Original Articles

Behavior of Patients with Flu-Like Symptoms: Consultation with Physician versus Self-Treatment

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Abstract

Background: The reasons that patients consult the clinic physician for common minor symptoms are not clearly defined. For seasonal epidemic events such as flu-like symptoms this characterization is relevant.

Objectives: To identify the factors that prompt patients to seek medical attention, and correlate patient behavior with different demographic and disease variables.

Methods: A random sample of 2,000 enrolled people aged 18–65 years and registered with eight primary care clinics located throughout Israel were asked to report whether they had had flu-like symptoms within the previous 3 months. Those who responded affirmatively (n=346) were requested to complete an ad hoc questionnaire evaluating their treatment-seeking behavior.

Results: A total of 318 patients completed the questionnaire (92% response rate), of whom 271 (85%) consulted a physician and 47 (15%) did not. Those who sought medical assistance had more serious symptoms as perceived by them (cough, headache and arthralgia) (*P*<0.05), and their main reason for visiting the doctor was "to rule out serious disease." Self-employed patients were more likely than salaried workers to visit the clinic to rule out serious disease (rather than to obtain a prescription or sick note or to reassure family). They also delayed longer before seeking treatment (*P*=0.01).

Conclusion: In our study the majority of individuals with flu symptoms tended to consult a physician, though there were significant variations in the reasons for doing so, based on a combination of sociodemographic variables. We believe these findings will help primary care physicians to characterize their practices and to program the expected demand of flu-like symptoms.

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The reasons that prompt patients to seek medical care have interested researchers for years. Better insight into these factors may improve patient scheduling by primary care physicians and help them in understanding patient behavior. Previous studies have shown that the quest for medical attention varies with ethnic origin, age, gender, education, income, vaccination status, distance from health services, smoking habits, marital status, self-appreciation of health status, and past experience [1–6]. There are few data, however, on the reasons for patients seeking medical help for common acute symptoms. Some authors have studied this issue with regard to a specific illness, such as cancer [1–3], myocardial infarction [4,7–9], specific symptoms [5,6], or accidents [10]. Two studies that dealt with acute illness did not specify the symptoms that were reported and did not compare different variables for the same symptoms [11,12].

The present work was designed to study the health behavior of patients with a relatively minor health problem, namely flu-like symptoms. The aims of the study were to identify the factors that induce patients to seek medical assistance and to correlate patient behavior with demographic and disease variables.

Materials and Methods

Setting

The Israel National Health Insurance Law stipulates that every resident must be registered with one of the four recognized health maintenance organizations (sick funds), which assigns him/her to a primary care physician. On average, a family practice comprises 1,000–1,800 people. To obtain a comprehensive view of the population the present cross-sectional study was performed in eight family health clinics located throughout the country.

Procedure

A random sample of 2,000 enrolled people aged 18 to 65 years was extracted from the directory of the eight participating clinics in April 1994 (250 patients per clinic) and contacted by telephone. The method for sampling

was as follows. In every clinic a random number from 1 to 10 was chosen; this number was then utilized as the first in the list of enrolled persons. Subsequently, every fifth enrolled person in the list was selected for the sample until a total of 250 persons in every clinic was reached. If the selected enrolled person was not aged between 18 and 65 years, the nearest to this age group was chosen.

The subjects were asked whether they had had fever above 38°C alone, or fever associated with at least three of the following: malaise, diffuse musculoskeletal pain, nasal discharge, sore throat, headache, chills, dizziness, or cough during the previous 3 months (December 3 to March 3). Those who answered affirmatively were asked to complete an ad hoc questionnaire sent by mail. Patients with a specific diagnosis other than flu and those who reported different symptoms were excluded.

The minimum sample size was calculated in order to estimate the proportion of sick people (under the study definition) who sought consultation for any reason from their family doctor. Although in Israel this rate is assumed to be high because the consultation is free, we opted for an anticipated conservative and prevalence value of 50%, which is the "safest" choice since the sample registered is largest when 50%. For this proportion (confidence level of 95% and relative precision of 10%), the required sample size is 384. If multiplying this number by 3 (based on the fact that during non-epidemic years one-third of the population will suffer from "the disease") [13], we would need a minimum sample of 1,152 subjects, which is very similar to the figure used in previous studies [13]. In order to achieve a sample size large enough we decided to increase the sample to 2,000. The clinic registry was reviewed to verify if those who reported having consulted the family doctor did in fact do so.

