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# Patient use of the internet for health information

## Background

The internet has become an integral part of our everyday lives, affecting the way we work and communicate. It has also changed the way patients obtain health information. This study measures the extent to which general practice patients use the internet to obtain health information, particularly in relation to the problem(s) they bring to the general practitioner (GP), and whether this differs by patient age, sex, socioeconomic status, rurality and English-speaking background status (ESB).

## Method

This research was a sub-study of the Bettering the Evaluation and Care of Health (BEACH) program (a continuous national study of general practice activity in Australia).

## Results

Of 2944 patients, 63.4% accessed the internet in the previous month; 28.1% had sought health information online; and 17.1% had obtained information related to problems managed by the GP at that visit. Internet use and online health information seeking was inversely related to age for patients aged 15 years or older. The most socioeconomically advantaged patients were significantly more likely than the most disadvantaged to have obtained health information online. Patient sex, ESB status and rurality did not influence internet use or online health information seeking.

## Keywords

education, health; patient education as a topic; internet

General practitioners (GPs) play a pivotal role in health promotion and preventive care.<sup>1</sup> In 2012–13, about 85% of Australians consulted a GP at least once, with an average of 5.5 GP visits per head of population.<sup>2</sup> Each consultation is an opportunity for GPs to provide patients with information about health maintenance and illness prevention. However, the increasing burden of chronic disease in the ageing population and its impact on GP workload increasingly limits time within the consultation to provide health information.<sup>3,4</sup>

The internet could be an effective additional source of health information for patients. Although there is an abundance of literature about online health information seeking and its benefits, including potential savings in time and money, few studies were representative or focused on general practice patients.<sup>5,6</sup>

This study aimed to measure the extent to which general practice patients use the internet to obtain health information, particularly about information related to the problem(s) they bring to the GP, and whether this differs by patient age, sex, socioeconomic status, rurality and English-speaking background (ESB) status.

## Methods

Data were collected in a sub-study of the Bettering the Evaluation and Care of Health (BEACH) program. BEACH is a national continuous cross-sectional survey of general practice activity in Australia. The BEACH methods are described in detail elsewhere<sup>2</sup> but, in summary, ever-changing, random samples of about 1000 GPs participate

each year. Each GP records details of 100 consecutive patient encounters. GPs in the BEACH program are representative of all recognised GPs practicing in Australia.<sup>2</sup>

Data for this sub-study were collected in January and February 2013. For 30 of their 100 encounters, GPs were instructed to ask the patient about their internet use in the previous month, frequency of internet use, whether they sought health information online, type(s) of health information obtained, and whether the information related to problems managed or discussed with their GP at that visit. Patient demographics were also collected. A copy of the recording form is available online.<sup>2</sup> Ethics approval for BEACH and this sub-study was obtained from the Human Research Ethics Committee of the University of Sydney (HREC: 2012/130).

The Australian Standard Geographical Classification (ASGC)<sup>7</sup> was used to assess patient geographic location and Socio-Economic Indexes for Areas (SEIFA, 2006) Index of Relative Socio-economic Advantage and Disadvantage<sup>8</sup> was used to measure relative socioeconomic advantage/disadvantage on the basis of patient postcode of residence. Patients with SEIFA scores of 1 or 2 were considered most socioeconomically disadvantaged, and scores of 9 or 10 as most advantaged.

We adjusted for the cluster effect of the study design using survey procedures in SAS version 9.3.<sup>9</sup> A statistically significant difference between two results was determined by non-overlapping 95% confidence intervals (CI). Non-overlapping CI are a more conservative measure of significance than the 5% level because they reduce the chance of false positive results and increase the chance of false negative results.<sup>10</sup>

## Results

Responses for 2944 patients were provided by 100 GP participants (80% response rate; 55 patients without recorded responses were excluded). There was no difference in the sex distribution of patients in this sub-sample when compared with 2012–13 BEACH data; however, there were fewer patients aged 14 years or less.

Of 2944 patients, 63.4% (95% CI: 59.8–67.0) had accessed the internet in the previous month; 28.1% (95% CI: 25.0–31.2) sought health information online; and 17.1% (95% CI: 14.7–19.6) obtained information related to problem(s) managed by the GP. The 827 patients who sought health information online represented 44.5% (95% CI: 40.7–48.2) of internet users, and the 504 patients who obtained information related to problem(s) managed by the GP represented 62.0% (95% CI: 57.7–66.3) of those who sought health information. These proportions did not differ between the sexes, ESB status, or geographic location, although very small numbers were recorded for 'remote' and 'very remote' ASCG categories.

