Prevalence and Characteristics of Frequent Attenders in a Prepaid Canadian Family Practice

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Frequent attenders in family practice represent a small proportion of the total population, yet they consume a large amount of services. A description of their characteristics and problems is needed in order to design a therapeutic intervention tailored to meet these needs.

A comparative analytic survey of 9,313 patients was done in order to isolate three cohorts: 200 zero users in the previous year, 200 modal (one to two times per year) users, and 200 frequent users (nine or more times per year). It was found that frequent attenders (who represented 4.5 percent of the practice, yet generated 21 percent of the annual visits) differ from infrequent attenders in that they have twice the probability of being single; are more physically, socially, and emotionally distressed; suffer from problems of self-esteem; show a slightly greater degree of family dysfunction; tend to be unemployed, retired, or mothers of infants; are externally controlled or tend to rely on others for help; receive low incomes, retirement pensions, or family benefits; tend to be high users of other physician, social work, nursing, and laboratory services; consume a significantly greater number of pills than their infrequent user counterparts; and tend to present more emotional and gastrointestinal complaints than their modal user counterparts.

It has been estimated that 10 to 25 percent of patients in a given family practice consume over 60 percent of its service.[1] The majority of analyses uncovering differences in utilization behavior among patients in the same setting have been conducted in fee-for-service systems. Those that have analyzed utilization differences among patients within a prepaid group practice have been done in the United States.

During 1975 the Bunker Hill Neighborhood Health Center in Massachusetts served 9,309 persons who generated 43,615 encounters, with a grand mean utilization rate of 4.7 visits per person.[2] Female utilization greatly exceeded that of males at every age except among males aged 0 to 12 years. Sixty-eight percent of patients belonged to the three youngest age groups and used 60 percent of its services. Persons 60 years and older were the next most frequent user category. Finally, mental distress was the fourth most frequent diagnosis.

The percentage of encounters with a diagnosis of mental disorder was twice that encountered by United States physicians generally.

On the other hand, Byl et al[3] found no correlation between use and age, sex, ethnicity. High use correlated with low education, low income, family problems, living alone, and unemployment.

Conceivably there may be subtypes of frequent users ranging from first-born children presented by their worried mothers to older occupants of the sick role who present themselves.

Patrick et al[4] distinguished between chronic emotional problem patients (those whose emotional problems were not amenable to change through short-term therapy and would likely require periodic intervention) and nonchronic emotional problem patients (those who visited the health maintenance organization one or more times for an emotional problem during the study period). Chronic emotional problem patients where older, most likely to be female and single, averaged 17.1 visits per year, and presented symptoms associated with functional psychoses, depression, and personality disorders.

In summary, the evidence describing the characteristics of frequent attenders in prepaid practices is either contradictory or inconsistent. Further, an initial exploration of the prevalence and characteristics of these high users in a Canadian health service organization would highlight the nature of the treatment strategy or strategies one could match to the subtypes of problems. Such was the purpose of this study.

Methods

Theoretically, it was thought that subtypes of frequent attenders would emerge based on distinctions made about their personal control, physical health status, emotional and social function, family group membership, sex, and age.

In order to test this conjecture, the following null hypotheses were advanced: (1) The rate of utilization will not vary according to the age and sex characteristics of the practice population. (2) Infrequent, modal, and frequent users will not differ in terms of degree of personal control, health status, and emotional and social function. (3) The incidence of common diagnostic categories can account for all of the variation in service use.

This study was conducted in a health service organization in southern Ontario, Canada. Consisting of four family physicians, three nurse practitioners, a part-time nurse family therapist, and other receptionists and nursing staff, the health service organization is funded on a capitation grant from the Ministry of Health, which covers the professional salaries and overhead costs. The amount of these grants is based upon a formula that heavily weighs the size of the group practice, which in this case was 9,313 persons who generated 23,223 visits in the year (June 1978 to June 1979) preceding the study. These visits represent one half the figure generated by the same size population in the US Bunker Hill health maintenance organization. Because the capitation grant is a set annual figure, there exists no financial motive attendant to frequent visits as might occur in a fee-for-service form of renumeration. In fact, this method of financing would penalize the practice for having high users; if anything, there exists a strong incentive on the providers to restrict use.

The professionals provide direct or on-call service 24 hours a day, seven days a week. The clinic is open for appointments, phone advice, and walk-in patients 10 hours per day, six days per week. Part of the contract between this health service organization and the Ministry of Health consists of a monthly financial disincentive (called capitation negation), which accrues to the professionals when patients of this practice use primary care services at places other than this HSO.

