

## **A Study of GP Workload and Satisfaction**

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### **Abstract**

#### ***Aims***

In this novel study in the Irish setting, we quantified the number items managed per General Practitioner (GP) consult, how each item is managed, and impact on a GP's job satisfaction.

#### ***Methods***

Participating GPs at two surgeries completed a questionnaire - integrated into the practice management software - after each consultation that satisfied the inclusion criteria during a four-week period.

#### ***Results***

Due to feasibility constraints, 500 of 857 (58.3%) completed questionnaires were randomly selected for our sample. GPs manage an average of 1.76 items per consultation. Older patients presented with more items. Greater number of presenting items led to less being managed on the day 71% (n=5) for 5 items vs. 95.2% (n= 246) for 1 item, longer consultation duration (mean = 14.63 minutes (4-45) and decreased GP satisfaction, mean 8/10 (2-10).

#### ***Conclusion***

Increasing the number of items in a GP consultation has a statistically significant effect on duration of consultation, how each item is managed, and even GP satisfaction.

## Introduction

General practice consultations are becoming longer and more complex, reflecting the changing demography, epidemiology, and health-related behaviour and expectations of our patient populations. Pressures within the healthcare system also lead to increased workload for general practitioners (GPs)<sup>1</sup>. These increased pressures coincide with a manpower crisis in general practice as a result of an increase in emigration among newly trained GPs, an increase in part time work by numerous existing GPs, and many GPs retiring. In the absence of significantly improved recruitment and retention of doctors in the field, these trends will place increasing time pressure on those who remain to deliver an ever more complicated and administratively demanding service<sup>2</sup>. With these factors in mind, the primary concern remains the standard of care delivered to our patients. Many patients attend with multiple health-related problems and these can be difficult to manage within a time-limited appointment<sup>3</sup>. International research suggests that, given appropriate opportunity, patients with multiple issues will raise an average of 1–3 concerns per consultation<sup>4</sup>. In the UK, the average number of issues presented by patients was 2.5 per consultation<sup>5</sup>. However, when physicians solicit for problems at the start of the consultation this typically elicits a single concern<sup>6</sup>. From both a patient's and a clinician's point of view, time is regarded as crucial resource. GPs often experience time pressures, particularly in keeping to schedule. Conversely, patients feel that they want more time, or that the doctor did not have enough time to listen to them<sup>7</sup>. Research on consultation durations in Ireland shows that the average duration of a consultation was 14.1 min for the 9 years spanning 2010 to 2018 and patients had an average time between consultations of 99 days<sup>2</sup>. This is longer than the 5–11.7 min reported in the UK, and shows an increase over the period. It is purported that each additional presenting complaint can add 2 minutes to the consultation<sup>8</sup>. This research is the first to document the number of items that patients present with in Irish general practice and the resultant effects on consultation duration and GP satisfaction. The authors hope that this study will highlight the pressures and resource requirements of this vital area of healthcare.

## Methods

This research aims to assess the number of items managed by a GP in the course of a routine patient encounter, how time is managed, and whether this impacts upon a general practitioner's job satisfaction. Analyses were performed to: quantify the number of items that patients present with in a routine GP consultation, ascertain how the GP manages each item, investigate any correlations that may exist between patient demographics and the number of items that they present with, and attempt to discern consultation-factors that impact a GP's satisfaction with the consultation (indicated by a Likert scale within the questionnaire). The research also recorded demographic qualities of every patient, consultation duration and the satisfaction of the GP after every consultation.

A literature review was carrying out via PubMed; we found that no research of this type has previously been undertaken in Ireland. This multi-site, cross-sectional study employed a non-validated questionnaire, because a validated questionnaire relevant to our study did not exist.

