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XI. The Incidence and Burden of Minor Illness in a Healthy Population: Methods, Symptoms, and Incidence[1-4]

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SUMMARY

A longitudinal study of a group of Manhattan residents was performed in the Cornell Family Illness Study. Weekly observations of 14 acute symptoms were made by interview. The symptoms were combined into syndromes by occurrence, and episodes of syndromes were considered illnesses. Analysis of illness in this population showed results similar in incidence, frequency, and symptoms to those of a number of similar studies, despite differences in definitions and methods.

The 1,707 subjects of the study yielded 1,168 person-years of information. Respiratory illnesses accounted for 60 per cent of all illnesses and 81 per cent of the person-days of illness. The average respiratory illness lasted 9.4 days (6 days longer than the average nonrespiratory illnesses).

The incidence of "common cold" was 3.4 per person per year; the incidence of all respiratory illnesses was 4.6 per person per year. The rate decreased with age, and those younger than 5 years had twice the rate of that in older persons. The rate for women was greater than that for men, and the rate for whites was greater than that for either Negroes or Puerto Ricans.

Introduction

Although minor respiratory illness is commonly considered to be the largest cause of disability in normal populations, definitive longitudinal studies have been limited by the technical difficulties involved and by the inadequacy of present diagnostic tools. The opportunity to explore these illnesses in natural settings has been limited, and reported information concerning their frequency, duration, severity, recurrence, familial spread, and incubation periods is conflicting.

Past studies by other investigators (1–9), and the National Health Survey (10, 11) provide most of the current knowledge of the frequency of these minor illnesses. In most of these studies, incidence, secondary

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attack rates, seasonal patterns, recurrences, and age-sex differences were examined. The criteria used to define an illness and the populations observed differed among the studies, and the findings reported have not yet been adequately compared.

These epidemiologic studies yielded less information concerning incubation periods, differences in symptoms, duration and severity of minor illnesses, and intervals between successive illnesses than did the experimental studies of Andrewes (12), Roden (13) and Tyrell (14) in England, and those of Jackson and associates (15) and Lefkowitz and co-authors (16) in the United States.

In this paper, the results of the studies cited are compared with each other, and with the results of the Cornell Family Illness Study. Because these studies were all concerned with the occurrence of common respiratory illness in family groups, one might expect a basic similarity in results, and that any differences noted could be ascribed to differences in methods. When similarities are found, the patterns of illness described may be assumed to represent similar illnesses and, probably, similar environmental influences.

Materials and Methods

The Cornell Family Illness Study, which has been described more completely by McCarroll and associates (17), followed 448 Manhattan families for as long as 3 years (1962 to 65). The families were volunteers from a 2-stage cluster sample of lower Manhattan with representatives of the most common age, race, and family structure groups of lower Manhattan to ensure representation of the characteristics of family composition, ethnic, social, and economic variables. Each family was observed for an average of 45 weeks, during which weekly visits were conducted by interviewers asking standardized questions regarding acute symptoms, exacerbations of chronic illness, and general well-being. An average of 35 weekly reports (range: 4 to 129) was completed for the subjects, providing data for 1,707 persons, representing 1,168 person-years of observation. In addition to the weekly symptom information, various baseline data (e.g., demographic, social, and medical histories) were obtained for each subject. Both types of information were used in this report.

As in most studies of this type, reporting within the household was usually performed by the mother, or her equivalent (approximately 85 per cent of interviews). Although no diagnostic tools were used to confirm illnesses, the efficacy of such methods has been considered slight in the epidemiologic study of most acute minor illnesses (4, 6, 15, 18). Lack of professional medical observation of specific illness also posed some problems in the interpretation of some symptoms. These, unfortunately, are problems of all such field studies. For this report, responses by the subjects were accepted without laboratory confirmation. The 14 acute symptoms concerning which subjects were questioned weekly are listed in table 1. The day of onset and the duration of each symptom were determined for each reported occurrence.