The charts of 9,313 patients enrolled in this health service organization were enumerated by four research assistants during June and July, 1979, for their age, sex, use of primary care services, and incidence of hypertension, cancer, diabetes, and use of birth control medication over the age of 35 years.

Within the 9,313 population of patients, there were 3,152 zero users, 3,123 one to two time users, and 422 nine or more times a year users. From these three groups 200 patients were randomly selected from each group to receive the instrumentation.

A letter from the four family physicians was sent to randomly selected patients. The letter was followed in one week by phone calls setting up an appointment for the patient to be interviewed at the family practice. Patients were randomly assigned to one of three research assistants (blind to the study groups) for their interview.
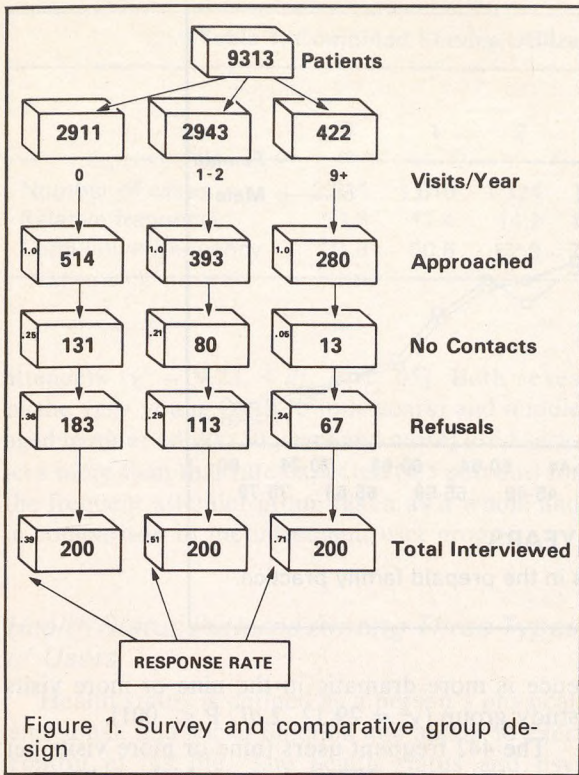
Figure 1. Survey and comparative group design

It was estimated[5] that a total sample of 384 was required to assure 95 percent confidence in the results, plus or minus 5 percent in the values of the scores. Assuming some dropouts, 600 patients would be an adequate sample to deal with dropouts and detect small differences—200 in each study group.

The number and characteristics of patients refusing the interview or having moved away are displayed in Figure 1.

The representativeness of the three sample groups were affected by the "no contact," "move away," and "refusals." In all three samples, females are slightly overrepresented and males are slightly underrepresented when compared to the population from which they were drawn. The mean age of males and females in the three groups was representative of the population, with the exception the mean age of female high utilizers in the sample was five years lower (43.9) than the mean age of the whole population of female high users (48.2). Thus, results about sex differences should be viewed cautiously. Results about age differences among women can be interpreted as an un-

derestimate. Conceivably, a difference of five years of age among female high users may have eliminated a number of chronically ill females, a source of data which may have supported the null hypotheses of physical categories of illness accounting for the variation in use.

During the time from September to December of 1979, consenting patients were administered (1) a 53-item health status questionnaire,[6] (2) a health service utilization questionnaire,[7] (3) the 29-item Rotter Internal/External Control Questionnaire,[8] and (4) selected questions about marital status, income, employment, birth date.

Attached to the health status questionnaire were further questions about the respondent's use of 12 categories of health services. Inquiries about a respondent's health service utilization "was restricted to the reliable duration of recall span: six months for remembering a hospitalization, one month for a visit to a dentist, and one week for the purchase of a prescription."[7]

Categories of health service explored were as follows: physician (all subcategories), nurse practitioner, nurse (all remaining categories), emergency room visits, hospital and extended care, physiotherapist, dentist, social welfare worker, optometrist/optician, podiatrist, laboratory, diagnostic radiography, and direct cash expenditures on health care including drugs.

Rotter's Internal/External Locus of Control Scale[8] was selected to indicate "the extent to which an individual perceives that reward is contingent upon his own attributes or behavior vs the degree to which he feels the reward is controlled by forces outside himself and may occur independently of his actions." The scale consists of 23 question pairs and six filler items, using a forced-choice format in which internal statements are paired with external statements. One point is given for each external statement selected, with scores thus ranging from 0 (most internal) to 23 (most external).