The questionnaire was integrated into practice management software at two sites: one single-handed practice and one multi-doctor practice consisting of three full time GPs. Participating doctors were invited to complete a questionnaire after each consultation that satisfied the inclusion criteria during a four-week period. This questionnaire was saved into the patients' chart, but no identifiers were saved, and the data was input into the study spreadsheet anonymously. Because a questionnaire was completed following every consultation, some patients had multiple questionnaires completed if they attended multiple times during the study period. A "presenting item" or "item" was defined as an issue requiring doctor action in the form of a decision, diagnosis, treatment or monitoring. Ethical approval and a consent declaration to proceed without explicit consent were granted by the Clinical Research Ethics Committee of the Cork Teaching Hospitals, University College Cork, Ireland in October 2018. The study population consisted of all encounters involving patients who attended a doctor in each practice during the specified four-week period. This provided a cross-section of all age ranges, genders and a mixture of public and private patients. All encounters with patients who were seen by a doctor in Brandon and Dromcollogher Medical Centres during a four-week period in November 2018 were included. Patients excluded were those seen as a home visit or a nursing home visit, via phone consultations or those who were not seen by a doctor i.e. seen by the nurse or secretary. The minimum number of completed questionnaires required to power the study (with outcome measures being number of items and GP satisfaction) was calculated as being 30. 500 of 857 (58.3%) completed questionnaires were included as a random sample for data analysis. This substantial sample size was included to increase the sensitivity and power of the study, while respecting the feasibility constraints of the researchers. A pilot study was carried out for one week prior to commencement to test the questionnaire and data collection process; survey modifications were made from paper to an online format as a result. There were twelve questions in total, involving multiple choice, yes/no and Likert scale type questions. Questionnaires that were incomplete (missing one or more data points) were discarded prior to random sample selection.

Data from the completed questionnaires were coded and entered into Microsoft Excel 365 and then transferred to SPSS software for analysis with the assistance of a statistician. Several analytical functions were performed on the data to determine power, statistical significance, rejection of null hypothesis (that there is no correlation between patient demographics and number of presenting items or GP satisfaction) and correlation. Statistical significance was said to be achieved if the p value  $\leq 0.05$ . Charts and tables were constructed from these analyses for visual interpretation.

## **Results**

### *Demographics*

The sample of 500 patient encounters displayed a predominance of female patients (57% female (n=285) to 43% male (n=215)). The mean patient age was 50.72 years with a wide age-range (1 to 95 years). The patient encounters involved mostly public patients; 76% (n=380) public patients compared to 24% (n=120) private.