Internet use and online health information seeking was inversely related to age for patients aged 15 years or older (Figure 1).

- Patients aged 15–24 years were the most likely to have used the internet in the previous month (91.7% [95% CI: 87.0–96.5]) and used it most frequently (80.3% [95% CI: 73.7–86.8] of internet users in this age group accessed the internet daily).
- Patients aged 25–44 years were most likely to obtain health information online (48.7% [95% CI: 42.8–54.7] corresponding to 54.9% [95% CI: 49.3–60.4] of internet users in this age group) and to obtain information related to problem(s) managed by the GP at that visit (30.2% [95% CI: 25.6–34.8]).
- Patients aged 75 years or older were least likely to have used the internet (23.5%; n = 130) and used it least often (50.8% of internet users in this age group, n = 65, used it daily). Only 5.4% (95% CI: 3.0–7.9) of patients aged 75 years or older had obtained health information online (corresponding to 23.3% of internet users in this age group; n = 30) and 3.8% (n = 21) obtained information related to problem(s) managed by the GP.

There was also a relationship between patient socioeconomic status and internet use (Figure 2). The most advantaged patients were significantly more likely than the most disadvantaged patients to have:

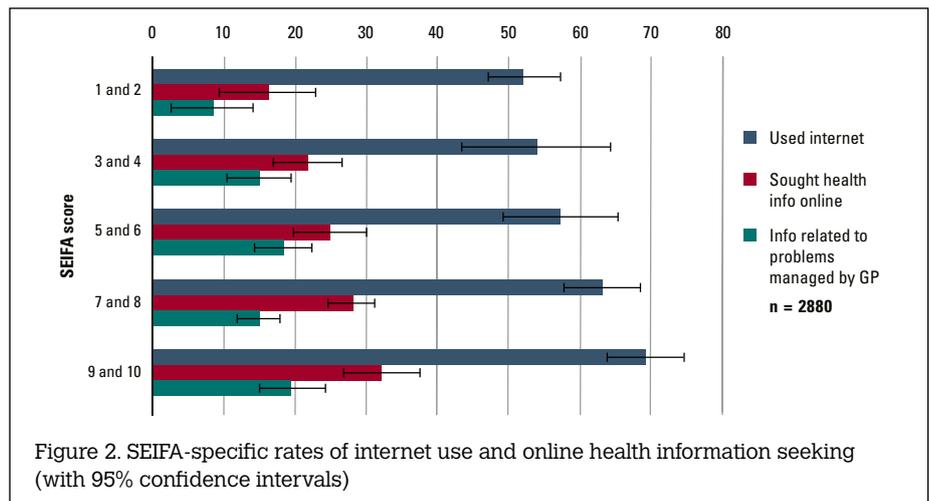
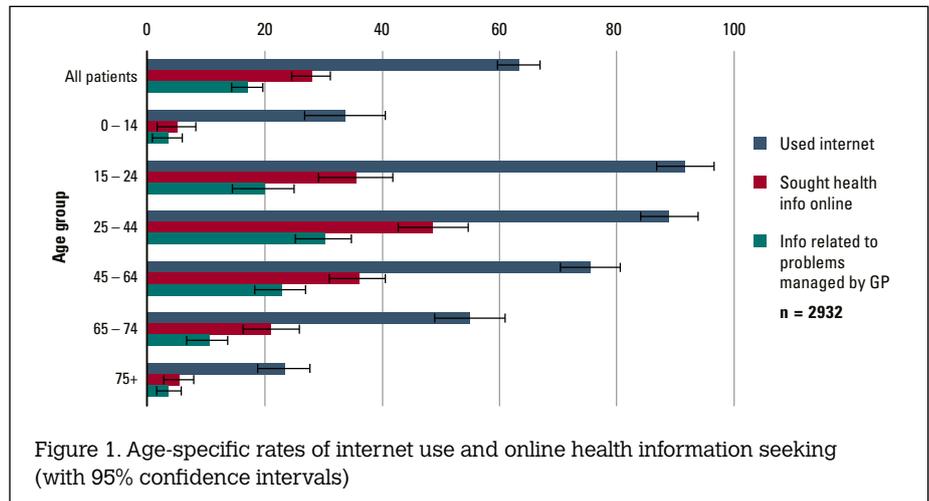
- used the internet (69.2% [95% CI: 64.1–74.3], compared with 52.1% [95% CI: 47.1–57.1])
- obtained health information online (32.2% [95% CI: 26.9–37.5], compared with 16.3% [95% CI: 9.7–22.9])
- obtained information related to problem(s) managed by the GP (19.6% [95% CI: 15.2–24.0], compared with 8.4% [95% CI: 2.7–14.1]).

