

Is Dr Google making us a nation of 'cyberchondriacs'?

By Charlotte Jennings, Sophie Wetz and Lauren O'Donovan –Bandon Grammar School

1. Inspiration for our project

Online self-diagnosis is more prevalent than ever with 1 in 20 searches on Google being for health related information. It seems that 'Google it' has become the phrase of our generation but when researching this project we began to question whether googling our health concerns (something we were all guilty of) was ironically having an even worse effect on our health as simple, easily treatable medical conditions are being turned into serious, life-threatening illnesses by online search results increasing stress and anxiety. For our project we wanted to find out if our experiences correlate with those of our wider community and to find out how common the practice of online self-diagnosis is among a wide variety of age groups in today's modern, technology-driven society.

2. Experimental Methods

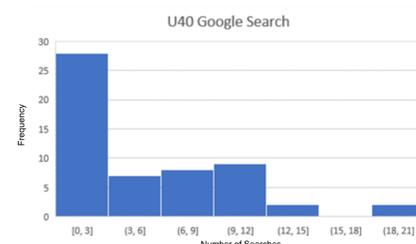
We distributed a survey to 100 people, both male and female of a wide variety of age groups. The survey consisted of 13 questions regarding people's opinions on google as a source of medical information and people's experiences using google for health related information.

3. Results of our survey

Our survey found that:

- 75% of the people we surveyed would rate google as a diagnostic resource as either very unreliable, quite unreliable or alright.
- 73% said that medical information from the internet could not replace a diagnosis from a doctor.
- Only 18% of people hadn't searched the internet at least once in the past year for reasons why they were experiencing certain symptoms/pains or possible illnesses.
- The three most common areas of health related information being searched for were 1)common health conditions 2)physical ailments and 3)mental health
- When those who had self diagnosed in the last year were asked how they felt after seeing the search results; 46% said that they felt worried/anxious, 23% said they felt relaxed/put at ease and 31% said that the search results didn't bother them.
- 60% of people said that the search results had somewhat of a negative impact on their mental health
- When our sample was asked why they chose to search the internet for health related information rather than visit a doctor; 47% said it wasn't serious enough, 19% said they didn't have time, 15% said they couldn't afford it, 11% said because the internet was more convenient and 8% said because they were too scared.

4. Analysis of the number of searches made by under and over 40s



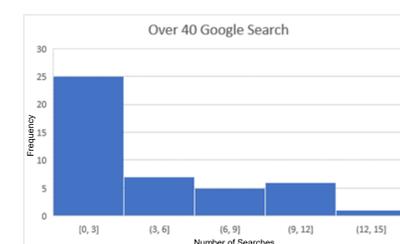
The chi square test indicates that our sample data is taken from a population with a normal distribution. So the confidence interval for the average number of searches on google by those aged under 40 is:

$$\bar{x} \pm 1.96 (\sigma / \sqrt{n})$$

$$5.446 \pm 1.96 (5.002 / \sqrt{56})$$

$$[4.14, 6.75]$$

From this we can say with 95% confidence that based on our sample, that the mean number of searches for those aged under 40 will lie between 4.14 and 6.75.



The chi square test indicates that our sample data is taken from a population with a normal distribution. So the confidence interval for the average number of searches on google by those aged over 40 is:

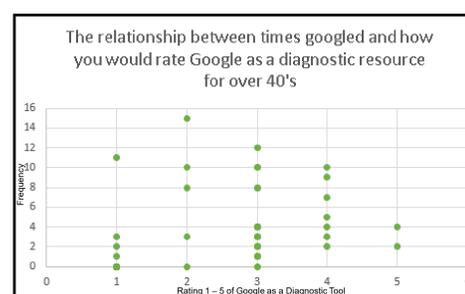
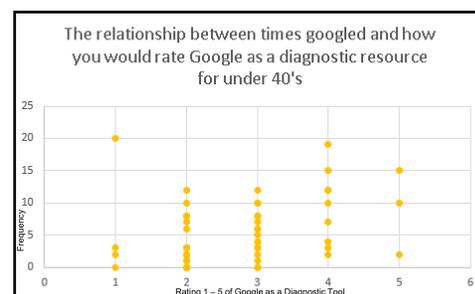
$$\bar{x} \pm 1.96 (\sigma / \sqrt{n})$$

