

Characteristics of Patients Who Highly Utilize Telephone Medical Care in a Private Practice

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All patient telephone calls to a two-physician private family practice were recorded for a 2-month period. There were 1264 calls, of which 539 were patient-initiated calls for specific medical problems. The 21 patients responsible for four or more of these 539 calls were labeled high utilizers. Chart comparisons were done for high-utilizer and 20 control patients. Calls of high utilizers were also compared with all other calls. High utilizers were older and showed evidence of more emotional dysfunction, more face-to-face medical contacts, more medical problems in general, and a suggestion of less social support. They did not seem to use the telephone in place of face-to-face visits, but used it in addition to an also higher rate of direct physician encounters.

The telephone is taken for granted in American society. In a review of the role of the telephone in primary care, Curtis and Talbot¹ noted that, in 1970, 87% of US households had a telephone and that in 1976 there were 72 telephones for every 100 Americans. With the telephone came a new option for health care, an alternative to the face-to-face visit in the physician's office. The telephone provides instant access to emergency medical services and to communication with health care providers who can alert patients to dangerous symptoms needing emergency evaluation. At the same time there are other calls regarding problems that could be better evaluated in the office, where a physician can use all of the senses and other diagnostic aids. For some patients the telephone seems to become the preferred method of physician encounter.

Why do some patients telephone their physician? There are several possible explanations. One obvious answer is convenience. By telephoning the physician, the patient waits a shorter time for care, does not have to take time off from work, and spends less total time obtaining care. Another obvious reason is cost. Most physicians do not charge for a telephone encounter.¹ Spitz and Block² offer two more possible explanations in a psychological analysis of telephone encounters. They describe a group of callers who

postpone obtaining medical care because of denial until they can no longer tolerate their symptoms. These patients then call their physician in distress. Another group of patients call because of anxiety, which is immediately relieved by making contact with the physician. These patients may then try to back off and minimize the complaint. Indeed, Curtis and Talbot³ in a survey study reported that anxiety or discomfort about a problem was the reason for 80% of calls. In addition, 49% of patients felt that reassurance was more important to them than relief of symptoms.

Utilization of the telephone may vary among groups. In a 1971 study of health maintenance organization patients, Pope and colleagues⁴ found an association between socioeconomic class and telephone use. Patients at a higher socioeconomic level were more likely than patients at a lower level to use the telephone rather than visit the office for new medical problems. Dependency and disease knowledge had little effect. Freeman⁵ studied patients getting prescriptions over the telephone as opposed to in the office. He found the telephone group more likely to be female, older, and to have more psychosocial problems. They were perceived by physicians in a less positive light, as more helpless and complaining and less cooperative in their own care—in short, as “problem patients.”

Three groups of callers were defined by Furman⁶ in a time-motion study in his South African practice: dependent patients, anxious patients, and defensive patients. The last group is intriguing: a group of patients who want contact but at a “safe distance,” avoiding face-to-face contact. He also states that an attempt should be made “to identify

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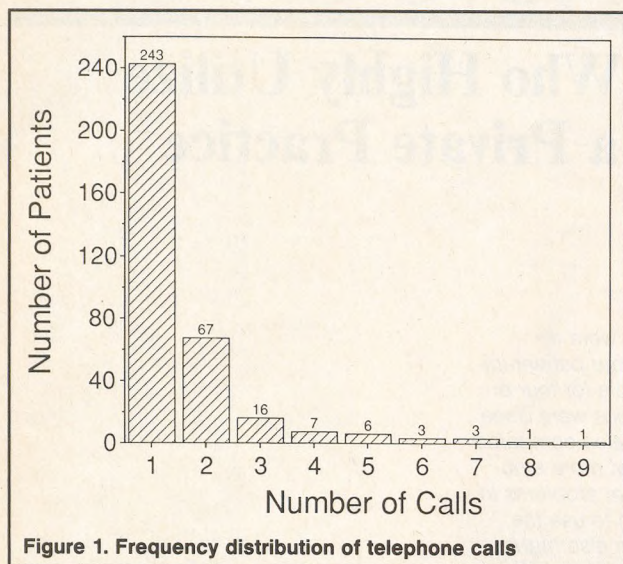


TABLE 1. CHARACTERISTICS OF HIGH-UTILIZER CALLERS AND CONTROLS

Variable	High Utilizers (n = 21)	Controls (n = 20)	P
Calls per patient (mean)	5.4	1.4	.0001
Office or emergency department contacts during same sample period (mean number)	2.5	0.8	.0004
Visits per call (mean)	0.5	0.6*	NS
Female sex (%)	66.7	55	NS
Age (y) (mean)	31.2	14.7*	.03
Medicaid coverage (%)	9.5	11†	NS
Any insurance coverage (%)	85.7	88.2‡	NS
Race (percent black)§	9.5	35.3†	.05
Household size (mean)	3.2*	3.8‡	NS
Living alone (%)	14.3*	0‡	.08

*One missing value; †two missing values; ‡three missing values;
 §All others white
 NS—not significant

what type of patient regularly resorts to telephone contact.”

