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Infodemiology: insights into health information seeking

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The focus on health information has in the last decade taken on an enhanced importance both in research and in everyday use because of the growing emphasis on the client/patient in the health arena (Hill et al. 2013; Johnson & Meischke 2003). Individuals are able to influence their health in ways that have not been possible earlier, but they are also increasingly expected to choose between a multitude of alternatives in relation to health promotion and prevention as well as illness detection and treatment (Johnson & Case 2012). Partly because of the recent digital developments, health information is accessible anywhere and at any time. This allows people to act on health related information needs as soon as the needs arise. The internet has become a primary tool for health information seeking because of the ease and availability it offers, and millions of people surf the internet every day and use it? as a source for health-related information (Brigo et al 2015; Carneiro & Mylonakis 2009). According to statistics, 66% of the Finnish population aged 16–89 has searched for information related to disease, nutrition or health during the last three months. The percentage is higher, 88%, for the younger demographic segment of ages 25–34 (Official statistic of Finland 2015).

Google has reported that one in twenty searches, or four thousand searches per second, is health related or conducted to obtain health information (Abedi et al. 2015). The internet has been widely regarded as a potentially important health communication and education tool, and it has been shown that internet searches preceded patients' visits to physicians by one week, suggesting that people first consult the internet before going to a doctor (Eysenbach 2009).

The increasing number of online searches conducted using popular search engines generates big data, which can provide valuable information about online health-related behaviour. This big data can, and has been, analysed and utilised to predict and monitor public health and epidemics in real time (Eysenbach 2011). The application of internet data in health care research holds promise and can complement and extend the existing understanding of health related behavior (Nutti et al. 2014). It has even led to the rise of an interdisciplinary research discipline, infodemiology, which is defined as the study of the determinants and distribution of health information in an electronic medium with the ultimate goal to improve public health (Eysenbach 2009; Brigo et al. 2015). While

infodemiology was first used in the context of analysing the supply side, i.e. what is being published on the web, the scope of infodemiology also includes demand-based data, i.e. analysing needs and health information seeking behaviour. Bringing demand and supply indicators together could allow for fascinating insights into the dynamics and interactions between health information provision and health information seeking behaviour (Eysenbach 2009).

The aim, methods and contribution of the study

The aim of this article based doctoral dissertation is to study how infodemiological data can be utilised to broaden the understanding of health information seeking behaviour on the internet. This is done partly by analysing search engine data trends for different health related queries. Planned methods also include analysis of user behaviour in health related online resources as well as in social media. The dissertation is planned to be finished by the end of the year 2018.

Understanding the infodemiological aspects as well as the behavioural patterns of how people seek health information can help inform health care providers as to why, when and where people seek and find health information. This in turn can provide useful insights to planning health campaigns and health services. There are also contributions in developing tools and methods for health surveillance, as innovative ways of employing digital data to the study of health information behaviour emerge.

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