Holiday travel and morbidity reported to general practitioners

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SUMMARY

Aim. *This study set out to explore the influence that holiday travel might have on the rate at which new episodes of illness are reported to general practitioners.*

Method. *The study was carried out in a semi-rural practice of five doctors in Wiltshire in 1989. Details of patients' holiday travel were determined by postal questionnaire. Sociodemographic and clinical data were obtained from the patients' medical records.*

Results. *The response rate to the questionnaire was 85%. The study subjects were divided into those who had taken their holiday abroad (n = 643), those who had taken their holiday in the United Kingdom (n = 973), and those who had taken no holiday (n = 668) during the study year. Interim assessment of clinical results revealed no changes in morbidity indices in relation to holiday intervals in any of the groups except for an apparent rise in the number of new episodes of illness presented in the month before departure by those about to go abroad. Further analysis showed that this was due to a significant 112% increase in the number of episodes of illness presented by this study group in the week before they left home.*

Conclusion. *This study suggests that the present focus on the supposed excess morbidity of patients returning from foreign holidays is misplaced.*

Keywords: holidays; patient reported morbidity; consultation rates.

Introduction

THREE out of every five Britons take at least one holiday of four nights or more away from home every year.[1] The precise statistics have varied little during the last two decades: an annual vacation is a stable and established custom. However, the proportion of holidaymakers who travel abroad continues to increase. In 1970 10% of the British adult population took a foreign holiday[2] but this had trebled to 29% by 1989.[1]

Holidays have long been seen as a period for rest, recreation, and change but they are also a time when family members are thrown together in constant daily proximity that can heighten tensions and conflicts.[3] People also find themselves in unfamiliar surroundings, and changes in daily routine, even if they do not require adjustment of the body clock, can test the reserves of physical vigour and emotional tolerance. There are, therefore, various reasons why the processes of taking a holiday might impinge on the work of all family doctors. Patients cannot see their own general practitioner when they are away from the practice area, but do they consult more readily before leaving home or present more illness on their return? Minor and otherwise tolerable symptoms experienced before departure might provoke anxiety if they are taken to be premonitory of serious disease, while some patients may use such symptoms as a pretext to consult their doctor on other matters pertinent to their forthcoming vacation such as advice on preventive or symptomatic measures.

However, the few publications on the topic of holidays and use of health services all focus on the expected illnesses that may be reported to doctors in the days or weeks after people return home, especially from abroad. Clinical epidemiologists stress, in particular, the potential impact and dangers of imported diseases.[4-8] The embryonic science of emporiatrics (Greek *emporos* — a shipboard traveller; *iatrike* — medicine) appears to be based entirely on data derived from hospital medicine.[9] Holidays do not seem to have featured on the list of so-called life events that may affect vulnerability to illness.[10,11]

The aim of this study was to explore the influence of holiday travel on reported morbidity rates in general practice and the possible influence of travel destination.

Method

The study practice is semi-rural and has 11 500 patients registered with five doctors who practise in partnership. Care is organized on a personal list basis and patients are seen mostly by appointment. At the time of the study four of the doctors had established lists and one partner was building a new list. Virtually all the patients are Caucasian. The age distribution of the patients is close to the national average;[12] 13.5% of the patients are aged 65 years or over.

Names and addresses of registered women patients from the four established lists were obtained from the practice's computerized age–sex registers in alphabetic order and in age groups 20–29, 30–39, 40–49, 50–59 and 60–69 years. Forty per cent of each of the doctor/age subgroups were randomly selected. The selected women patients were taken to represent households.

Following a small pilot survey, a questionnaire was developed to ascertain main holiday dates and destinations, for 1989, of each of the members of recruited households. The questionnaire took the form of a letter explaining the purpose of the study and a table to be completed by respondents detailing holidays taken by all members of the household.

The questionnaire and a stamped addressed envelope were posted to each recruited household between 1 March 1990 and 31 May 1990. If no reply had been received after six weeks a further questionnaire and a reminder letter were posted with a second stamped addressed envelope.

A holiday was defined as a minimum of five consecutive nights away from home. Holidays abroad were defined as outside the UK; the Republic of Ireland and the Channel Isles were considered to be abroad if respondents entered these countries as their travel destination. Patients were asked to provide details only for their longest holiday in 1989.