The weekly questionnaire asked for daily information on 14 acute symptoms. The questions were in the following form: "Did you have a sore throat this week? (If yes) on what days did it occur?" The first analyses considered the order and arrangement of combinations of symptoms, as suggested by Van Volkenburgh and Frost (1), and illness groups were determined from this analysis to represent characteristically different syndromes. Although these syndromes

TABLE 1

REPORTED DAYS OF RESPONSE FOR 14 ACUTE SYMPTOMS FOR THE TOTAL POPULATION

Symptom	Days *(no.)*	Per Cent of Total Days
"Common cold"	34,766	8.16
Rhinitis	34,242	8.04
Cough*	22,304	5.23
Headache†	10,419	2.45
Eye irritation	7,821	1.84
Sore throat†	7,697	1.81
Myalgia†	5,028	1.18
Whistling/wheezing*	3,283	0.77
Subjective fever	2,982	0.70
Abdominal cramps	2,966	0.70
Nausea†	2,349	0.55
Diarrhea	1,792	0.42
Vomiting	1,388	0.33
Cervical lymphadenopathy	726	0.17
Total	137,763	32.33
Total person-days	426,076	

*Non-chronic.

†Asked only for those 5 or more years of age.

differed in symptoms, frequency, and duration, they constituted a series of illnesses defined by the symptoms reported.

Among the questions regarding acute symptoms, the question "Have you a cold this week?" was asked. Although the "common cold" is properly a syndrome and not a symptom, most respondents consistently labeled a common set of symptoms with this title. Only rarely did a respondent report a "common cold" without reporting any symptoms. This failure to report other symptoms was assumed to represent a respondent error of omission.

In table 1 are listed the frequencies of individual symptoms reported by the subjects. The relative proportions of person-days of reported symptoms are also provided. On the basis of this response, five syndromes (illnesses) were then defined as combinations of cojoint symptoms (specific subsets of response): (*1*) common cold —illnesses for which this response was given either alone or in combination with other symptoms; (*2*) rhinitis (a report of rhinitis as a symptom was an affirmative response to the question: "Did you have a stuffy or runny nose . . .?")—illnesses for which "common cold" was not mentioned, and which included rhinitis either alone, or with other symptoms; (*3*) cough and/or sore throat—illnesses for which "common cold" or "rhinitis" was not mentioned, and which included cough and/or sore throat either alone or with other symptoms; (*4*) gastrointestinal illness—illnesses during which respiratory symptoms were not mentioned, and during which one or more gastrointestinal symptoms were reported either alone or with other symptoms; (*5*) other illnesses—the remaining illnesses of headache and/or eye irritation alone, the same accompanying miscellaneous symptoms, or with miscellaneous symptoms alone.

The frequency of the 14 acute symptoms occurring singly or in combination in each person on each day was derived and analyzed. Most of the symptoms occurred either singly, in pairs, or in triplets (52,531 person-days; 86.5 per cent). Only 6,682 symptoms (11.3 per cent) appeared in quadruplets, or quintuplets, and only 1,317 appeared in combinations of more than 5 symptoms. Most symptoms occurred most frequently alone; the major exception was "common cold," which was reported without other accompanying symptoms only one fourth of the time. Of the 33,064 person-days of paired and triplet symptoms, the number of combinations of respiratory symptom person-days accounted for 83.8 per cent of all the paired symptom or triplet symptom person-days. Combinations of headache and eye irritation and anything other than "common cold" accounted for a total of 4.7 per cent of all person-days. Gastrointestinal symptoms accounted for a total of 3.6 per cent.

In the combinations of 4 and 5 symptoms, the "common cold" syndrome (combination of cojoint symptoms) accounted for 97.5 per cent of the possible person-days. In the final analyses, only 1.78 per cent of all combinations of person-days were accounted for by gastrointestinal symptoms, which were made up of one or more of the gastrointestinal symptoms with any of the other nonrespiratory symptoms. Rhinitis was reported only 10.4 per cent of the time without "common cold." In addition, 75 per cent of reports of sore throat occurred with cough, and 45 per cent of reports of cough occurred with sore throat. "Common cold" occurred without rhinitis 11 per cent of the time. Only 7.6 per cent of all person-days of "common cold" com-

TABLE 2

ILLNESS EPISODES BY TYPE AND AVERAGE DURATION

Illness Types	Episodes		Person-Days		Average Duration
	(no.)	*(%)*	*(no.)*	*(%)*	*(days)*
Total	8,885	100.0	61,893	100.0	7.0
All respiratory	5,311	59.8	49,911	80.6	9.4
"Common cold"	3,971	44.7	41,333	66.8	10.4
Rhinitis	576	6.5	4,255	6.9	7.4
Cough and/or sore throat	764	8.6	4,323	7.0	5.7
Nonrespiratory	3,574	40.2	11,982	19.4	3.4
Gastrointestinal	1,385	15.6	4,558	7.4	3.3
Other	2,189	24.6	7,424	12.0	3.4

binations included any gastrointestinal symptoms; the percentage increased as the number of symptoms increased.