Results

Characteristics of the Population at Large

Figure 2 presents the age and sex distribution of patients in four family practice populations constituting the health service organization. As can be seen in Figure 2, the distribution of the population

Figure 2. Age, sex distribution of patients in the prepaid family practice. Four family practices (n=9,313)
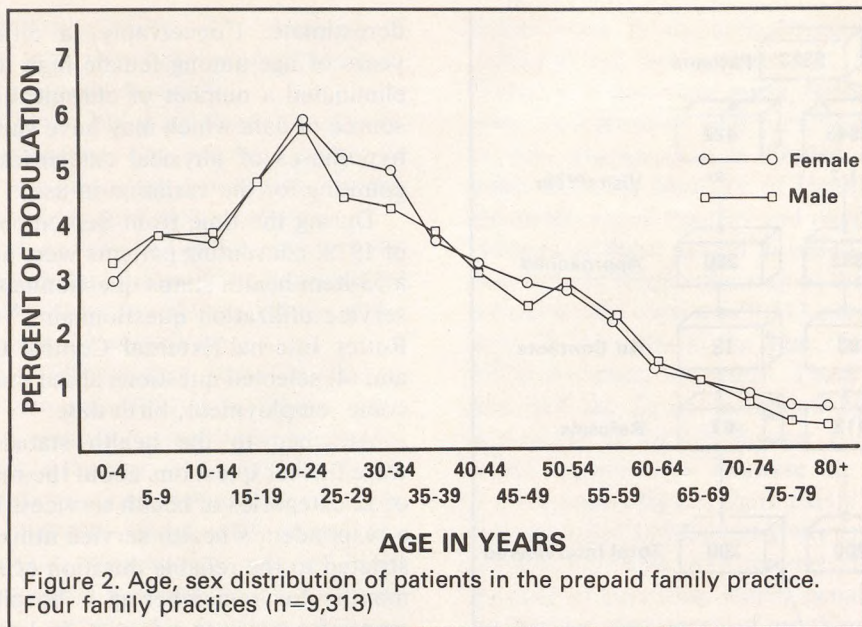
is skewed positively (.524). The mean age in the population is 31.7 years, (SD 19.1) compared with the median age of 28.67 years. The age range in the population is between 1 and 98 years.

Table 1 displays the cumulative and relative frequency of patients' combined emergency room and health service organization use of services in the year between June 1978 and June 1979. Combined services appears to be a good descriptor of total primary care service use, as the correlation (r) between family practice visits and combined visits is .997.

As can be seen from Table 1, 63 percent of the family practice population consumed between zero and two visits per year ($\bar{x}$ = 2.494, median = 1.596).

The standard deviation of combined visits was 3.03. Since the distribution was so strongly skewed (2.443), perhaps a more meaningful indication of dispersion is the interquartile range, which was four; that is, 81 percent of the population fell into the zero to four visits category.

Thirteen percent of the population consumed 46 percent of the servcies if the population is partitioned at six or more visits. Further, a very small proportion (4.5 percent) of the population consumed 21 percent of all annual visits when the population is partitioned at nine or more visits. In the whole population more of these visits were generated by females than males, and this differ-

ence is more dramatic in the nine or more visits study group (χ^2 = 29.12, 2 df, P < .001).

The 442 frequent users (nine or more visits per year) belong to 385 families (which make up a total of 1,063 people), and there is a relatively high concentration of single people (22 percent) when compared to either the modal user group (15 percent single) or the zero user group (15 percent single).

Differences Between Frequent and Infrequent Attenders

From the analysis of the population's use of services, the discrete random sample of frequent attenders was isolated and defined as persons who consume nine or more visits per year. For purposes of comparison, zero users and modal users were correspondingly randomly selected in a case control design. Zero users were defined as persons who had not used the services in the previous year but had used the services in the previous two years. Modal users were defined as persons who had used the services between one and two times in the previous year.