A unique database of telephone calls during and after office hours in a private practice provided the opportunity to study a group of patients who frequently utilized the telephone. In this study the authors hypothesized that patients who call the physician often are different from those who only occasionally call. Some of these differences were expected to include more markers of emotional dysfunction, higher socioeconomic class, and a propensity to use the telephone rather than a physician visit for their health care.

METHODS

The authors' private family practice in rural North Carolina was the site of the study. For a 2-month period (March and April, 1986), a concurrent log was kept of all medical telephone contacts with the authors, including those during or after hours, in or out of the office. Information collected included patient demographic characteristics, time and length of call, caller identity, diagnosis, disposition, treatment, and recommended follow-up. The physicians ranked each call on three scales at the time of the call. One scale measured physician-perceived call necessity (necessary, reasonable, or unnecessary). Perceived organic and psychological contents of each call were ranked on 5-point Likert scales as used in a previous study.⁷ More descriptive details about these telephone calls are reported elsewhere.⁸

The calls were entered into a computer database and tabulated by patient name, thus generating a list of most frequent callers.

There were 1264 total telephone calls during this 2-month period. Many of these calls, however, were initiated by health care providers in the hospital, emergency department, and nursing home, not by patients. In addition, there were many calls for routine prescription refills. To examine more specifically patient-initiated telephone calls concerning specific medical problems, a subpopulation of 539 calls was studied. This subpopulation excluded administrative, hospital, emergency department, and nursing home calls as well as requests for prescription refills and test results.

Figure 1 shows the frequency distribution of patients by number of calls. Patients who made four or more telephone contacts during the 2 months were considered to be high utilizers. They were compared with a control group of 20 patients randomly selected from the 326 patients making one to three telephone contacts. For both groups chart registration sheets were analyzed for insurance coverage at any time (Medicare, Medicaid, or commercial insurance), race, and household size. Chart problem and medication

TABLE 2. OFFICE CHART CHARACTERISTICS OF HIGH-UTILIZER CALLERS AND CONTROLS

Variable	High Utilizers (n = 21)	Controls (n = 20)	P
Chronic problems	3.1	1.1 [†]	.02
Psychiatric problems	0.3	0 [†]	.01
Episodic problems	6.5	3.9 [†]	.007
Psychotropic drugs	0.6*	0.06 [†]	.09
Chronic drugs	3.8*	1.2 [†]	.09

*One missing value
[†]Two missing values

lists were also tabulated. A further analysis compared all telephone calls from the high-utilization group with all remaining calls.

Univariate analysis for each item was done using the *t* test for continuous variables and the chi-square test for categorical variables, regardless of cell size.⁹ The Statistical Analysis System was used on mainframe¹⁰ and micro-computers¹¹ to assist in statistical evaluation of the data.

RESULTS

Patient Characteristics

Twenty-one (6.0%) high-utilizer patients were responsible for 114 (21.2%) of all calls. Results of chart reviews of high-utilization patients compared with the 20 control patients are summarized in Table 1 and Table 2. Compared with the control group, the high-utilization group tended to be older, were more likely to be white, had more chronic, episodic, and psychiatric problems, and visited the office or emergency department three times as often. They also had more chronic and psychotropic drugs listed on charts and were more likely to live alone. There were no differences in insurance coverage, including Medicaid.

Telephone Call Characteristics

Univariate analysis of characteristics of the calls from the high-utilization group is compared in Table 3 with those of

TABLE 3. TELEPHONE CALL CHARACTERISTICS

Variable	High Utilizers (n = 114 calls)	Controls (n = 425 calls)	P
New problem (%)	43.9	60.1	.005
Organic scale (mean) (1 = low, 5 = high)	3.7	3.9	.02
Psychologic scale (mean) (1 = low, 5 = high)	2.6	2.1	.0002
Top 3 diagnoses*			
Medication side effects (%)	12.3	2.4 [†]	<.001
Viral gastroenteritis (%)	7.0	11.3	NS
Upper respiratory tract infection (%)	6.5	9.4	NS
Any psychiatric diagnosis	5.3	2.9	NS
Medication prescribed (%)	29.8	36.5	NS
Psychotropic medication prescribed (%)	3.5	1.2	.05-.10
Calls made for patient by another (%)	46.5	57.4	<.05
Calls between 5:30 PM and 7:30 AM	24.6	22.6	NS
Calls on weekend (%)	18.4	18.8	NS
Calls resulting in physician request to see patient (%)	14.6	16.6	NS
Calls felt to be unnecessary (%)	5.3	6.1	NS
Calls received out of office (%)	29.8	30.6	NS
Mean length calls (min)	1.8	1.8	NS