Thus, the "common cold" syndrome formed combinations with the other symptoms and, as such, accounted for almost all person-days of syndromes. On the rare occasions in which rhinitis did not occur with a "common cold," it occurred in combination with headache or eye irritation or some of the miscellaneous symptoms to form a syndrome that might be considered an allergic reaction. In addition, the contribution of miscellaneous symptoms to "common cold" combinations appeared to be minimal.

The delineation of an "illness" (a syndrome episode) was based on the daily reports of the 14 symptoms (table 1) for each panel member and proceeded from the examination of symptoms (above). First, the sequence of occurrence, the commonly occurring combinations, and the typical patterns of symptoms reported were examined.

Second, examination of the sequence of symptom occurrence led to the following operational definition of an episode of illness. An illness onset was preceded by a minimum of 3 days of no reported symptoms, and an illness terminated when 3 or more successive symptom-free days followed a day with one or more reported symptoms.

Almost all (96 per cent) of the illnesses studied were of at least 3 days' duration. This was not true of the relatively few nonrespiratory illnesses, 69 per cent of which lasted less than three days. Although illnesses could include one or 2 days of missing information by the definition used, less than one per cent of all person-days was included in illnesses that lacked symptom information. Because classification of categories of illness was mutually exclusive and hierarchic in nature, the joint occurrence of two or more illnesses, as defined above, could occur.

To ensure that the minimal definition of at least 3 days of symptoms for an illness did not create "illnesses" that were actually more than one illness, the distribution within each illness was examined. There was no evidence that an illness, by the definition used, could be considered as 2 or more illnesses, although this did not guarantee that a long illness was not actually more than one illness. As confirmed in further examination, the average interval between illnesses was 36 days. Illnesses that lasted more than 30 days were analyzed separately, as described below. When a subject responded to a given symptom or symptoms almost all of the time, this symptom was excluded from the record in the process of illness determination.

Some examples of illness might clarify their delineation. First, a 6-day episode of "common cold" (with or without rhinitis) included at least 5 days of that "symptom," usually with 3 to 4 days of rhinitis reported, and possibly with

TABLE 3

ILLNESS EPISODES BY TYPE AND AVERAGE DURATION, WITH SYMPTOM COMBINATIONS INDICATED

"Common Cold"* Episodes

Illnesses and their Symptoms	No. of Episodes	No. of Days	Average Duration *(days)*	Average No. of Symptoms
"Common cold" only	975	6,605	6.8	2.1
"Cold" + headache and/or eye irritation	235	2,202	9.4	3.3
"Cold" + gastrointestinal symptoms	84	728	8.7	3.8
"Cold" + headache and/or eye irritation + gastrointestinal symptoms	97	1,448	14.9	5.6
"Cold" + cough and/or sore throat	1,536	14,057	9.2	3.3
"Cold" + cough and/or sore throat + headache and/or eye irritation	584	7,269	12.4	5.2
"Cold" + cough and/or sore throat + gastrointestinal symptoms	189	2,667	14.1	5.0
"Cold" + cough and/or sore throat + gastrointestinal symptoms + headache and/or eye irritation	271	6,357	23.5	7.5
Total	3,971	41,333	10.4	

*With or without rhinitis.

TABLE 4

ILLNESS EPISODES BY TYPE AND AVERAGE DURATION, WITH SYMPTOM COMBINATIONS INDICATED

Rhinitis Without Mention of "Common Cold"

