The effect of health status on patients’ satisfaction with out-of-hours care provided by a family doctor co-operative
LG Glynn, M Byrne, J Newell and AW Murphy


**Background.** Systems for providing primary care outside normal hours have changed significantly in Europe over the last 20 years. The impetus for this change has come almost entirely from the medical profession, and it is important to consider the patients’ perspective. Although patient’s satisfaction with out-of-hours care has been studied extensively, the effect of patient’s health status on satisfaction level has not been examined previously.

**Objectives.** The primary objective of this study was to investigate whether health status has an influence on patient satisfaction with out-of-hours care provided by a family doctor co-operative. The secondary objective of this study was to investigate the impact of age, gender, socio-economic status and call outcome on patients’ satisfaction with out-of-hours care.

**Methods.** All patients contacting the service over a designated 24 day period were forwarded a postal questionnaire. Health status was recorded using the Short Form-12 (SF-12) health survey. Patients’ satisfaction was measured by using a version of the McKinley questionnaire.

**Results.** The response rate was 55% (531 out of 966). Overall satisfaction levels were high, with 88% of patients rating the service as either excellent or good. Logistic regression, modelling for the simultaneous effects of age, gender, socio-economic status, call outcome and health status on overall satisfaction, found that patients with lower physical and mental health status scores were significantly less likely to be satisfied with their out-of-hours care [odds ratio (OR) 1.04, 95% confidence interval (CI) 1.01–1.07, \(P = 0.017\); and 1.03, 95% CI 1.00–1.06, \(P = 0.046\), respectively]. Patients with higher socio-economic status were also significantly less likely to be satisfied (OR 0.25, 95% CI 0.11-0.55, \(P = 0.001\)). Patient’s age and gender, and call outcome did not significantly affect overall satisfaction levels.

**Conclusion.** Family doctor co-operatives have significantly altered the way out-of-hours care is delivered. Patients with lower health status are significantly less likely to be satisfied with this new form of out-of-hours care. This finding has important implications for the future planning of out-of-hours primary care services.

**Keywords.** Health status, out-of-hours medical care, patient satisfaction.

**Introduction**

Systems for providing primary care outside normal hours have been undergoing major reorganization in Europe in the last 20 years. During this period, the organization of family doctor services has experienced a radical shift from family doctors providing personal 24 h care to their patients to a situation where out-of-hours care is being largely provided either by family doctor co-operatives or by commercial deputizing services.1–3 This recent growth in family doctor co-operatives for out-of-hours care has heralded important changes in the way care is delivered. Many co-operatives have established primary care centres to which patients can be invited and are offering telephone advice from a doctor as an alternative to a home visit. In fact, domiciliary visits have been largely replaced by telephone advice and face to face consultations at designated primary care centres.4

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\(^{a}\)Department of General Practice and \(^{b}\)Department of Mathematics, National University of Ireland, Galway, Ireland. Correspondence to Liam G Glynn, Senior Registrar in General Practice, Department of General Practice, Clinical Science Institute, National University of Ireland, Galway, Ireland; Email: lgglynn@eircom.net
The first and often only point of contact that some patients have with the medical profession, during their contact with the service, is with a triage nurse.

The impetus for these significant changes in the delivery of out-of-hours care has come almost entirely from the medical profession, and it is important to consider the patients’ perspective. Significant changes to out-of-hours services in Denmark during the 1990s showed a decrease in patient satisfaction after the reorganization, although the new scheme was considered a success by doctors and health authorities. It has been claimed that a high proportion of callers can be advised over the telephone, but there is evidence that patients are significantly less satisfied with this arrangement than with a face to face consultation. The effects of factors such as age, gender, socio-economic status and ethnicity on patient satisfaction with out-of-hours care have been examined previously, with varying results. Salisbury has highlighted that there are larger differences in satisfaction between different groups of patients than there are between different models of out-of-hours care.

Patients with lower health status are more frequent users of both daytime and out-of-hours primary care services. Ensuring that the care of such patients is co-ordinated has been highlighted as especially important. The influence of health status on patients’ satisfaction with out-of-hours care has not, to our knowledge, been studied previously.

Methods

Definitions used in the study

‘Out of hours contact’. An ‘out-of-hours contact’ is defined as any request for medical care between 18.00 h and 08.00 h on weekdays, from 08.00 h on Saturdays to 08.00 h on Monday morning, and includes all public holidays until 08.00 h the following morning.

‘General medical services (GMS)’. Free primary care and medications are available to 30% of the population of the Republic of Ireland on a means-tested basis; they are described as GMS eligible. The other two-thirds, whose income is above a certain level (in 2002: €138 per week for a single person aged up to 65 years old who is living alone), are responsible for their own primary health care costs including out-of-hours care. ‘GMS status’ can therefore be considered a marker for socio-economic status or level of deprivation in the community.