### Number of Presenting Items

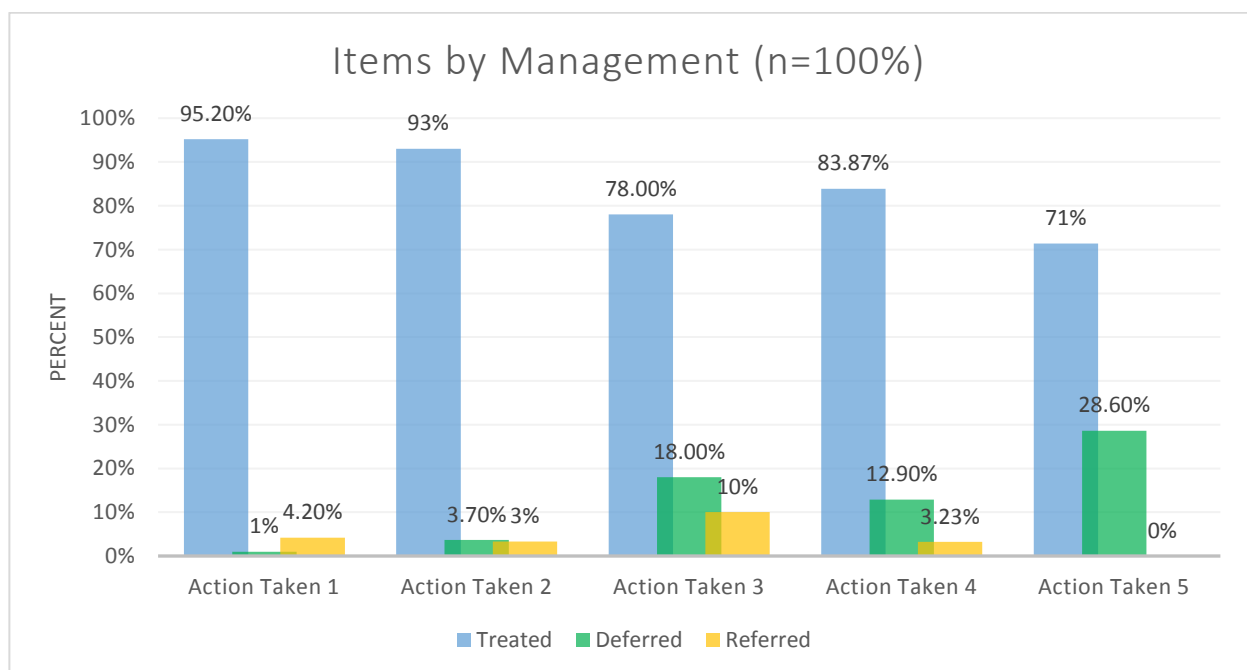
The majority (51.8%, n=258) of the 500 consultations analysed involved only one presenting item, with more presenting items being less common. With an average of 1.76 items per consultation, GPs managed 76% more issues than their daily patient list would suggest (table 1).

Number of Presenting Items	Frequency (=n)	Percentage
1	258	51.8%
2	143	28.5%
3	67	13.3%
4	25	5.0%
≥ 5	7	1.4%
<b>Total</b>	<b>500</b>	<b>100%</b>

**Table 1.** Number of presenting items.

### Management of Presenting Items

As the number of items increased, the GP was more likely to defer management to a follow-up consultation. Figure 1 shows that for all patient encounters involving two items the second item was deferred in 3.70% (n=5) of cases, whereas for all patient encounters involving five or more items the last item was deferred in 28.60% (n=2) of cases.



**Figure 1.** Presenting items by management plan displayed as percentage of each presenting item.

### Correlation between Patient Demographics and Number of Presenting Items

A statistically significant association between patient age and the number of presenting items was found in two age groups (table 2). The red boxes demonstrate the cells that are most responsible for the rejection of the null hypothesis (that there is no correlation between patient demographics and number of presenting items or GP satisfaction). As expected, the number of presenting items increases with increasing age.

Age		Number of Items				
		1	2	3	4	5
<b>34 and Under</b>	Count	95	25	7	1	1
	Expected Count	66.8	36.7	17.2	6.4	1.8
<b>35 to 55</b>	Count	68	34	14	4	1
	Expected Count	62.7	34.5	16.1	6.0	1.7
<b>56 to 70</b>	Count	54	38	21	10	0
	Expected Count	63.7	35.0	16.4	6.1	1.7
<b>71 and Older</b>	Count	43	46	25	10	5
	Expected Count	66.8	36.7	17.2	6.4	1.8

**Table 2.** Association between age and number of presenting items.

### Statistically Significant Correlations Between Age, Duration of Consultation, GP satisfaction and Number of Items

			Age	Duration	Satisfaction	Items
Spearman's rho	Age	Correlation Coefficient	1.000	.122**	-.043	.317**
		Sig. (2-tailed)	.	.006	.333	.000
		N	500	500	500	500
	Duration	Correlation Coefficient	.122**	1.000	-.378**	.400**
		Sig. (2-tailed)	.006	.	.000	.000
		N	500	500	500	500
	Satisfaction	Correlation Coefficient	-.043	-.378**	1.000	-.287**
		Sig. (2-tailed)	.333	.000	.	.000
		N	500	500	500	500
	Items	Correlation Coefficient	.317**	.400**	-.287**	1.000
		Sig. (2-tailed)	.000	.000	.000	.
		N	500	500	500	500

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Table 3.** Correlations between age, duration of consultation, GP satisfaction, and presenting items.