Illnesses and their Symptoms	No. of Episodes	No. of Days	Average Duration *(days)*	Average No. of Symptoms
Rhinitis alone	356	2,096	5.9	1.1
Rhinitis + headache and/or eye irritation	151	1,342	8.9	2.4
Rhinitis + gastrointestinal symptoms	30	194	6.5	2.5
Rhinitis + headache and/or eye irritation + gastrointestinal symptoms	50	606	12.1	4.3
Rhinitis + cough and/or sore throat	66	457	6.9	2.3
Rhinitis + cough and/or sore throat + headache and/or eye irritation	40	467	11.7	4.0
Rhinitis + cough and/or sore throat + gastrointestinal symptoms	14	85	6.1	3.9
Rhinitis + cough and/or sore throat + gastrointestinal symptoms + headache and/or eye irritation	20	350	17.5	6.1
Total	727	5,597	7.7	

one or 2 days of one of the other miscellaneous symptoms. If headache and/or eye irritation symptoms occurred in this episode (for 1 to 2 days, probably), the episode was classified as "'cold' with headache or eye irritation." The same classification was used if cough and/or sore throat or gastrointestinal symptoms were reported. Combinations of these latter 3 sets of symptoms would also be listed. Second, a rhinitis-type illness (without report of "common cold") would follow the same pattern. Third, a gastrointestinal-type illness would have at least one gastrointestinal symptom reported, with or without any of the miscellaneous symptoms. The miscellaneous symptoms were myalgia, subjective fever, cervical lymphadenopathy, and whistling and wheezing on breathing.

In classifying illnesses into categories, the presence or absence of the miscellaneous symptoms, those of low frequency, was ignored. The frequency of the various combinations, the number of person-days involved in each illness, and the average number of symptoms included in each category are summarized in tables 2 through 6.

Because "common cold" and rhinitis overlapped approximately 90 per cent of the time, a "common cold" was assumed in each case to be the primary illness. Rhinitis without mention of cold was then analyzed separately. "Cough and/or sore throat" was usually considered as one or the other or both, because both were of low frequency; headache and/or eye irritation combinations were considered similarly. Rhinitis with headache or eye irritation alone was considered to be an allergic type of reaction. The gastrointestinal symptoms considered were: vomiting, nausea, diarrhea, and abdominal cramps. A gastrointestinal illness was defined as the presence of at least one of these, but did not further distinguish between them.

These illnesses were assumed to be largely infectious in nature, and the following definitions were used throughout. For the at-risk population, number of person-years of known exposure was used. The incidence (first reported day of a symptom) was considered to be the date of onset of that illness. Duration of illness was considered to be the reported length of the illness, and severity was defined as the proportion of time a person was ill. The interdependent combination of duration and number of symptoms present in specific illnesses was also used as a measure of severity.

Results

Types of illness: Illness experience in this population was summarized under 5 broad categories of illness based on symptom combinations. Three of these 5 categories were respiratory and accounted for 60 per cent of the episodes and 81 per cent of the person-days of illness. Of the respiratory illnesses, "common cold" illnesses accounted for 73 per cent of the episodes and 81 per cent of

TABLE 5

ILLNESS EPISODES BY TYPE AND AVERAGE DURATION, WITH SYMPTOM COMBINATIONS INDICATED

Cough and/or Sore Throat

Illnesses and their Symptoms	No. of Episodes		No. of Days		Average Duration *(days)*	Average No. of Symptoms
Cough alone	224		1,276		5.7	
Sore throat alone	237	493	795	2,295	3.4	1.2
Cough and sore throat	32		224		7.0	
Cough + headache and/or eye irritation	46		335		7.7	
Sore throat + headache and/or eye irritation	66	140	378	941	5.7	2.6
Cough and sore throat + headache and/or eye irritation	28		208		7.4	
Cough + gastrointestinal symptoms	33		210		6.4	
Sore throat + gastrointestinal symptoms	24	68	124	452	5.2	2.9
Cough and sore throat + gastrointestinal symptoms	11		118		10.7	
Cough + gastrointestinal symptoms + headache and/or eye irritation	15		128		8.5	
Sore throat + gastrointestinal symptoms + headache and/or eye irritation	37	63	377	635	10.2	4.6
Cough and sore throat + gastrointestinal symptoms + headache and/or eye irritation	11		130		11.8	
Total	764		4,323		5.7	

the person-days. The average respiratory illness lasted 9.4 days, compared to 3.4 days for an average nonrespiratory illness.

With each category, the specific illnesses differed in frequency, duration, and the number of symptoms included (tables 2 to 6). Most of the illnesses included several symptoms and only a few, such as headache and eye irritation, occurred alone.

Of the illnesses that lasted 3 or more days (65 per cent of all illnesses), 81 per cent were respiratory. In a viral-serologic study performed in an overlapping population at approximately the same time (8), the proportion was 78 per cent. More than 50 per cent of the illnesses were associated with multiple symptoms and included "common cold" (or coryza), rhinitis, and sore throat and/or cough (table 7).

