Does cash payment influence a GP's decision to prescribe antibiotics?

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Introduction

Antimicrobial resistance is a major public health concern and one of the primary factors contributing to resistance is the unnecessary use of antimicrobials. Many countries have developed strategies in order to promote the rational use of antibiotics. Ireland is only one of three European countries where outpatient antibiotic use is increasing, at a rate of 3% per year since 2000.

The majority of antibiotic prescribing is conducted by General Practitioners (GPs) in the community, and wide variation is known to exist. The volume of antibiotics prescribed that are unnecessary in the community is unknown but it is believed that a number are used to treat minor respiratory tract infections. These conditions such as the common cold, sore throat, acute *otitis media* and acute bronchitis have no compelling evidence to support the use of antibiotics in their treatment. There are many external (non-clinical) factors that influence a GP's decision to prescribe, e.g., patient pressure and social factors. Patient pressure and time restraints have been quoted as potential reasons that GPs provide treatment, despite clinical evidence suggesting it is not necessary.

There is considerable debate internationally about how primary care services should be funded and delivered. As a result, policy-makers have used a wide variety of strategies to make the best use of the national resources and this often becomes a political debate. Access to primary care services operates on a two-tier system in the Republic of Ireland (ROI). General Medical Service (GMS) card holders attend GP surgeries free of charge and are entitled to free medications. Eligibility is means tested and in 2009, 33% of the population in Ireland were GMS card holders. When characteristics such as level of health are controlled, having a GMS card remains a very strong predictor of GP utilisation.

Non-card holders (private patients) must pay a non-subsidised fee to visit their GP. Almost all GPs in Ireland (96%) operate a mixture of GMS and private practice. In other countries such as the UK, GPs working for the National Health Service (NHS) are not allowed to charge patients for their family health services. There are many reasons that this regulation was introduced. A GP working in an unregulated private market may have an incentive to provide above the required services, an event known as 'supplier-induced

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demand.' GPs can also be under more pressure from patients to provide unnecessary treatments due the pressure of the payment involved. The method of GP remuneration and patient demands have been acknowledged as some of the main factors that influence the practice of GPs. In Canada, both salary-based and fee-for-service GPs exist and it was found that there was an association between fee-for service GPs and high rates of antibiotic use. We postulate that this payment may affect the GP's decision to prescribe antibiotics in consultations in ROI.

Aim

The aim of this study was to ascertain whether there was a variation in practice in prescribing antibiotic between GMS and private patients in the ROI.

Method

Ethical approval was granted by the local ethics committee. All GPs nationally attending continuing medical education (CME) groups were invited to participate from October 2008 to April 2010. Ireland has a CME attendance of over 1,000 GPs. Participating GPs gathered data on 100 consecutive consultations including diagnosis and patient characteristics. When an antibiotic was prescribed during the consultation, details of the prescription and directions for use were recorded, for example, where a delayed or 'deferred' antibiotic prescription was given to dispense at a later time if necessary, as agreed by GP and patient.

Analysis

Data was analysed using Microsoft Office Excel® (2007) and Statistical Package for the Social Sciences (SPSS®, Chicago, Illinois) version 15.0. The Pearson's chi-squared tests (χ^2) were performed to assess if associations existed between categorical variables; if the p-value $<.05$ then there was a statistical relationship between the two variables. Odds ratios (ORs) were calculated to measure the strength of these associations; an OR of 1 implies that the occurrence is equally likely in both groups. An OR >1 implies that the occurrence is more likely in one group; an OR <1 implies that it is less likely. The Mann-Whitney test was used to compare numerical variables, i.e., to test whether one variable tends to have values higher than the other (a p-value here <0.05 signifies a statistical difference) and 95% confidence intervals (CI) were calculated.

Table 1: Comparison of GMS and Private consultations

	Private	**GMS**	**P-value (χ^2 test)**	**OddsRatio**
No. of consultations	7,021	9,033	—	—
No. of antibiotic prescriptions (%)	1,516 (21.59)	1,656 (18.33)	<0.0005	1.22
No. of antibiotic prescriptions for respiratory symptoms (%)	1,037 (68.40)	1,028 (62.08)	<0.0005	1.47
No. of deferred antibiotic prescriptions (%)	235 (54.27)	198 (45.73)	0.006	1.34

Results

Data were collected from 170 GPs, which resulted in 16,800 consultations. These GPs were from all over the ROI and a range of demographics and settings (e.g. urban/rural) were represented. The mean (±SD) number of consultations recorded per GP was 98.82 ±5.85. This took an average of 3-5 working days for the GP to complete.