Data analysis

The dependent variable studied was medical-seeking behavior for flu, i.e., consultation with a primary care physician vs. self-treatment, consultation with a family member, rabbi, friend, or other. The independent variables were symptoms and previous experience with the disease. To verify whether the behavior reported was not unusual for the individual patients, they were also asked whether they had an overall tendency to treat themselves or to consult a physician when they had a common cold. Confounders included living conditions (living alone or with family), religious observance, place of birth (Israel or other country), income level, education, employment status, smoking habits, and presence or absence of chronic comorbidity (without specification). The main reasons for consultation were also analyzed and compared within different groups of patients (demographic, income, employment status, etc.).

Results

Of the 2,000 people contacted, 59 (3%) declined to respond. Study symptoms were reported by 346 of the remaining 1,941 subjects (17.8%); 318 of them agreed to complete the questionnaire (92% response rate).

Results of the analysis showed that 271 of the 318 patients (85%) consulted the family practitioner (confirmed by a review of the clinic registry), whereas 47 (15%) consulted other sources, treated themselves, or both. There were no differences between these two groups in any of the demographic or socioeconomic variables studied [Table 1] or in the rate of the presence of a chronic disease (13.1% and 17.4% respectively).

In response to the question regarding usual medical-seeking behavior, the patients who had consulted their doctor confirmed that they almost always did so in similar situations compared to those who had not ($P<0.001$).

The main reason for visiting the physician was to rule out serious disease ($P=0.02$ compared to all other

Table 1. Distribution of demographic variables between individuals who consulted a physician and those who did not

		Consulted		Did not consult
	Total	No. (%)	Total	No. (%)
Mean age (yr)		28 (+/-11)		38 (+/-12)
Gender				
Male	271	109 (40.2)	47	14 (29.8)
Female		162 (59.8)		33 (70.2)
Country of origin				
Israel	271	199 (73.4)	46	36 (78.3)
Other countries		72 (26.6)		10 (21.7)
Religious observance	271	126 (46.5)	47	25 (53.2)
Orthodox or traditional		145 (53.5)		22 (46.8)
Non-observant				
Education (yr)				
1–8	253	18 (7.1)	44	3 (6.8)
9–12		92 (36.4)		22 (50.0)
13+		143 (56.5)		19 (43.2)
Employment status	241	210 (87.1)	43	33 (76.7)
Salaried		31 (12.9)		10 (23.3)
Self-employed (independent)				
Working status				
Currently working	271	214 (79.0)	43	33 (76.7)
Unemployed		57 (21.0)		10 (23.3)
Living conditions				
Live alone		14 (5.2)	46	4 (8.7)
Live with family		257 (94.8)		42 (91.3)
Smoke				
Yes	270	49 (18.1)	47	9 (19.1)
No*		221 (81.9)		38 (80.9)
Income level**				
<2000	257	45 (17.5)	42	11 (26.2)
2000–4000		102 (39.7)		10 (23.8)
4000–8000		87 (33.9)		18 (42.9)
≥8000		23 (8.9)		3 (7.1)

Note: There were no significant between-group differences for any of the factors. Some of the data were missing for several subjects.

* Included those who stopped smoking.

** In shekels

reasons). Furthermore, those who visited the doctor mainly to rule out serious disease also tended to seek advice significantly more often from other sources as well, compared to individuals who visited the doctor for other reasons, e.g., to obtain a prescription or sick note or to reassure family ($P<0.05$). No such difference was found on separate analysis of the other reasons for visiting the doctor. Accordingly, we also found that the individuals who visited the doctor reported more serious (based on self-perception) complaints (i.e., cough, headache and arthralgia), whereas those who turned to other sources had less serious complaints ($P<0.05$) [Table 2]. This was true also when the confounders — education, smoking, income, time from onset of symptoms to consultation, and usual tendency to consult sources other than the physician — were controlled for.