Most "colds" are thought to be afebrile.

TABLE 6

ILLNESS EPISODES BY TYPE AND AVERAGE DURATION, WITH SYMPTOM COMBINATIONS INDICATED

Gastrointestinal and Other Symptoms

Illnesses and their Symptoms	No. of Episodes	No. of Days	Average Duration *(days)*	Average No. of Symptoms
Gastrointestinal illnesses	1,385	4,558	3.3	
Gastrointestinal symptoms alone	956	2,375	2.5	1.6
Gastrointestinal symptoms + headache and/or eye irritation	429	2,183	5.1	2.9
Other episodes	2,038	6,082	3.0	
Headache and/or eye irritation alone	1,661	4,719	2.8	1.1
Headache and/or eye irritation + miscellaneous symptoms	111	562	5.1	2.2
Miscellaneous symptoms alone	266	801	3.0	1.0

TABLE 7

RELATIVE FREQUENCY OF RESPIRATORY SYMPTOMS IN RESPIRATORY ILLNESSES IN THIS AND 2 OTHER STUDIES

Age (years)	Total	Coryza* Alone	Sore Throat† and/or Cough Alone	Coryza and Cough/ Sore Throat	None of These**
All ages					
CFIS††	100	26.1	13.7	52.8	7.4
Dingle et al (9)	100	28.9	12.0	58.5	0.6
Buck (3)	100	26.0	12.0	62.0	—
6					
CFIS	100	29.4	8.5	54.2	7.9
Dingle et al (9)	100	35.7	7.5	56.5	0.3
Buck (3)	100	24.0	8.0	68.0	—
6–18					
CFIS	100	23.2	14.8	54.7	7.3
Dingle et al (9)	100	30.7	13.1	55.8	0.4
Buck (3)	100	29.0	12.0	59.0	—
18					
CFIS	100	26.4	16.0	50.4	7.2
Dingle et al (9)	100	18.2	17.2	63.5	1.0
Buck (3)	100	26.0	15.0	59.0	—

*In the Cornell Family Illness Study, coryza was defined as "cold" with or without rhinitis.

†This included hoarseness in the study by Dingle and co-workers (9).

**Included "rhinitis alone," i.e., without "cold," in the Cornell Family Illness Study.

††CFIS is the Cornell Family Illness Study, the present study.

In this study, 82 per cent of persons reporting a "common cold" did not report fever, as in other reports (5, 8, 9, 15). Most of the "common colds" studied were reported to start with either a "common cold" or rhinitis, but, on occasion, sore throat or cough also occurred as a first symptom. These results differed somewhat from other reports of experimental colds (15) in which headache, sore throat, and/or sneezing were reported first. In any case, different types of "common cold" could not be differentiated on the basis of the first symptom. Neither cough nor sore throat was reported as often as "common colds" and, when reported, these 2 symptoms were most often considered by the respondent to be part of a "common cold."

Incidence: The incidence of the "common cold" was 3.4 per person per year. The incidence of all respiratory illnesses was 4.6 per person per year. Gastrointestinal illnesses were reported at a rate of 1.2 per person-year. For all illnesses, the rate was 7.7 per person-year.

The rate decreased somewhat with age (table 8), but the rate for subjects less than 5 years old was approximately twice the rates for the older subjects. The Virus Watch Study (8), which was conducted in part of the same area as the present study at approximately the same time, reported slightly lower figures than those of the present study. The attack rate in children for respiratory illnesses was 5.5 per person per year in their study, compared to 6.2 per person per year in this report.

Females had higher total illness rates than males (8.5 compared to 6.6 per person per year, respectively, for all illnesses). Whites had higher rates than Negroes, who, in turn, had higher rates than Puerto Ricans (9.0, 7.0, and 6.3 per person per year, respectively); because the white subjects studied had fewer children, this difference would have been larger if it had been age-

adjusted. The ethnic group (race) specific illness rates for "common cold" were quite similar, but the rates for other illnesses, especially the shorter episodes of fewer symptoms varied as discussed.