The mean age of GMS patients was 49.65 ± 26.13 years, while the mean age of private patients was 33.82 ± 20.59 years (p<0.0005, 95% CI:13.37-17.49). Antibiotics were prescribed at 3,380 (20.12%) consultations. Half of the antibiotics prescribed were for GMS card holders (1,656; 48.99%), 44.85% (1,516) were for private patients and 6.15% (208) were of unknown type due to missing data. The rate of antibiotic prescriptions in both groups was similar (GMS: 18.33%, Private: 21.59%). However, private patients were more likely to receive an antibiotic prescription (p<0.005, OR 1.22). People aged ≥ 65 years were less likely to receive an antibiotic (p <0.001, OR 0.69).

Private patients were also more likely to receive a deferred prescription (p=0.006, OR 1.34) (Table 1). The majority of antibiotics prescribed for both groups were for diagnosis or symptoms of a respiratory-related illness. A higher percentage of private patients (1,037, 68.40%) compared to GMS patients (1,028, 62.08%) received an antibiotic for a respiratory related illness. Private patients were more likely to receive an antibiotic when consulting with a respiratory illness (p<0.0005, OR 1.47) (Table 1).

Discussion

GMS patients are known to be higher consumers of medical care; GMS card holders had an average of 6 visits per year in 2001, compared with 2.3 visits for those without a medical card. This can be partly explained by the higher age and worse physical and mental

health of the GMS population; and partly explained by the reluctance of private patients to pay the fee. Research to date on antibiotic prescribing in Ireland has not included non GMS card holders. Pharmacy sales data is available but holds no individual level information. Unlike other countries, information on diagnostic indications that are being treated with antibiotics in the community is not known in Ireland, although this data is vital in developing strategies to reduce antibiotic use.

This study has shown that private patients are slightly more likely to receive an antibiotic prescription (1.22 times). GPs often quote expectation and pressure from patients as a reason for antibiotic prescribing and this pressure would be expected to be increased when there is payment involved.

Older patients are more likely to develop complications such as pneumonia following a respiratory infection and therefore antibiotic use in this cohort would be expected to be higher than the general population. This study found that older patients were less likely to receive an antibiotic, indicating that inappropriate prescribing is occurring more in the younger, healthier population.

A limitation of the study was that GPs did not record the duration of symptoms of each patient. This may influence the decision of the GP to prescribe antibiotics. It is generally thought that on average private patients wait longer to visit their GP due to the cost implications and therefore likely to have worsening symptoms. This will be studied further in qualitative work that is currently being conducted.

Conclusion

These results demonstrate that whether the patient pays for the GP consultation can have an influence on the GP's decision to provide an antibiotic prescription. Private patients are more likely to receive an antibiotic prescription. This was not expected, as GMS patients are higher users of medical care due to the higher age bracket and the lower socio-economic background of the group, and further supports the theory that external factors have a role in antibiotic prescribing in primary care. Deferred prescriptions were more likely to be prescribed to private patients, negating the need to re-consult if symptoms deteriorated. Age was also shown not to be a contributing factor, which was also not expected as antibiotics have shown to have more protective benefits in the older population. More research is required to follow-up both GMS and private patients to assess clinical outcomes post-GP consultation.

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Self-discovered breast cancer symptoms and women's help seeking behaviour: key findings from phase one of a two-phase study

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Background

Breast cancer is the most common cancer among women in the western world. In Ireland, breast cancer was the most common cancer diagnosed amongst women during 2000-2004 with approximately 3,095 cases reported annually and an average of 947 deaths. It is well known that the earlier the diagnosis of breast cancer is made the more likely it is that women will have a better health outcome. However, 20-30% of women wait for one month or more before presenting to a Health Care Professional with a self discovered breast symptom. This is a worrying situation given the increased emphasis on prompt presentation of symptoms and the associated link with better health care outcomes for women diagnosed with breast cancer. Therefore, more work on help-seeking behaviour from the woman's perspective will help Health Care Professionals to understand women's needs and concerns surrounding symptom discovery and highlight the key issues linked to delayed help seeking. This paper reports on phase one of a two-phase study which explored women's help-seeking behaviour for a self-discovered breast symptom, from a qualitative perspective.

Aim

The aim of phase one of the study was to explore women's help seeking behaviour for a self-discovered breast symptom, to find out more about women's experience of finding such a symptom and how this influences their help seeking behaviour. In addition, the researcher wanted to identify the key issues to be included in a questionnaire for phase two of the study.