Age and duration showed a weak, though statistically significant, positive correlation demonstrating more time was spent with older patients. A positive correlation was also seen between age and number of items.

A statistically significant moderate negative correlation was found between duration and GP satisfaction and between GP satisfaction and number of presenting items. These findings show that GPs reported greater satisfaction with fewer items and shorter consultations.

Duration and number of items showed a moderate statistically significant positive correlation i.e., more presenting items resulted in longer consultations.

## **Discussion**

This study led to several interesting findings. Demographic data, per consultation, revealed a female predominance, with a mean age of 50.72 years and largely public GMS status. Patient age correlated with duration and number of presenting items which suggests elderly patients tended to present with more items, and their consultations were longer. Almost half (48.2%, n=241) of consultations involved more than one presenting item, the average being 1.76 items per consultation; this means that GPs manage 76% more items than their daily consultation list suggests. As the number of items per consultation increases, more items are deferred for later management. GPs must work within the bounds of time, thus an increasing number of issues correlated with increased consultation time and decreased GP satisfaction, both to statistically significant degrees. This study reveals the clear impact of GP workload on satisfaction, setting it within the observed trend in increasing workload and burnout amongst GPs<sup>9</sup>. This is the first study of its kind in the Irish setting and it aligns with established findings in the international literature which demonstrates that GPs regularly managed more than one item per consultation but is lower than the average figure for presenting complaints in the UK<sup>4,5</sup>.

The strengths of the study included the considerable sample size; even after reducing the sample size for feasibility purposes, the statistical power of this study is formidable. Because of the large sample size, many of the study correlations were statistically significant. This was a mixed urban and rural study and demographic data was varied in relation to age, gender and GMS status, which allowed for a diverse study population and is representative of the nature of everyday General Practice. The short, easily employed questionnaire used here makes this study readily reproducible.

The study's major limitation is the dependence on doctor self-reporting. The doctors were aware of the study hypothesis and this, together with the Hawthorne effect, could have led to inaccurate data being recorded. Attempts were made to counter this by facilitating immediate completion of the questionnaire following the consultation. The questionnaire was designed to be quick and easy to complete and, following the pilot study, it was incorporated into the GP software to further streamline the data collection process.

Direct observation by researchers or via video recordings would be superior but less feasible <sup>10</sup>. Previous studies employing such methods have found a common limitation to be the subjectivity of the analysis of the data <sup>11, 12</sup>. Even direct observation is limited by the difficulty in describing issues considered by a GP in making decisions, but not necessarily acted upon, for example, the patient's co-morbidities and social background. Hence, the study may underestimate the complexity of consultations from the GP's perspective. There was also a limitation in using a non-validated questionnaire but on review of the dataset gathered it is apparent that the instrument used was fit for purpose. This study was carried out in two practice settings which limits extrapolation to the wider Irish population. Replicating the study in other rural and urban settings may reveal interesting results. Because our focus was on quantity of items per GP consultation (not necessarily unique patient encounters), we did not correlate the impact of how items were managed on GP satisfaction, nor did we remove repeat presentations within the data collection period from our sample. Doctor factors such as personal differences with the patient are difficult to control for, introduce unavoidable inter-rater reliability issues, and represent an additional limitation of the study.

In conclusion, this study notes that consultations in general practice are multifaceted encounters, with multiple complaints managed by a GP within a single consultation. This study demonstrates that increasing the number of items has a statistically significant effect on duration of consultation, how each item is managed, and even GP satisfaction. There are wider implications in terms of GP contract negotiations, resource planning, and guideline implementation. These factors should be taken into account by both the medical profession and policy makers in future.

**Declaration of Conflicts of Interest:**

The authors declare no conflict of interest.

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