*2 × 2 chi-squares: listed diagnosis vs all other diagnoses
[†]Tie with three other diagnoses

all other calls. Calls from high utilizers tended to less often concern a new problem and to have a different pattern of diagnoses. These calls were also judged by the physician to have a lower organic and higher psychological content and were more likely to have been made by the patients themselves, as opposed to a friend or relative.

DISCUSSION

The data characterize a group of patients who highly utilize the telephone for medical problems. Twenty-one patients generated four or more calls (with an average of 5.4) in a two-month period. Perhaps the most surprising finding was that these patients who exhibited high telephone utilization did not seem to use the telephone in place of face-to-face visits, but used it in addition to an also higher rate of direct physician encounters. They were high utilizers of both types of medical care compared with control patients. Unfortunately, it was not feasible to examine whether these patients also highly utilized office care when compared with all patients, including noncallers, in this practice. The implication from the literature that many patients call instead of seeing the physician for medical care, however, does not seem to be supported from these data. The dynamics involved in initiating a telephone physician contact may indeed be more similar than dissimilar to those involved in initiating a face-to-face contact. McWhinney¹³ believes many physician contacts occur because of patients reaching the limits of symptom tolerance or anxiety tolerance. Reaching these limits may cause patients to make whatever type of medical contact seems most feasible to them at the time.

This study does suggest some distinct characteristics of high utilizers of telephone care in this patient population. These patients were more likely to show some indication of emotional dysfunction. They had a greater number of psychological or psychiatric problems and psychotropic drugs noted in their charts. Their calls were also judged as having less organic and more psychological content. Psychotropic medications were almost three times as likely to be prescribed as a result of high-utilizer calls compared with all other calls.

It is not possible to determine from these data, however, that emotional dysfunction was the overt cause for high telephone use. Only 5.4% of high-utilizer calls resulted in a primary psychiatric diagnosis, and the most common diagnoses involved physical complaints. Anxiety about these physical problems might have been higher in this group, which would be consistent with the finding of Curtis and Talbot³ that anxiety about a problem was a common cause for telephoning a physician. The finding that the majority of the high-utilizer calls were for medical problems previously addressed by the physician would further support this notion. Also, McWhinney points out that physicians tend to attach a diagnosis label to encounters that have primarily psychosocial origins. It must be remembered, however, that emotional dysfunction was only inferred, partially utilizing nonvalidated rating scales.

The high-utilizer group of patients had more problems documented on chart problem lists than the control pa-

tients. It is not surprising that those with more problems would seek more medical care, including telephone care. There are no direct measures of socioeconomic class in this study. Medicaid coverage can be seen as a very crude proxy indicator of lower socioeconomic class. Prevalence of Medicaid status did not seem to distinguish the high-utilizer group, but Medicaid coverage in both groups was quite low so that type II error is certainly possible. It is interesting to note the lower percentage of blacks in the high-utilizer group. In this traditional rural southern county, it would unfortunately not be unreasonable to assume a correlation between black race and lower socioeconomic class. If this assumption is valid, the findings of Pope et al⁴ of lower telephone rates among those of lower socioeconomic class might be supported. To draw any conclusions about the influence of socioeconomic class on telephone utilization from such crude indicators, however, would be unwise.

Although one might guess that uninsured patients might use the telephone as a free substitute for charged face-to-face medical care, this study revealed no significant difference in insurance coverage among high utilizers of telephone care compared with controls.

Although this study was not intended to examine the effects of social support on telephone medical care, there was an opportunity tentatively to do so using demographic data from the chart. There did seem to be a tendency for the high telephone utilizers to live alone and be less likely to have someone else call for them, although this trend may be confounded by a probable higher percentage of pediatric patients in the control group (mean age 14.7 years).

There are several limitations of this study. The sample period was relatively short and confined to one particular part of the year. The sample size of high utilizers ($n = 21$) was thus also small. In addition, the control group was selected from the overall population of those patients who did call, albeit at a much lower rate, rather than from a population including those who did not call. For all of these reasons, specific characteristics of high utilizers of telephone medical care may be masked in this study, and the evident characteristics may in reality be more pronounced. On the other hand, the problem of multiple comparisons increases the risk of type I error, and Bonferroni's adjustment would require significant P values at about the .003 range (.05/16 tests = .003) for Tables 2 and 3.¹² A further limitation of this study involves the use of scales assessing both necessity and organic and psychological content, which have not been validated. The two authors undoubtedly had their own definitions of necessity and organic and psychological content as well as biases concerning certain patients and diagnoses. These scale scores, however, were made at the time of the call before any label of high utilizer was attached to patients. The scales had been used by the authors previously.⁷ Curtis and Talbot describe similar

attempts at such physician evaluation of calls, and it seemed reasonable to do so in this study.