Methods

Following ethical approval, a qualitative descriptive study using semi-structured interviews with ten women who had self-discovered a breast symptom was carried out. Initially, women were asked to tell about their experience of finding a breast symptom. Then, more specific areas identified as being important in the literature review were explored with women. These areas included symptom related issues, emotional responses to the symptom, social issues, health seeking habits, access to health services and knowledge and beliefs about the symptom and its outcome. Women's socio-demographic details were recorded at the end of each interview.

Analysis and Results

The interviews were recorded and transcribed by the researcher, following which all interviews were read and re read several times. Data were then analysed using content analysis, which involved identifying and summarising the key issues emerging for women within each of the main topics outlined above. The researcher was conscious of maintaining the credibility and dependability of the findings throughout the study. This was done by being true to the data, using women's direct quotes to illustrate the points being made, and discussing findings with the co-researchers to see if they agreed with the issues emerging.

Findings

Socio-demographics, symptom discovery and help seeking behaviour

Ten women took part in the study ranging in age from 25 to 55 years. These included seven Irish women, two Eastern European women and one English woman. All of the women discovered the symptom(s) themselves. Three women presented with a breast lump, four with breast pain, two with both lump and pain and one with a bloody nipple discharge. Four women had a family history of breast cancer which included aunt for two women and mother and aunt and mother and sister for two women, respectively. The time from symptom discovery to first visiting the General Practitioner (GP) was called "help seeking behaviour" and was either prompt (within one month) or delayed (over one month). Following symptom discovery, six women visited their GP within one month and four delayed over one month. Two of these women delayed from one to two months and two delayed for over three months.

Factors influencing women's help seeking behaviour

The key facilitators for women's help-seeking behaviour were telling another person about the symptom; knowing about breast symptoms and their associated risks and the importance of early detection of breast cancer; and confidence in the health services overall. Delayed help-seeking was due mainly to women's denial and fear and family and work commitments. In addition, lack of knowledge in relation to family history and risk and the belief that breast cancer was incurable impacted on delay. The study highlighted that denial impacted on the help seeking behaviour of those women who delayed help seeking for over one month or more, as highlighted by one woman who said:

> I thought if I ignored the symptoms, they would go away...

In addition, women experienced varying degrees of fear, causing some to delay and others to seek help earlier. Voicing concerns about the symptom to another person had a positive impact on help-seeking behaviour. In some cases, the competing social roles of family and work commitments prevented women form seeking help at an early stage. Women's knowledge and performance of breast self-examination varied. Notably, some women reported uncertainty around breast self examination and said that they never examined their breasts.

Health service utilisation factors had a positive effect on women's help seeking behaviour and overall, women expressed satisfaction with the GP services. A presenting symptom of a breast lump was significant for most women and caused them to seek help promptly. This supports findings from previous studies which highlight that the nature of the symptom impacts on early help seeking behaviour. Although women were aware that early detection of breast cancer was recommended, this did not always impact positively on their help seeking behaviour. Women believed that family history was the biggest risk factor for developing breast cancer. However, a false sense of security in the absence of a family history of breast cancer was noted amongst some women.

A belief that breast cancer was curable if detected and treated at an early stage was expressed by most women. However, this was not the case for one woman who delayed help seeking for over three months and expressed the pessimistic view that her breast symptom and its outcome would be permanent and incurable. In relation to a breast cancer diagnosis, religious beliefs and having a positive attitude were recognised by most women as being helpful to their health outcome overall. Although religious beliefs were important, few women relied solely on praying to God when they first found their breast symptom. Finally, although a strong belief in the use of conventional medicine for breast cancer treatment was prevalent, women also recognised the value of alternative therapies as an additional treatment.

Conclusion and recommendations

This study increases Health Care Professionals' understanding of women's help seeking behaviour on self discovery of a breast symptom and highlights the key issues influencing delayed help seeking. i.e., psychological and social factors and women's knowledge and beliefs. Findings also clarify that these factors have potential to both initiate and inhibit women's help seeking behaviour. Thus, confirming their appropriateness for inclusion in the questionnaire for phase two of the study. The study emphasises the importance of continued focus on the message of early detection of breast cancer. New initiatives that address the barriers to prompt help-seeking need to be developed. In this regard, nurses have an important role to play in educating women about breast cancer and promoting early detection practices amongst women in both the acute and community health care settings. However, nurses will have to be supported in this role, if this health-promoting endeavour is to become a reality.

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