The time lapse to consultation did not differ for any of the symptoms. It did differ, however, by type of employment, with self-employed individuals showing a higher tendency to delay their visit more than salaried workers ($P<0.01$). The self-employed also visited the physician to rule out serious disease more than for other reasons ($P=0.01$) [Tables 3 and 4]. There was no difference between these two subgroups for specific symptoms (i.e., an equal number of self-employed and salaried workers presented for cough, headache or arthralgia). Significant differences were found for length of absence from work between those who presented to the doctor to rule out serious disease and those who came for other reasons. Age, gender, smoking, religious observance, and income level did not have any impact on the length of absence from work.

Cross-tabulation of the main reasons for visiting the doctor by the different variables studied [Tables 3 and 4] yielded several significant ($P<0.05$) characteristic profiles:

- *To rule out serious disease:* age older than 30 years (mostly 30–39 years), more than 13 years of education (many were university graduates), low monthly income (most earning 2,000–4,000 shekels; the national average wage during the study period was 3,631

Table 2. Differences in symptoms (%) between those who consulted a physician (n=271) and those who did not (n=47)

Symptom	Consulted	Did not consult	*P* value
Fever	55.6	33.3	NS
Sore throat	64	62.2	NS
Cough	64.7	48.9	<0.05
Headache	74.4	60	<0.05
Arthralgia	45.7	22.2	<0.05
Nausea	23	20	NS
Rhinitis	68.7	60	NS
Hoarseness	32.4	40	NS
Breathlessness	17.6	13.3	NS
Weakness	70.9	60	NS

Table 3. Cross-tabulation of the main reasons for consultation and patient characteristics

Variables	Reasons for consulting physician				
	R/O serious disease	To get a prescription	To get sick leave	To re-assure family	Total*
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Total	106 (43.0)	97 (39.4)	36 (14.6)	7 (2.8)	246 (100)
Age (yr)					
18–29	44 (42)	66 (68)	6 (17)	4 (57)	120 (48.7)
30–39	53 (50)	22 (23)	16 (44)	4 (29)	93 (37.8)
40–65	9 (8)	9 (9)	14 (39)	1 (14)	33 (13.4)
Gender					
Male	35 (33)	39 (40)	19 (53)	5 (71)	98 (39.8)
Female	71 (67)	58 (60)	17 (47)	2 (29)	148 (60.2)
Income (shekels)					
<2,000	12 (11)	26 (27)	3 (8)	3 (43)	44 (17.0)
2,000–4,000	38 (36)	40 (41)	17 (47)	4 (57)	99 (40.2)
4,000–8,000	41 (39)	29 (30)	12 (33)	-	82 (33.3)
≥8,000	15 (14)	2 (2)	4 (11)	-	21 (8.5)
Education (yr)					
1–8	7 (7)	6 (6)	3 (8)	1 (14)	17 (6.9)
9–12	28 (26)	46 (47)	9 (25)	6 (86)	89 (36.2)
13+	71 (67)	45 (46)	24 (67)	-	140 (56.9)
Religious					
Orthodox/ traditional	49 (46)	46 (47)	16 (44)	3 (43)	114 (46.3)
Non-observant	57 (54)	51 (53)	20 (56)	4 (57)	132 (53.7)
Smoking					
Yes	14 (13)	20 (21)	9 (25)	2 (29)	45 (18.3)
No/stopped	92 (87)	77 (79)	27 (75)	5 (71)	201 (81.7)
Absence from work					
Unemployed	24 (23)	23 (24)	-	2 (29)	49 (19.9)
Was not absent	29 (27)	39 (40)	5 (14)	2 (29)	75 (30.5)
Absent <3 days	41 (39)	18 (19)	18 (50)	3 (43)	80 (32.5)
Absent ≥3 days	12 (11)	17 (19)	13 (36)	-	42 (17.1)
Employment status**					
Salaried	62 (76)	69 (93)	36 (100)	4 (57)	171 (86.8)
Self-employed	20 (24)	5 (7)	-	1 (43)	26 (13.2)
Total employment status	82 (41)	74 (38)	36 (18)	5 (3)	197 (100)

* Did not include 24 patients who answered "other reason, not specified" and one patient who did not answer this question.