There was approximately the same number of children in the three user groups. The significant difference between the sample of user groups was the high number of female frequent attenders compared with the high number of male infrequent

Table 1. Combined Service Utilization (June 1978 to June 1979) (n=9,313)												
	Number of Visits											
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10-14**	**15+**
Number of cases	2,911	1,619	1,324	965	731	508	388	258	187	132	218	72
Relative frequency	31.3	17.4	14.2	10.4	7.8	5.5	4.2	2.8	2.0	1.4	2.3	.8
Cumulative frequency	31.3	50.6	62.9	73.2	81.1	86.5	90.7	93.5	95.5	96.9	.99	100

attenders (χ^2 = 9.23, 4 df, P < .05). Both sexes of the very young (zero to four years) and middle aged to older adults (50 years and more) used services more than that rate expected (4.5 percent) for the frequent attender group taken as a whole and in comparison to the infrequent user groups.

Health Status Patterns Among Three Types of Users

Health status is defined as a person's physical, emotional, and social function and ability to exert control in his life. The health status and psychosocial differences among zero, modal, and frequent users are displayed in Table 2.

Physical Function

The physical function dimension of the health index describes the ability of the patient to dress, walk, feed himself, read, and other such activities of daily living.

The physical function data and the chi-square of 49.985 (4 df, P < .00001) represent the strongest association between use and health or psychological variables. These data can be interpreted to mean that frequent attenders have significantly more poor to fair physical function. Infrequent attenders are more likely to report good physical function in a statistical sense. However, it is of clinical interest to note how many frequent attenders have good physical function. Something else may explain their visits.

Emotional Function

While frequent attenders reported somatic distress, often something psychological or social underlies this presenting complaint, and thus the presenting complaint can be viewed as a "ticket of admission."

Frequent attenders reported significantly more emotional distress. On the other hand, infrequent attenders reported significantly less emotional distress. Emotional distress among frequent attenders can mean depression, anxiety, or obsessional types of distress.[9] Further, it can mean deficiencies in interpersonal relationships or self-esteem.

There was no significant difference in the frequency of poor interpersonal relationships among the three types of users. Conceivably, it is not the occurrence of emotional difficulty itself which leads to utilization but the ability to withstand difficulty. Withstanding difficulty is a measure of a person's relative resilience or self-sufficiency in the face of difficulty. Self-esteem is one such measure or correlate of resilience.

There was a significant difference in the quality of self-esteem among the three types of users. Frequent attenders had twice the incidence of poor self-esteem than their infrequent attender counterparts.

Social Function

It can be hypothesized that poor self-esteem among frequent attenders will be associated with poor social function in general (recreational, family, work, friendship, gregarious types of activities).

Frequent attenders were found to have poorer social function as compared with infrequent attenders. This can be interpreted to mean that frequent attenders tend to be alone, not visited, contacted by, or in contact with others except possibly family.

Personal Control

Frequent attenders were more externally controlled, and infrequent attenders were more internally controlled, although frequent attenders re-

Table 2. The Difference in the Health Status of Zero, Modal, and Frequent Attenders

Physical Function	Poor	Fair	Good	Total*
Zero	1	2	196	199
Modal	0	3	196	199
Frequent	5	28	165	198
Total	6	33	557	596

*Four missing
$\chi^2=48.985$, 4 df, P<.0000

Emotional Function	Poor	Fair	Good	Total
Infrequent	1	30	169	200
Modal	2	30	168	200
Frequent	7	48	145	200
Total	10	108	482	600

$\chi^2=14.49461$, 4 df, P=.0059

Personal Relationships Score	Poor 0-3	Good 4-7	Total
Infrequent	37	163	200
Modal	32	168	200
Frequent	42	158	200
Total	111	489	600

$\chi^2=.4365$, 2 df, P=.4365

Self-Esteem Score	Poor 0-3	Good 4-7	Total
Infrequent	21	179	200
Modal	25	175	200
Frequent	41	159	200
Total	87	513	600

$\chi^2=9.0341$, 2 df, P=.0109

Social Function Score	0-4	5-8	9-12	Total
Infrequent	1	103	96	200
Modal	0	107	93	200
Frequent	8	110	82	200

$\chi^2=14.1$, 4 df, P<.007

Personal Control Score	Internal 1-8	External 9-16	Total
Infrequent	106	83	189
Modal	88	98	186
Frequent	68	101	169

$\chi^2=9.06$, 2 df, P<.0108

fused to complete this questionnaire twice as often as their infrequent and modal counterparts.

Financial Differences

Table 3 separates the retired from the employable patients and tests the question of full-time or part-time work differences among three user groups.

It can be seen that there are significantly more unemployed and retired frequent attenders than infrequent attenders.