$$4.114 \pm 1.96 (3.949 / \sqrt{44})$$

$$[2.95, 5.28]$$

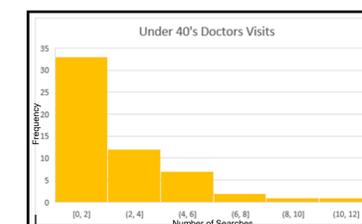
From this we can say with 95% confidence that based on our sample, that the mean number of searches for those aged over 40 will lie between 2.95 and 5.28.

5. Relationship between number of times googled and how our sample would rate Google as a diagnostic resource



The two above graphs show the correlation between peoples' opinions on google as a diagnostic resource and how often they use it. There was a slightly stronger correlation for those aged under 40 (0.347843) compared to those aged over 40 (0.242115). The positive correlation means that the more reliable a person would rate google the more often they self-diagnose online.

6. Analysis of the number of doctors visits for under and over 40s



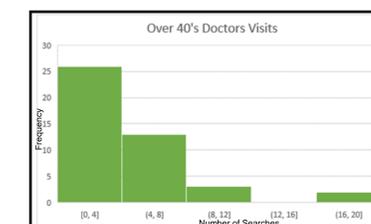
The sample data above is taken from a population with a normal distribution (indicated by the chi square test). So the confidence interval for the average number of visits to the doctor for those aged under 40 is:

$$\bar{x} \pm 1.96 (\sigma / \sqrt{n})$$

$$2.68 \pm 1.96 (2.50 / \sqrt{56})$$

$$[3.33, 2.02]$$

From this we can say with 95% confidence that based on our sample, that the mean number of visits to the doctor for those aged under 40 will lie between 3.33 and 2.02



The sample data above is taken from a population with a normal distribution (indicated by the chi square test). So the confidence interval for the average number of visits to the doctor for those aged over 40 is:

$$\bar{x} \pm 1.96 (\sigma / \sqrt{n})$$

$$4.73 \pm 1.96 (4.34 / \sqrt{44})$$

$$[6.01, 3.45]$$

From this we can say with 95% confidence that based on our sample, that the mean number of visits to the doctor for those aged over 40 will lie between 6.01 and 3.45.

7. Conclusions

We found that the more reliable a person would rate google as a diagnostic resource the more often they tend to self diagnose. This is more apparent in those aged under 40. This could be detrimental to ones health as we may have an unfounded level of trust in Google. The websites we use need to be unbiased, peer reviewed and evidenced based. There is a lot of information online coming from patient testimonies, case reports and industry/pharmacy led websites that are based on little to no clinical evidence which could lead people to wrong conclusions.

The results of our analysis also showed that the mean number of yearly visits to the doctor was higher in those aged over 40 compared to those aged under 40. While this may not be a particularly surprising discovery, the lack of visits for under 40s may be influenced by google. Most under 40s are googling more than over 40s which means they have a higher dependency on google. In turn, it is possible that under 40s are choosing to believe what they are reading online instead of getting a medical professional's advice despite many reporting that they have somewhat of a lack of trust in google.

We found that self-diagnosis through the internet more often than not has a negative impact on a person's mental health, with 60% of our respondents reporting that the information they read online had somewhat of a negative impact on their mental health. It is this that is giving rise to 'cyberchondria'(defined as the unfounded escalation of concerns about common symptomology based on review of search results and literature online), something that has the potential to become a very serious problem for both doctors and patients. This is due to the fact that when searching symptoms on the internet you are most often met with the most serious illness possible which is often something you are very unlikely to have.