The day on which subjects left home to go on holiday was defined as day –0; the day of returning home was defined as day +0. If patients had not taken a holiday during 1989 they were allotted a 'surrogate' holiday by randomized pairing with subjects who had been on holiday. Clinical data were collected for each recruited patient for a 364 day period defined as days (–181 to –0) to (+0 to +181) inclusive, that is for an annual sampling interval centred on their holiday or 'surrogate' holiday.

The manual general practice records of all recruited patients of

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the practice were available. A system of cross-checking with lists of records being recalled by the family health services authority prevented loss of potential clinical material before retrieval. Study data were recorded manually on purpose-designed forms which linked demographic, holiday and clinical data for each individual. The data were grouped according to holiday destination: abroad, UK and none.

Analysis

The following data were collated for each holiday group: total number of study subjects; number of men, women, and children (under 16 years of age); ages of study subjects; marital status of adults (16 years or older); doctor with whom registered; and years registered with practice. The following clinical measures were recorded for the sampling interval for each individual: number of new episodes of illness presented; number of consultations per new episode; number of follow-up consultations for chronic disease; number of out-of-hours consultations (outwith 08.00–18.00 hours Monday to Friday); total number of consultations; and number of courses of medication, number of clinical investigations and number of referrals to medical specialists for each new episode of illness. Clinical encounters involving only preventive measures such as immunizations for foreign travel were not included as new episodes of illness.

Differences between the groups with respect to sex, age, marital status, doctor with whom registered, and years registered with the practice were tested using the chi square or Mann-Whitney *U* tests as appropriate. Differences between the groups with respect to clinical measures were also tested by chi square or Mann-Whitney *U* tests as appropriate. Confidence intervals were calculated for medians.

For differences in the rates of presentation of new episodes of illness in each of the defined time intervals chi square tests were based on the null hypothesis that for each of the patient subgroups patients would present equal numbers of episodes of new illness in each time 'cell'.

Results

From the first mailing to 1300 households 990 replies were received (76.2% response rate). The reminder was sent to the 291 households from whom there was no reply and no indication that name and address were not correct — 93 replies were received (32.0% response rate). Overall, 28 letters were returned marked 'gone away' or 'no longer at this address'. Therefore replies were received from 1083 of 1272 possible participating households (85.1% response rate).

There was no indication that non-respondents were different from respondents with respect to address in practice area, age group of female head of household or doctor with whom she was registered.

Only 14 patients aged 65 years or over were reported as having had a holiday abroad in 1989. This was considered an insufficient number to form a discrete study subgroup. Therefore all patients aged 65 years or older were excluded from further analyses.

Characteristics of study groups

A total of 2284 subjects were included in the analysis: 643 (28.2%) had had a holiday abroad in 1989 (288 male and 355 female subjects), 973 (42.6%) had had a holiday in the UK (459 male and 514 female) and 668 (29.2%) had had no holiday (324 male and 344 female). There were no significant differences in the sex proportions in the three groups.

The median age of the group who had travelled abroad was 39 years (95% confidence interval 37 to 40 years) while that of the group who had had a holiday in the UK was 33 years (95% CI 32 to 35 years) and the group who had had no holiday 35 years (95% CI 32 to 37 years). There were significantly more children aged under 16 years in the group who had taken a holiday in the UK (28.9%) than in the group who had travelled abroad (23.8%) or who had had no holiday (21.6%) ($\chi^2 = 12.3$, 2 degrees of freedom, $P<0.01$).

Comparison of the marital status of the patients aged 16 years or over in each of the three study groups revealed that there were significantly more individuals who had never been married in the group who had had no holiday than in the groups who had had a holiday abroad or in the UK (22.3% versus 13.5% and 13.9%, respectively; $\chi^2 = 19.4$, 2 df; $P<0.001$). There were also significantly more individuals who were divorced or widowed in the group who had had no holiday (7.4% versus 2.2% and 2.0%; $\chi^2 = 25.8$, 2 df, $P<0.001$).