Because the census tracts included in this study represented different housing, in part, incidences among the 3 tracts were compared. For all illnesses, the rate of illness increased from the lowest to the highest socioeconomic stratum, or from 6.6 to 9.0 illnesses per person per year. As with the race-specific rates, the socioeconomic status rates differed primarily for the shorter illnesses with fewer symptoms (table 8). It was these types of illness, rather than "common cold," for which socioeconomic status differences in perception and reporting occurred, as often noted; the higher socioeconomic status groups perceived and reported more "minor" symptoms. This study also confirmed the usually observed seasonal curve of illness.

Discussion

Most of the studies reviewed differed in criteria for intervals between new illnesses and infections, definitions of what constituted an illness, type of populations studied, data collection techniques, and diagnostic tools used. Yet, it was not greatly surprising to find similar results where comparisons could be made (19). This suggests that minor illness experiences in different populations in developed urban areas, regardless of how they are measured or defined, are similar.

Comparing the present observations with those of others (3, 9), the proportion of illnesses in which specific respiratory symptoms were present was examined by age (table 7). The results of the 3 studies were similar, although illnesses with all of the symptoms considered occurred proportionately less often in this study and more often in that of Buck (3). To facilitate the comparison, rhinitis was considered to be the same as coryza, and respiratory illnesses with nonupper respiratory illness symptoms were not included. The proportion of respiratory illnesses with sore throat and cough increased with age in all 3 studies; "coryza alone" and coryza and cough and/or sore throat showed no specific trend for subjects more than 5 years old.

The incidence of "common cold" re-

TABLE 8

ATTACK RATE OF ILLNESSES PER PERSON-YEAR BY SEX, AGE AND BY RACE BY BROAD TYPE OF ILLNESS

	Person-years of Exposure	"Common Cold"		Rhinitis		Cough and/or Sore Throat		Gastro-intestinal Illnesses		Others		Total
		(no.)	(AR)*	(no.)	(AR)	(no.)	(AR)	(no.)	(AR)	(no.)	(AR)	(AR)
Sex												
Male	562.9	1,809	3.2	253	0.4	331	0.6	559	1.0	768	1.4	6.6
Female	605.6	2,167	3.6	324	0.5	433	0.7	826	1.4	1,421	2.3	8.5
Age, years												
0–4	138.8	843	6.1	104	0.7	65	0.5	118	0.9	81	0.6	8.8
5–9	148.2	570	3.8	63	0.4	140	0.9	129	0.9	105	0.7	6.7
10–19	293.0	773	2.6	107	0.4	144	0.5	273	0.9	271	0.9	5.3
20–29	117.9	374	3.2	40	0.3	84	0.7	167	1.4	336	2.8	8.4
30–39	172.4	609	3.5	83	0.5	137	0.8	265	1.5	502	2.9	9.2
40–49	148.5	395	2.7	85	0.6	91	0.6	217	1.5	439	3.0	8.4
50–59	75.8	214	2.8	52	0.7	45	0.6	113	1.5	244	3.2	8.8
60+	74.0	192	2.6	43	0.6	58	0.8	103	1.4	211	2.9	8.3
Race												
White	544.0	1,821	3.3	355	0.7	430	0.8	921	1.7	1,292	2.4	9.0
Negro	189.6	697	3.7	74	0.4	121	0.6	161	0.8	288	1.5	7.0
Puerto Rican	434.9	1,462	3.4	148	0.3	213	0.5	303	0.7	609	1.4	6.3
Total	1,168.5	3,970	3.4	577	0.5	764	0.7	1,385	1.2	2,189	1.9	7.7

*AR = attack rate per person-year.

ported here agrees closely with that reported by other observers (1, 3, 4, 9). The incidence of all respiratory illness was slightly lower than that reported by Brimblecombe and co-workers (4) and that reported by Dingle and associates (9) but was slightly higher than that found by Fox and co-workers (8). These minor differences might be due to different demographic characteristics of the populations studied. Differences by age, race, and sex, however, were similar to those found in the other studies.

In the Cornell Family Illness Study population, the over-all rate of 7.7 illnesses per person per year was higher than commonly seen or reported. This might have been due to the high frequency of observation in this study compared to others; monthly or occasional interviews probably miss a fair proportion of minor illnesses.

The similarity in illness patterns might also be due to the degree of diagnostic uncertainty (6, 15), which precludes use of, or dependence on, diagnostic techniques, and which minimizes the differences in form of reporting and interviewer and interviewee characteristics. Response bias obviously does occur; it usually clouds the exact onset and exact pattern sequence of symptoms. Uusually, neither the illness nor, generally, the symptoms is missed, as long as the time of reporting is close to the time of the event. Most observers are aware of this latter fact, and all the studies herein discussed depended on frequent reporting.