Despite these limitations, to the authors' knowledge, this report is the first to specifically address high utilization of telephone care. The ultimate question of why some patients call their physician at a high rate can only be inferred from this method of study. Investigations using direct patient surveys might help further elucidate why certain patients call their physician more often than others and would be needed before strategies could be developed for dealing effectively with such patients, their telephone calls, and their health care needs.

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Commentary

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In the above paper, Daugird and Spencer report that 6% of patients made 21% of the telephone calls to a two-physician private family practice. These frequent telephone calls did not substitute visits to their physicians but were an addition to high outpatient and emergency services utilization. This high-utilization group tended to be older and had more chronic and episodic medical and psychiatric problems. There were also more chronic and psychotropic medications listed on their charts. The physicians, in turn, assessed that these calls had a lower organic and higher psychological content. Only 5.4% of high-utilizer calls, however, resulted in a primary psychiatric diagnosis, and the most common diagnoses involved physical complaint.

Daugird and Spencer found that telephone calls did not replace visits of high users to their physicians. In fact

telephone calls to physicians are more appropriately conceptualized as only one of the multiple components of these patients' overall health care utilization behavior. The factors prompting a telephone contact with a physician are probably very similar to those involved in initiating a face-to-face contact. In a current randomized trial of liaison psychiatry on high users in primary care, a patient's health care utilization was viewed as a composite of his or her outpatient visits to primary care physicians, specialty services, including mental health visits, ancillary services, emergency services, hospitalizations, laboratory tests, procedures, and use of medication.¹

The characteristics of telephone high users in Daugird and Spencer's study are consistent with those from previous research on high users of outpatient and inpatient services. Prior research has demonstrated that a small proportion of patients generate a large share of visits and ancillary services; 10% to 20% of patients account for over 50% of primary care and specialty services as well as hospitalizations.²⁻⁴ This group of high-utilizing patients is not only important from the clinical perspective, but has obvious

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significance for health services delivery as well as for the overall cost of health care.

The findings of Daugird and Spencer that telephone high users have more chronic medical and psychiatric problems are supported by recent studies that have shown an overrepresentation of mental illness as well as chronic medical illness in this population.^{5,6} A large proportion of primary care patients have been found to report psychological distress in association with increased levels of utilization.^{7,8} It is theorized that psychologically distressed persons may monitor bodily sensations with increased vigilance, resulting in amplification of symptoms. Psychological distress also disturbs biological rhythms, such as sleep, appetite, and autonomic nervous system tone, which may lead to increased psychophysiologic symptoms such as increased muscle tension. The increased intensity and persistence of symptoms results in increased use of medical services for physical symptoms.⁹ Research studies have also shown that psychiatric morbidity was associated with high rates of consultation with the physician but no excess in the severity of physical illness.¹⁰

The phenomenon of somatization illustrates the link between psychological distress and increased utilization of services. Katon, Barsky, Kleinman, and others¹¹⁻¹³ have described somatization as the presentation of psychosocial distress in an idiom of physical symptomatology accompanied by a coping style of increased health utilization. Many of the telephone high users in the preceding study of Daugird and Spencer were probably distressed patients who presented with somatic symptoms. This phenomenon of somatization would explain their findings that even though the physicians rated the content of telephone calls in the high-utilization group to have more psychological and less organic content, and the calls resulted in more psychotropic medication being prescribed, only 5.4% of high-utilizer calls had a primary psychiatric diagnosis, and the most common diagnoses involved physical complaints. Research studies of Katon and others^{14,15} in the United States and Bridges and Goldberg in Great Britain¹⁶ have found that when patients present with physical complaints for depression or panic, up to one half of the patients' psychiatric disorders are underdiagnosed. Thus, the results of Daugird and Spencer are probably no exception and are likely to represent an underdiagnosis of psychiatric disorders—most commonly social distress, depression, and panic—in these telephone high users who complained of physical symptoms. Research has also shown that when depression or panic is diagnosed and treated, there is a

decrease in the somatic symptoms of the patients and a reduction in the use of medical services.¹⁷ Therefore, unless the underlying social distress and psychiatric disorders of the telephone high users are diagnosed and treated, one would expect a persistence in their high rate of overall health care utilization including telephone consultations with their physicians.

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