The patients who had taken no holiday had been registered with the practice significantly longer (median 15 years, 95% CI 15 to 17 years) than those who had taken UK holidays (12 years, 95% CI 12 to 13 years) ($U = 3.5$, $P<0.001$) and than those who had taken foreign holidays (12 years, 95% CI 10 to 13 years) ($U = 4.8$, $P<0.001$).

The group travelling abroad spent a median of 14 days away from home (interquartile range 10–16 days) compared with seven days (7–14 days) for the group taking their holiday in the UK. The dates of departure for these two groups are shown in Table 1. The peak season for holidays extended from May to September inclusive in both groups; the peak month was August for both groups.

Clinical data

Interim assessment of the clinical results was performed when data from half of each of the respective study households recruited had been collected. The number of new episodes of illness presented by the study groups in each of six successive four-week intervals before and after the holiday was recorded (Table 2). There was no evidence of significant variation except during the pre-holiday period for the foreign holiday cohort. In this group there were two four-week intervals in which the number of episodes presented were materially different to the mean (34.3 episodes) — there were fewer episodes than expected in the four-week interval beginning 20 weeks before leaving home and more episodes than expected in the last month before the holiday. More detailed analysis of the latter finding showed that

Table 1. Dates of departure for the groups taking their holiday abroad or in the UK.

	% of individuals	
Departure in:	Holiday abroad ($n = 643$)	Holiday in UK ($n = 973$)
January	*2.8*	*0*
February	*3.6*	*0.5*
March	*3.3*	*0.4*
April	*4.5*	*1.6*
May	*10.6*	*5.8*
June	*14.0*	*15.8*
July	*16.8*	*27.9*
August	*18.0*	*35.3*
September	*14.9*	*8.3*
October	*6.4*	*3.7*
November	*2.0*	*0.2*
December	*3.1*	*0.4*

n = total number of individuals in group.

Table 2. New episodes of illness presented by 'interim' study groups in six four-week intervals before and after holiday.

Four-week interval	Number of new episodes of illness (per 1000 patients) Holiday abroad (*n* = 336)	Holiday in UK (*n* = 435)	No holiday (*n* = 340)
Before holiday			
–6	35 (104)	49 (113)	40 (118)
–5	19 (57)*	48 (110)	40 (118)
–4	33 (98)	66 (152)	42 (124)
–3	29 (86)	69 (159)	51 (150)
–2	43 (128)	57 (131)	58 (171)
–1	47 (140)*	51 (117)	38 (112)
Total	206 (613)	340 (782)	269 (791)
After holiday			
+1	37 (110)	63 (145)	39 (115)
+2	31 (92)	58 (133)	29 (85)
+3	38 (113)	53 (122)	48 (141)
+4	31 (92)	78 (179)	53 (156)
+5	30 (89)	48 (110)	50 (147)
+6	33 (98)	57 (131)	43 (126)
Total	200 (595)	357 (821)	262 (771)

n = total number of individuals in group. *χ^2= 14.6, 5 degrees of freedom, $P<0.05$.

there was a larger than expected number of episodes presented by those going on foreign holidays during the week before departure (Table 3).

It was also noted that the total number of new episodes of illness, per 1000 patients, presented by those who took holidays in the UK and by those who did not take a holiday was 32.7% and 29.3% higher, respectively, than the total number presented by those who took foreign holidays (Table 2).

There were no apparent sequential differences in any of the groups with respect to any of the other clinical parameters.

The results of the final assessment, concentrating on the few weeks before and after the holiday confirmed the results of the preliminary assessment (Table 4). For patients who took a foreign holiday there was a significant 112% increase in the number of episodes of illness presented in the week before they left compared with the mean for the previous five weeks. This degree of change in reported morbidity before the holiday was not seen in the other two groups where there were no significant findings. There where no significant changes in weekly rates of reported morbidity in any of the groups after returning home from holiday.

Table 3. New episodes of illness presented by 'interim' study groups in the six weeks before holiday.

Weeks before holiday	Number of new episodes of illness (per 1000 patients) Holiday abroad (*n* = 336)	Holiday in UK (*n* = 435)	No holiday (*n* = 340)
–6	12 (36)	12 (28)	11 (32)
–5	10 (30)	12 (28)	16 (47)
–4	9 (27)	15 (34)	12 (35)
–3	10 (30)	10 (23)	11 (32)
–2	7 (21)	12 (28)	9 (26)
–1	21 (62)	14 (32)	6 (18)

n = total number of individuals in group.