Minor differences in delineation of clinical syndromes presented only minor problems of comparison; all appeared to have similar degrees of certainty. The symptoms corresponding to the various criteria of illness overlapped to a large extent, and actual illnesses were similar in symptoms from one study to another. From one illness to another, symptom patterns did seem to distinguish between different types of illness. Thus, although differences did exist between studies in discussing patterns of illness, there was more similarity than disparity in the results.

Because of the nature of the data collection, there were occasions on which the exact onset or termination of an illness was not known (e.g., when records were missing). More than 70 per cent of illnesses had both known onset and known termination; more than 80 per cent had known onset. To determine the effect of this on calculated duration of illness, illnesses with known onset and/or termination were compared in duration (by specific type of illness) with illnesses without known onset and/or termination (onset and termination was taken as the first and last day of information). It was found that respiratory illnesses for which exact information on onset and duration was not known differed by only 0.5 day in duration. When compared to illnesses with complete information, the bias caused by the small number of illnesses that lacked this information was small. The illnesses were therefore analyzed with the others to ensure the use of as much of the data as possible.

RESUMEN

La salud y el medio ambiente urbano. XI. Incidencia y molestias de enfermedades menores en una población sana: métodos, síntomes e incidencia

Un estudio longitudinal de un grupo de residentes de Manhattan fué llevado a cabo en el "Cornell Family Illness Study." Observaciones semanales de 14 síntomas agudos fueron hechas por entrevista. Los síntomas fueron combinados en síndromes por ocurrencia, y episodios de síndromes fueron considerados como enfermedades. El análisis de la enfermedad en esta población mostró resultados similares en incidencia, frecuencia y síntomas a aquellos de un número de estudios similares, a pesar de las diferencias en definiciones y métodos.

Los 1,707 sujetos del estudio dieron 1,168 personas-año de información. Las enfermedades respiratorias fueron un 60 por ciento de todas las otras enfermedades, y 81 por ciento de las personas-días de la enfermedad. La enfermedad respiratoria promedio duró 9.4 días (6 días más que la enfermedad promedio no respiratoria).

La incidencia del "resfriado común" fué de 3.4 por persona por año; la incidencia de todas las enfermedades respiratorias fué de 4.6 por person apor año. La proporción disminuyó con la

edad, y las personas menores de 5 años de edad tuvieron una proporción doble de aquella en las personas mayores. La proporción en las mujeres fué mayor que aquella en los hombres, y la proporción en los blancos fué mayor que aquella en los negros o los puertoriqueños.

RESUME

Environnement urbain et santé. XI. Incidence et importance des affections mineures dans une population saine. Méthodes, symptômes et incidence

Une étude longitudinale a été menée dans un groupe de résidents de Manhattan, dans le cadre de la Cornell Family Illness Study (Enquête Familiale sur la Morbidité de l'Université Cornell). On a procédé à des observations hebdomadaires de 14 symptômes aigus, au moyen d'entretiens. Les symptômes ont été combinés en syndrômes, en se basant sur leur apparition, et les épisodes de synfrômes ont été considérés comme des maladies. L'analyse des maladies dans cette population a fourni des résultats semblables à ceux enregistrés dans un certain nombre d'études similaires, en ce qui concerne l'incidence, la fréquence, et les symptômes constatés, et ceci malgré des différences dans les définitions et les méthodes utilisées.

Les 1.707 individus compris dans cette étude représentaient 1.168 personnes–années d'information. Les affections respiratoires ont représenté 60 pour cent de toutes les maladies, et 81 pour cent des personnes–jours de maladie. La maladie respiratoire a duré en moyenne 9.4 jours (6 jours de plus que la moyenne des maladies non respiratoires).

L'incidence du rhume (common cold) a été de 3.4 personnes par an. L'incidence de toutes les affections respiratoires s'est élevée à 4.6 personnes par an. Ce taux a diminué avec l'âge, et les individus âgés de moins de 5 ans ont présenté un taux deux fois plus élevé que celui constaté chez les personnes plus âgées. Le taux d'incidence pour les femmes était plus élevé que pour les hommes, et le taux chez les blancs était plus grand que celui noté chez les noirs ou chez les Porto–Ricains.

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