Service under study

The family doctor co-operative under study (‘Shannondoc’) covers a mixed urban and rural population of 85,000 people in the West of Ireland and is funded by the Department of Health and Children. The service began on 25 June, 2002, involves 38 family doctors and responds to ~350–450 out-of-hours calls per week.

Design

All patients seen during a designated 24 day period from 20 September to 14 October 2002 were included in the study. This period was chosen to avoid winter epidemics or holiday periods and to allow a sufficient lag period between the inception of the service and the beginning of the study. Patients were sent a postal questionnaire with a covering letter and stamped addressed envelope within 7 days of their contact with the out-of-hours service. Parents/guardians of children (<15 years of age) were asked to complete the questionnaire on their behalf. The questionnaire had been piloted on two occasions with a sample of 12 patients on each occasion. These patients were living in the area under study and the questionnaire was adjusted in response to the pilot participants’ feedback. Patients received a telephone reminder between 2 and 4 weeks after the initial sending of the questionnaire.

The questionnaire consisted of three sections. The first measured patient satisfaction and was based on the questionnaire developed by McKinley for evaluating patient satisfaction with out-of-hours care. This section consisted of a total number of 16 questions each requiring a ‘yes’ or ‘no’ answer, as well as an overall rating of the service received (excellent/good/satisfactory/poor). Patients were required to comment on their initial telephone contact with the service and then to comment on the specific call outcome under the themes of access to out-of-hours care, communication and management, and quality of care. The next section measured patient health status using the Short Form-12 (SF-12) health survey. The SF-12 is a short generic health assessment questionnaire that measures functional health status objectively in the areas of physical, emotional, cognitive and social health. The SF-12 generates two summary scores of functional health: the physical component score (PCS) and the mental component score (MCS). The final section recorded demographic details of the patients using the service.

Patients were excluded if they had died or were seriously ill, had been admitted to hospital under the Mental Health Act, were a nursing home resident, were non-competent in the English language, did not have a permanent address in the area or had an invalid address, or where confidentiality was a concern. Patients who contacted the service more than once during the designated study period received only a single questionnaire and were asked to comment on their most recent experience of the service. Ethical approval was obtained from the research ethics committee of the Irish College of General Practitioners.

Statistical methods

The data were input into SPSS for windows (version 11.0) for analysis and appropriately double-checked. For respondents and non-respondents, comparisons of mean age were made using independent-samples t-test while,
comparisons of gender and GMS status were made using chi-square analysis.

An analysis of covariance, which investigated the main effect (and subsequent interactions) of the factors gender, GMS status and overall satisfaction, while controlling for the covariate age, was fitted for the physical and mental health status response variables. A new binary variable of ‘high’ and ‘low’ overall satisfaction level (excellent/good versus satisfactory/poor) was created from the original four level variable ‘overall satisfaction’ in order to account for the relatively small proportion of patients in the individual categories. Follow-up Bonferroni multiple comparisons were carried out for those factors deemed significant (at $\alpha = 0.05$). As suggested by McKinley, in order to model the simultaneous effect of age, gender, GMS status, call outcome and health status on overall satisfaction, a logistic regression model was fitted. The adequacy of both models was checked using suitable residual plots and model diagnostics.

Qualitative component
The questionnaire contained a section giving the patient the opportunity to add qualitative comments (either positive or negative) concerning their experience of the out-of-hours service. An analysis of these qualitative data was conducted according to the principles framework analysis using Nvivo software. This analysis involved identification and clustering of common themes in the data which was carried out independently by two researchers to enhance reliability. These researchers then reached a concordance of views on common themes after discussion and debate.

Results

Study population
There were 1203 contacts for the designated study period. A total of 966 questionnaires were forwarded to patients following application of the exclusion criteria. The exclusion rate was 19.7% (237 out of 1203). The breakdown per exclusion category is detailed in Table 1. As the area under study is a popular tourist destination, the largest exclusion category (43.0%) were those who did not have a permanent address in the study area. The overall response rate was 55% (531 out of 966). There was no significant difference between respondents and non-respondents in terms of gender proportions and GMS status (Table 2). Mean age of respondents was greater than that of non-respondents and this difference was statistically significant ($P = 0.003$).

Respondents
Patients over 65 years of age made up 13.4% (71 out of 531) of the respondents, while 56.5% (300 out of 531) were aged 15–64 years, with the remainder being children [29.9% (160 out of 531)] aged <15 years. Of the respondents, 39.2% (208 out of 531) were male while 43.3% (230 out of 531) were GMS eligible. Of those who responded, 17.7% (94 out of 531) had received a house call, 57.1% (303 out of 531) were seen at the treatment centre and the remainder, 25.2% (134 out of 531), were managed with telephone advice.