Among the 827 patients who obtained health information online, information related to a specific illness or disease was the most common type of information sought (57.2%), followed by diet/fitness (31.7%), undiagnosed

symptoms (28.7%), medications (25.3%), other medical treatments (12.8%) and immunisation/vaccinations (6.2%).

## Discussion

This study provides insight into the prevalence of internet use and online health information seeking among general practice patients. About two-thirds of patients had accessed the internet in the previous month, about 30% sought health information online, and one-in-six obtained information related to a problem managed by the GP at that visit. Internet use and online health information seeking differed significantly by patient age and socioeconomic status. Patient sex, ESB status and geographic location did not influence internet use or online health information seeking. These results were consistent with those reported in the literature



with the exception of patient sex. Previous studies found that males were less likely to use the internet and seek health information online.<sup>11,12</sup>

The strengths of this study include the random sampling of GPs and patients, with adjustment for the cluster effect of the study design, the high response rate and the relatively large sample size in comparison to other studies, which have mostly used smaller, non-clinical samples.<sup>5</sup> Although a convenience sample was dictated by the BEACH/Supplementary Analysis of Nominated Data (SAND) methods, the patients were representative of the national sample in all age groups except those <14 years.

Limitations include the reliance on patient self-report, although our method involves using the GP as an expert interviewer and may provide more accurate information than patient self-report alone.<sup>13,14</sup> Further limitations include possible recall bias, lack of information about the types of websites visited, intention and the impact of online health information seeking.

Online health information seeking is prevalent among general practice patients. About half of all patients aged 25–64 years had used the internet for health information in the previous month. Although the proportion of internet users and online health information seekers decreased as age increased, there was still a significant proportion in the older age groups. More than half (55.1%) of all patients aged 65–74 years used the internet, about one in five (21.2%) sought health information online, and one in ten (10.5%) obtained information online about a problem prior to seeing the GP about it. Only about one-quarter of patients aged 75 years or older used the internet in the previous month but, of those who did, half accessed it daily and one-quarter had obtained health information online. Similarly, although the most advantaged patients were twice as likely to have obtained health information online and obtain information that related to problem(s) managed by the GP, online health information seeking was not uncommon among the most disadvantaged.

While it is important to encourage patients to be more engaged in their health through activities such as health information seeking, as this can lead to improved health outcomes and potentially reduce health resource use,<sup>15</sup>

GPs and patients should be conscious of the risks.<sup>4,15–17</sup> Older patients and those of low socioeconomic status have been shown to have lower levels of health literacy.<sup>15,18</sup> GPs should be aware that even though these patients were less likely to use the internet for health information, a significant proportion had done so, often before consulting the GP about a health problem. GPs should assess their patient's level of health literacy before directing them to online sources of information as it may be difficult for some patients to determine the trustworthiness of websites and apply the information to their personal situation.<sup>11,17,19</sup> There is a risk that the information may be misleading or it may be misinterpreted, which could have a negative impact on the patient's health.<sup>4,6</sup>

The popularity of the internet as a source of health information means that it could be used for health promotion and patient education if patients are directed to reliable sources. However, GPs may increasingly need to take the time to process information brought by patients about health problems they present to the GP, which in turn may increase the complexity and length of the GP-patient consultation.

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Competing interests: Funding contributors to the BEACH program in April 2012 – March 2013 include: Australian Government Department of Health and Ageing; Australian Government Department of Veterans' Affairs; AstraZeneca Pty Ltd (Australia); Merck, Sharp and Dohme (Australia) Pty Ltd; Pfizer Australia Pty Ltd; Novartis Pharmaceuticals Australia Pty Ltd; bioCSL Pty Ltd; National Prescribing Service Ltd. Provenance and peer review: Not commissioned, externally peer reviewed.

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