**In this category, only working patients were included.

shekels), and absent from work for less than 3 days before seeking attention.
- *To obtain a prescription:* age 18–29 years, high *school* education, unemployed or low monthly income.
- *To obtain a sick-leave note:* age 30–65 years, university graduate, monthly income 2,000–8,000 shekels, and less than 3 days of absenteeism before seeking attention.

Table 4. Correlation between main reason for consultation* and personal characteristics of patients (n=239)

Reason for consultation	Age group (yr)		Gender		Income**		Education (yr)		Religiosity[+]	Days absent from work[++]		Employment status		Smoking[·]	
	<30	30+	M	F	Low	High	<13	13+	Observant	<3	3+	Salaried	Self-employed	Yes	No
To rule out serious disease	44	62	35	71	50	56	35	71	49	57	70	12	62	20	14	92
To obtain a prescription	66	31	39	58	66	31	52	45	46	51	57	17	69	5	20	77
To obtain sick leave	6	30	19	17	20	16	12	24	16	20	23	13	36	–	9	27
P[··]	<0.01		NS		NS		<0.01		NS	<0.05		<0.01		NS	

* The reason "to reassure the family" was excluded from the analysis due to the small size of this group (7 patients).
** Low income included two groups, those earning <2,000 and 2,000–4,000 shekels a month; high income referred to monthly earnings of 4,000–8,000 and 8,000 and more shekels.
[+] The group "yes" included all those patients who defined themselves as orthodox or traditional.
[++] Included two groups: those who were not absent and those absent for less than 3 days. Unemployed patients (n=49) were excluded from the analysis.
[·] Included patients who had also stopped smoking.
[··] By Chi-square test.

- ***To reassure family:*** age 18–29 years, high school graduate, low monthly income, and absence from work for less than 3 days prior to their visit. This category was not included in the statistical analysis due to its small size (7 patients).

Discussion

Our findings support those of Stoller et al. [14] who examined the self-care responses to symptoms in the elderly. They suggested that: "Whether people ignore or treat symptoms appears to have less to do with their familiarity with the symptoms and their casual explanation than whether or not the symptom causes them pain and discomfort, whether it interferes with their desired activities, or whether they think it might be indicative of a serious disease." This is in contrast to the conclusion of Dean [15] that some form of non-pharmacological self-treatment is the most frequent behavioral response to common illness, and that those who abstain from visiting their doctor probably initiate behavioral changes or simply ignore the symptoms. The majority of our patients tended to consult their family physician when they had what we defined as "flu-like disease," which concurs with the findings of Carrat and coworkers [16]. It is noteworthy that our study was performed in a sick fund of the Israel National Health Insurance System, where all consultations are free. We believe that in "fee for services" systems the rate of consultations could be lower. Compared with subjects who sought advice from other sources, those who consulted the doctor were more concerned about their health and were often encouraged to consult the doctor by a concerned family member. Their self-perceived symptoms were also more serious (cough, headache, arthralgia), or interfered more with their daily activities. We suggest that family physicians need to address these symptoms during patient examinations and reduce patient anxiety by discussing their significance. Obviously, our study did not address specifically the comorbidity of bronchitis, a situation that is relatively frequently associated with "flu-like symptoms" because all patients with a diagnosis other than flu were excluded. Macfarlane et al. [17] reported that informing patients about the natural history of acute lower respiratory tract illness is an effective strategy for reducing reconsultation, and in consequence reduces the use of antibiotics.

Our observation that the self-employed tend to delay their visit to the doctor more than salaried employees may be attributed to the fact that self-employed persons are more likely to suffer a loss of income if they are absent from work. This may also explain our finding that employed individuals consult a doctor primarily to exclude serious disease, whereas the unemployed come for other reasons.

Our cross-tabulation of the reasons for visiting the doctor by the various demographic and socioeconomic variables yielded distinct patient profiles for each one. Those who came "to rule out serious disease" were more educated, older and mostly employed, whereas those who came for a prescription were mostly high school graduates or young adults and many were unemployed. The latter may not require a sick note. The patients who needed a sick note were the oldest group, highly educated, employed, and with a higher income. Gender, smoking and religious observance were non-significant factors in our study.

We believe that these findings will help primary care physicians to characterize their patients and to program the expected demand of flu-like symptoms accordingly.

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