Health status
Table 3 summarizes the relationship between mean health status scores and age, gender, GMS status and overall satisfaction. Significantly lower mean health status scores were seen in patients who were older, were GMS eligible and those who had lower levels of satisfaction with the service. There was no significant difference in health status scores between males and females.

Overall satisfaction with out-of-hours service
Among the respondents to the questionnaire, 62.0% (328 out of 530) rated the service as excellent; 26.1%
(138 out of 530) rated the service as good; and 8.1% (43 out of 530) rated the service as satisfactory. The out-of-hours service was rated as poor by 3.8% (20 out of 530) of patients. Greatest dissatisfaction was expressed with delays in being seen by the doctor, with 17.0% (16 out of 94) of patients who received a house call expressing dissatisfaction with the length of time it took the doctor to arrive.

Table 4 demonstrates, utilizing logistic regression, the effect of age, gender, GMS status, health status and call outcome on the probability (i.e. odds) of having a high level of overall satisfaction with the service. Gender and age did not show a significant effect. With regard to GMS status, non-GMS patients were significantly less likely to have a high level of overall satisfaction with the service than GMS patients \( (P = 0.001) \). Patients with lower physical health status scores and lower mental health scores were significantly less likely to have a high level of overall satisfaction with the out-of-hours service \( (P = 0.017 \text{ and } P = 0.046, \text{ respectively}) \). There was a borderline effect associated with call outcome where patients seen at the treatment centre were more likely to have high overall satisfaction than those seen on a house call \( (P = 0.08) \).

**Qualitative findings**

It is not within the remit of this study to describe the entire qualitative data set, but we present details of the analysis of the negative comments because they were revealing in terms of eliciting the reasons why patients were less satisfied with the out-of-hours service. The strongest themes to emerge from this analysis related to issues of access, continuity of care and confidentiality. The following quotes are illustrative of these views:

“I don’t like the length of time between first ringing the service and then seeing the doctor, also why do you first have to speak to a receptionist, then a nurse before you can see a doctor.” Female, 84 years

“I felt it was unnecessary to repeat my story to the receptionist, the nurse and then the doctor, giving...
all details. Once should be sufficient. Continuity of care is very poor. I needed a follow up the following day with a different doctor and once again had to repeat all details three times.” Male, 2 years (reported by mother)

“I didn’t avail of your services as I was asked by the telephonist what was my condition . . .” Male, 62 years

Discussion

A striking finding of this study is that patients with lower health status scores are significantly less likely to be satisfied with the provision of out-of-hours care by a family doctor co-operative. It is possible that this finding may reflect patients for whom the management of the acute episode has been unsuccessful (leading to dissatisfaction with failed treatment). However, the measure of health status, the SF-12, asks the patient to comment on their health over the period of the previous 4 weeks. It therefore seems more likely that the above finding relates to patients who have requested out-of-hours care within the context of ongoing chronic morbidity with or without additional co-morbidity. Self-reported health status has been shown to be a consistent and powerful predictor of morbidity and mortality. Chronic conditions, not acute ailments, are now the most common problems in health care. Most patients with chronic illness do not have a single, predominant condition but rather have co-morbidity, the simultaneous presence of multiple chronic conditions. For these patients, co-ordinated care of the whole person is paramount, something which may be absent from the current acute, episodic-based structure of out-of-hours services. These patients, therefore, may be particularly vulnerable in relation to the delivery of this form of health care. Additionally, it has been reported that such patients place a higher value on continuity of care in the primary care setting. something which may be absent from the current acute, episodic-based structure of out-of-hours services. These patients, therefore, may be particularly vulnerable in relation to the delivery of this form of health care. Additionally, it has been reported that such patients place a higher value on continuity of care in the primary care setting. something which may be absent from the current acute, episodic-based structure of out-of-hours services.

The mean PCS (44.9) and mean MCS (49.4) found in this study compare with reported normative figures of 50.8 (SD 10.4) and 55.2 (SD 8.2), respectively, for the Republic of Ireland. This may reflect the fact that patients with lower health status are more frequent users of both daytime and out-of-hours primary care services. Additionally, the fact that the population under study was contacting the out-of-hours service because of acute medical need could also explain this. However, health status was measured 7 days after the index visit and so this may challenge the perception that the majority of out-of-hours care is for minor self-limiting illnesses which would have been expected to resolve within 7 days. As reflected elsewhere, lower socio-economic groups were shown to have lower health status scores.