The personal income in the previous year among three user groups (with nonemployed housewives removed) illustrates a significant difference in income among the three groups ($\chi^2 = 58.32$, 32 df, P < .003). Frequent attenders are poorer. Infrequent attenders are richer. This

corresponds to the working/not working data in Table 3.

Since frequent attenders have less income and are often unemployed, some analysis of these persons' "benefit" source of income proves to be interesting.

There was no significant difference in the number of recipients of (1) unemployment insurance, (2) workman's compensation, and (3) welfare sources of income among the users. The significant differences in old age, Canada, and job pensions can be attributed to the number of elderly in the frequent attender group.

Persons other than the elderly receive the Family Allowance Benefit. The amount of this benefit received is a function of the number of dependents living in the household. While very few people re-

Table 3. Proportion of Patients Working at Full-Time or Part-Time Jobs Among Three User Groups			
	Percent Working	Percent Not Working	Percent Retired
Infrequent	68.0	26.5	5.5
Modal	58.5	36.5	5.0
Frequent	46.0	38.5	16.0
χ^2=11.97, 2 *df*, P<.01			

ceive this benefit at all, those who do receive this are more likely to be frequent attenders (χ^2 = 14.51, 6 *df*, P = .02).

Health Service Utilization Outside the Health Service Organization

Table 4 displays the pattern of using four types of professionals *outside* of the health service organization among the three user groups.

More utilization of health services outside of the health maintenance organization were made by the frequent user patients to three of the four health professionals examined. This includes physicians and social workers as well as nurses. In addition, frequent attenders consumed more laboratory services than their infrequent counterparts (χ^2 = 14.4, 2 *df*, P = .0008). Laboratory investigations, however, are ordered by health professions and cannot be initiated by the patient.

Consumption of Medication

Patients were asked about the number of doses of medication taken in 17 categories in the previous two days. Frequent attenders consume signficantly more medication (χ^2 = 62.4, 6 *df*, P < .00001) than infrequent users. Additional analyses of the medication data revealed that frequent attenders consume more pain relievers, stomach remedies, tranquilizers, and blood pressure pills than their infrequent counterparts.

Presenting Complaints

Table 5 displays the presenting complaints of modal and frequent users in the previous year. The degree of agreement among four judges classifying these data in ten categories of complaint was κ = .701407.

The total frequency of complaints differed between groups and reflected the difference in the

Table 4. The Use of Health Professionals Outside the Health Service Organization By Three User Groups			
	0	1+	Visits
*Nurse**			
Infrequent	80	20	200
Modal	186	14	200
Frequent	148	52	200
*Physician***			
Infrequent	160	40	200
Modal	171	29	200
Frequent	144	56	200
Social Worker†			
Infrequent	197	3	200
Modal	200	0	200
Frequent	191	9	200
Physiotherapist‡			
Infrequent	199	1	200
Modal	197	3	200
Frequent	194	6	200
*χ^2=33.99, 2 *df*, P<.0000 **χ^2=11.18, 2 *df*, P<.0037 †χ^2=10.7, 2 *df*, P<.0047 ‡χ^2=3.86, 2 *df*, P<.145			

frequency of visits. The row percent controls for this difference in frequency and will be used for comparison.

It can be seen that while there was a general spread of complaints throughout both groups, the main difference in complaints between frequent and modal users was as follows: frequent attenders presented almost twice the proportion of emotional problems compared with modal users. Further, they presented almost three times the proportion of gastrointestinal upset compared with their modal counterparts; conversely, more skin, musculoskeletal, and genitourinary complaints prevail in the modal user group.

It was found that the nurses and physicians both treated a general array of problems but differed in some ways. Nurses spent a greater proportion of their time dealing with general, emotional, skin, and genitourinary problems. Physicians spent a greater proportion of their time on eye, ear, nose, and throat, respiratory, gastrointestinal, and musculoskeletal problems (χ^2 = 45.70, 9 *df*, P<.0001). There was no significant difference, however, in the allocation of professionals to modal or frequent user groups.

