resistance' or 'avoidance'. The smaller group is the 'vulnerable' group.

The corollary of this hypothesis is that the postulated 'resistance' or 'avoidance' factors account for the infrequency of the single episode/multiple item presentation.

An alternative hypothesis is that basic good health is general in the population but disease strikes individuals or families as a result of external circumstances. If this happens and the illness is mild, the patient or family returns to the original healthy state, but when the illness is more serious the patient and family are laid open to further illness of all types. Although this gives an alternative explanation for the frequency of the multiple episode/mixed item pattern in the higher demand groups, it should be remembered that the attendance rates for the dependants in the unmodified and modified family groups are similar. This would suggest that the 'resistance-avoidance-vulnerability' hypothesis is a more likely explanation for the observed phenomena.

These two hypotheses are important from the general practitioner's viewpoint, because the first means that the demand for medical attention is a phenomenon associated with patient type, whereas the latter means that the demand for medical attention is disease determined. The approach to rational therapy in its broadest sense is different for the two situations. The information gathered in the artificial practice contains material which allows further study of the part played by disease alone in the genesis of the demand for medical attention, but this must be left for a separate report.

Summary

The demand/attendance patterns which occur in an artificial practice have been described.

They have been used as a basis for dividing the D.F.P. of the artificial practice into categories.

These categories allow the construction of a classification which permits a study of the interrelationship between patient, disease and the genesis of demand for medical attention.

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