Patient satisfaction is not necessarily the main criterion by which primary care services should be judged, but the attitudes of the consumers of health care are an important factor, which must be considered in evaluating services. Similar patient satisfaction levels with out-of-hours care have been found in other studies in the Republic of Ireland. Regarding call outcome, there is a significant contrast between studies from the Republic of Ireland (Table 5). In the UK, more patients are managed with telephone advice and seen in their own homes. A national survey of general practice co-operatives in the UK suggested that, on average, 40% of callers to family doctor co-operatives receive telephone advice (range 9–66%) and for callers from urban areas with high levels of social deprivation this tends to be in excess of 60%. In this study, telephone advice did not appear to adversely affect patient satisfaction; however, this finding must be placed in the context of a much lower use of telephone advice in out-of-hours care in this country as compared with the UK. Whether telephone advice leads to lower levels of satisfaction in care continues to be a subject of much debate. There is growing evidence that patients are significantly less satisfied with this arrangement than with a face to face consultation. It is possible that the frequency of use of telephone consultations in the Republic of Ireland will increase in line with trends in the UK, which may have detrimental effects on levels

**Table 5** Comparison of call outcome for out-of-hours care provided by the family doctor co-operative as found in the present study with results from similar studies in the Republic of Ireland* and the UK** (study response rates included)

<table>
<thead>
<tr>
<th>Study</th>
<th>Call outcome for out-of-hours care provided</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>House call</td>
</tr>
<tr>
<td>Present study</td>
<td>18%</td>
</tr>
<tr>
<td><em>Lannigan</em></td>
<td>15%</td>
</tr>
<tr>
<td><strong>Shipman</strong></td>
<td>22%</td>
</tr>
<tr>
<td><strong>Salisbury</strong></td>
<td>33%</td>
</tr>
</tbody>
</table>
of patient satisfaction.\textsuperscript{7,8} The reasons for higher levels of dissatisfaction with telephone consultations remain unclear, and whether this reflects unmet expectations, family doctor telephone consultation skills, delays in calling patients back or other organizational issues merits further investigation.\textsuperscript{31}

Differences in gender did not affect overall satisfaction with the out-of-hours service. This was also true for age, a finding at odds with Salisbury’s study\textsuperscript{7} where satisfaction increased with age. However, McKinley\textsuperscript{32} reported greater overall satisfaction in older patients and the carers of older children. This could explain the findings of the present study where this second group was not differentiated. As older patients were shown to have lower health status scores in the present study, it is possible that the out-of-hours service is not responding to the increased health need in this age group, thus leading to lower levels of overall satisfaction. Non-GMS patients were significantly less likely to have a higher level of overall satisfaction with the service than GMS patients. This could relate to a higher level of expectation among this group as one of the most prominent themes to emerge from the qualitative data in relation to this was the issue of cost [in 2002/3, non-GMS patients had to pay €50 (£33.50) per out-of-hours visit].

\textit{Study limitations}

McKinley found that meeting, or failing to meet, the care patients hoped for is an important predictor of patient satisfaction with out-of-hours care, explaining 34\% of variance.\textsuperscript{18} This study did not measure patient expectations of care; additional work to evaluate the effect of both patient expectation and health status on satisfaction with out-of-hours care would be appropriate. Most surveys carried out locally by family doctor co-operatives have used questionnaires to determine patient satisfaction. Such an approach may produce artificially high levels of satisfaction, as patients may feel diffident about criticizing a service so directly. In an effort to reduce this effect, the stamped addressed envelopes used in this study were addressed to an academic institution independent of, and geographically distant from, the service under study. The patient satisfaction measurement instrument used in this study is adopted from McKinley’s questionnaire on measuring patient satisfaction with out-of-hours care.\textsuperscript{16} As an alternative to the 5-point Likert scale used by McKinley, a more simple ‘yes or no’ scoring system was utilized. This is the format that has been used in other studies\textsuperscript{9,30} evaluating family doctor co-operatives in the Republic of Ireland. Although this will facilitate comparison with studies carried out in the Republic of Ireland where there is a dearth of published data in relation to out-of-hours care, it will limit comparison with results from studies that use the Likert scoring system. Non-response bias is an important potential source of bias which we sought to minimize through careful planning of questionnaire design, sample selection, data collection and a reminder strategy. Although the response rate for the study was moderate, it is comparable with similar studies of patient satisfaction with out-of-hours care (Table 5).

\textit{Conclusions}

The organization and delivery of family doctor out-of-hours services in Ireland and other European countries has undergone significant change in the last 20 years. From a patient perspective, there are increasing expectations for the delivery of a high quality, easily accessible service 24 h a day. Although out-of-hours care represents only a small proportion of the total primary care team workload, it is here that tensions between patients and professionals are most often perceived. Whilst patient satisfaction levels appear to be high, this study has identified that those with lower health status are less satisfied with this form of out-of-hours care. Therefore, it is vital that these patients are identified and their needs sought and addressed in the future planning of out-of-hours services.

\textit{Acknowledgements}

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