Table 4. New episodes of illness presented by the study groups in the six weeks before and after holiday.

	Number of new episodes of illness (per 1000 patients) Holiday abroad (*n* = 643)	Holiday in UK (*n* = 973)	No holiday (*n* = 668)
Weeks before holiday			
–6	16 (25)	25 (26)	21 (31)
–5	17 (26)	28 (29)	28 (42)
–4	20 (31)	40 (41)	24 (36)
–3	16 (25)	26 (27)	28 (42)
–2	16 (25)	28 (29)	22 (33)
–1	36 (56)**	28 (29)	13 (19)
Total	121 (188)	175 (180)	136 (204)
Weeks after holiday			
+1	24 (37)	35 (36)	21 (31)
+2	14 (22)	42 (43)	18 (27)
+3	15 (23)	28 (29)	21 (31)
+4	14 (22)	27 (28)	11 (16)
+5	25 (23)	29 (30)	18 (27)
+6	12 (19)	27 (28)	14 (21)
Total	94 (146)	188 (193)	103 (154)

n = total number of individuals in group. **χ^2= 15.5, 5 degrees of freedom, $P<0.01$.

Discussion

The processes that prompt patients to consult their general practitioner remain enigmatic. It is clear, though, that not all sick people consult a doctor;[13] the 'symptom iceberg' is well described.[14] On the other hand not all those who consult their doctor are actually ill at the time.[15] Some so-called 'patients' will be those who fear illness at an inconvenient or difficult time and the results of this study reinforce this thesis. People about to go on a foreign holiday appear to report a newly apparent episode of illness to their general practitioners twice as often as expected during the week prior to their departure. These patients are, perhaps, afraid that they will become ill while they are away. It is also possible that these individuals develop more episodes of ill health as a result of anxiety in the weeks before departure. This second explanation seems less plausible, however, now that foreign travel has become so commonplace. Only a larger study investigating the nature of pre-holiday morbidity could determine which of the two possible mechanisms is the more important.

There is no evidence from this study of an increase in the incidence of reported illness in the week immediately after returning from holiday, even in those who have been abroad. Perhaps those episodes of illness which result from foreign travel, and whose management is the present focus of emporiatrics,[4-8] are not apparent because they are accommodated among an otherwise lower frequency of illness presented during the same period. After all one might expect that holidays would be beneficial to health, at least in the short term. Once again there is a need for data on the diagnostic spectrum of the reported morbidity.

Clearly this study should be considered to be a pilot project, but it is probably representative of general experience. The proportion of study patients who went on holiday during the study year (71%) matches that reported for 1989 by the British Tourist Authority as does the proportion going abroad (28% versus 29%, respectively).[1] The peak holiday seasons found here are also comparable with the national statistics.[1] The sociodemographic discrepancies between the three study groups — for instance

those who took no holiday were more likely never to have married, to be widowed or to be divorced — are not likely to confound the study conclusions which are based on longitudinal comparisons within each respective cohort. In fact the study provides further evidence that social and economic influences govern recreational activities. We may also have discovered new evidence that socioeconomic factors influence morbidity. The patients who took foreign holidays presented, overall, about 25% fewer episodes of new illnesses than did the remaining patients. On average, foreign holidays are twice the cost of UK vacations of equivalent length.[1] The ability to afford foreign travel might be the basis, therefore, of an 'affluence' or 'inverse deprivation' index, having the power to predict clinical demand. This possibility is being further investigated.

It seems clear from this study that the present emphasis of emporiatrics does not correspond with the experience of general practice in the UK. Family doctors need to be more alert to the fact that the consulting threshold of some of their patients will be lowered in advance of a foreign holiday. This influence on workload will be especially relevant in the months of May to September when 74% of holidaymakers travelling abroad start their vacations. This study uncovers yet another example of how clinical workload in general practice is determined by sociological phenomena and by patients' perceptions of health as much as by the true incidence of disease.

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