Table 5. The Presenting Complaints of Modal and Frequent Users In The Previous Year										
	General*	Emotional	Skin	Neurological	EENT	Respiratory	Gastrointestinal	Genitourinary	Musculoskeletal	Acute**
Modal Users (n=337)										
Frequency	112	19	34	5	23	42	13	45	63	21
Row %	30	5	9	1	6	11	3	12	17	6
Frequent Users (n=2,132)										
Frequency	592	204	127	79	101	254	168	188	305	144
Row %	28	10	6	3	5	12	8	9	14	5

$\chi^2=32.65$, 9 df, P=.0002
Judges: average agreement = .783333, chance agreement = .274375, Fleiss's generalized kappa = .701407
*Fatigue, weight loss, insomnia, malaise
**Aches, sprains, lacerations

Discussion

In summary, there was no significant difference in the age distribution and sex ratio of this health service organization study population, the four family practice subpopulations, and these same characteristics in the large population of the city taken as a whole. There was no difference in the mean use of services in this health service organization and the Ontario mean use of services for all family physicians. Females of all age groups except those zero to four years old used services more than males. There was no significant or important relationship found between age and use or common conditions and use in the general population or in the three study groups. The three study groups were not different in age, sex, or family practice representation. These characteristics of the study population support the characteristics observed by others in the United States.

Frequent attenders differed from infrequent attenders in that they represented 4.5 percent of the population yet generated 21 percent of the annual visits; have twice the probability of being single (22 percent vs 12 percent), and these singles have a large female to male ratio (69 percent female to 39 percent male); are older ($\bar{x} = 49$ years) than either married high users ($\bar{x} = 44$ years) or the general population ($\bar{x} = 31$ years);

male high users tend to fall in the 0- to 4- and 20- to 24-year old age groups; are significantly more physically, socially, and emotionally distressed; suffer from problems of self-esteem; show a slightly greater degree of family dysfunction; tend to be unemployed, retired, or mothers of infants; are externally controlled or tend to rely on others for help; receive low incomes, retirement pensions, or family benefits; tend to be high users of physician, social work, nursing, and laboratory services; consume a significantly greater number of pills than their infrequent counterparts; and tend to present more emotional and gastrointestinal complaints than their modal user counterparts.

From one perspective these findings could be viewed as generally consistent with the findings of others who used different measures of similar constructs.

Other studies provide additional "trait" correlates of the frequently ill person. Shuvall and Antonovsky found that use of services was a way of obtaining latent rewards and secondary gains and suggest that, by legitimizing illness, the physician enables the person to cope with failure.[10] Mechanic found that persons who reported high stress as measured by frequency of loneliness and nervousness were significantly more likely to use medical services.[11] He also observed that persons

having more interpersonal difficulties were more likely to express a high inclination to use medical facilities than were persons with lesser interpersonal difficulties.[11] Also, persons with a high tendency to seek medical care were significantly more likely to report to a health service illness which met the criteria for a "routine illness" for this population. Stoeckle found that persons who seek medical care on their own initiative frequently exhibit psychiatric distress (depression and grief).[12] These studies show that a high incidence of somatic distress accompanies a high incidence of psychiatric distress. Zola found that the time at which persons seek help is more related to an experience of interpersonal crisis or an interference with personal and social relations than when the patient is physically the sickest.[13] Friedson has pointed out that people seek help through a lay referral system and the person in need of help may never reach a professional.[14] Subsequently, frequent users may therefore be isolated deviants. Cleghorn and Streiner could predict the illness behaviour of college students from measures of life stress and their verbalized depressive themes[15]; Jacobs et al found correlates similar to Cleghorn.[16] Philips found that only those who place a value on health and place little emphasis on self-reliance are likely to be inclined to seek help.[17] Browne noted that frequent attenders often verbally avoided the professional and implicitly taught the professional to avoid the real issues at hand.[9]

From another perspective, the strongest association in the data was between use and physical ill health. This evidence supports the hypothesis that the major reason these patients used more service is because they were physically more ill. Thus, some part of frequent use could be viewed as appropriate utilization.

Clearly this case control study design cannot make definite conclusions about causation from either perspective. In summary, this study identified characteristics of frequent attenders in a family practice. Consistent with other studies, this small percentage of patients generated a relatively large proportion of visits when compared with their infrequent counterparts. While a complex interaction of variables must account for frequent use of medical care, this study showed that frequent attenders differ from infrequent attenders on a number of important characteristics. Findings suggested that frequent attenders, when compared with infrequent users, not only are more troubled emotionally and socially but also suffer more from physical ill health. The "cause" of frequent use of medical care cannot be attributed to any particular characteristic. In fact, this study seems to support the well-documented view of illness as the interaction of physical, social, and emotional distress. Regardless of the cause of frequent use of medical service, this small group of needy patients represents significant economic and quality of care problems. Further research should address both dimensions of the problem by testing therapeutic interventions designed to decrease use while increasing patients' satisfaction with care.

Acknowledgement

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