Time as a trigger for health information seeking

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Temporal traits, variations and patterns govern and regulate many aspects of life. This includes different health related issues and threats that trigger information needs and information seeking (Lambert & Loiselle, 2007). Within information science, the temporal context of information seeking has, according to Savolainen (2018), been approached in three different ways:

1. Time as a fundamental attribute of situation or context of information seeking.
2. Time as qualifier of access to information.
3. Time as an indicator of the information-seeking process.

Savolainen (2018) also states that time is an important contextual and situational factor of information seeking and information behaviour. Drawing on this, time or the temporal context can also be the situational factor or context for information seeking, because when an individual seeks information is as important as what he or she seeks (McKenzie & Davies, 2002). Despite a long-term interest in the issues of temporality, time as a factor and the temporal nature of information seeking is still an underexplored topic in information-behaviour research (Savolainen, 2018). Even though many information behaviour researchers have included time or temporality in their research, only a few have explicitly discussed or defined temporal issues such as they govern everyday life, as time

of day or seasons of the year (Chen & Rieh, 2009). Reasons for this are suggested to be the methodological barriers presented by traditional means of collecting data related to time, as time has been difficult to capture and comprehend, especially in the question of when an individual is seeking information (Eysenbach, 2009). However, recent advances in information and communication technology can help overcome some of these barriers, as almost all health-related behaviours online leave digital traces. Found online, especially in search engines, social media and websites, these digital traces provide temporal information of the information seekers' thoughts and actions in relation to their health (Ayers, Althouse, Johnson, & Cohen, 2014; Lambert & Loiselle, 2007).

The utilization of web data can be especially useful for stigmatizing diseases or other health phenomena where traditional data is insufficient or non-existing, and where individuals have been shown more likely to seek information about their problems online (Ayers et al., 2014; Eysenbach, 2009). For instance, utilizing search engine data for depression related health information seeking in Finland has shown clear and recurring patterns. On a 24-hour time scale, depression related information seeking has shown clear diurnal patterns, with significant rise in depression-related query volumes toward the evening and night (Tana et al., 2018). Depression related health information seeking also follow seasonal patterns, with peaks during autumn and spring and troughs during the summer months and mid-winter (Tana, 2018). Within depression research, both diurnal as well as seasonal variations have been shown to be somewhat irregular, and the presence and direction of these variations are decidedly inconclusive over time (Hasler, 2013; Powell & Clarke, 2006). Reoccurring trends and patterns for depression related health information seeking thus occur when considered collectively, suggesting that time, ranging from the different hours of the day to larger variations like seasons, influence and trigger health information seeking and needs (Ayers et al., 2014). These examples and initial steps could be developed further to discover larger temporal variations and patterns of different health information needs and seeking. Understanding the different temporal variations of health information seeking could be employed to enhance positive health outcomes by providing resources at the optimal time for intervention. This is usually when the majority of people with health information needs are engaged in the process of information seeking, and focusing their attention on the gap in their knowledge.

As previously stated time is an important contextual and situational factor and regarded as highly important within information science (Savolainen, 2018). Therefore, all temporal aspects should be taken into account within research, as this could potentially lead to the discovery of significant contextual dimensions within health information behaviour (McKenzie & Davies, 2002; Savolai-

nen, 2018). By utilizing digital traces to analyse temporal trends and patterns of health information seeking and needs, we begin to understand not only how, but also when, people make sense of their health. Information science could potentially have a lot to gain from studying digital traces to gain insights into different temporal dynamics and variations, especially within health information behaviour.

References

Ayers, J. W., Althouse, B. M., Johnson, M., & Cohen, J. E. (2014). Circaseptan (weekly) rhythms in smoking cessation considerations. *JAMA Internal Medicine*, *174*(1), 146–148. https://doi.org/10.1001/jamainternmed.2013.11933

Chen, S.-Y. (., & Rieh, S. Y. (2009). Take your time first, time your search later: How college students perceive time in web searching. *Proceedings of the American Society for Information Science and Technology*, *46*(1), 1–19. https://doi.org/10.1002/meet.2009.1450460253

Eysenbach, G. (2009). Infodemiology and infoveillance: Framework for an emerging set of public health informatics methods to analyze search, communication and publication behavior on the internet. *Journal of Medical Internet Research*, *11*(1). https://doi.org/10.2196/jmir.1157

Hasler, B. P. (2013). Diurnal mood variation. In M. D. Gellman & J. R. Turner (eds.), *Encyclopedia of behavioral medicine* (pp. 612–614). New York, NY: Springer New York. https://doi.org/10.1007/978-1-4419-1005-9_799

Lambert, S. D., & Loiselle, C. G. (2007). Health information—seeking behavior. *Qualitative Health Research*, *17*(8), 1006–1019. https://doi.org/10.1177/1049732307305199

McKenzie, P. J., & Davies, E. (2002). Time is of the essence: Social theory of time and its implications for lis research. *Proceedings of the Annual Conference of CAIS / Actes Du Congrès Annuel de L'ACSI*, *0*(0). http://www.cais-acsi.ca/ojs/index.php/cais/article/view/552

Powell, J., & Clarke, A. (2006). Internet information-seeking in mental health: Population survey. *The British Journal of Psychiatry*, *189*(3), 273–277. https://doi.org/10.1192/bjp.bp.105.017319

Savolainen, R. (2018). Information-seeking processes as temporal developments: Comparison of stage-based and cyclic approaches. *Journal of the Association for Information Science and Technology*, *69*(6), 787–797. https://doi.org/10.1002/asi.24003

Tana, J. (2018). An infodemiological study using search engine query data to explore the temporal variations of depression in finland. *Finnish Journal of eHealth and eWelfare*, *10*(1), 133–142. https://doi.org/10.23996/fjhw.60778

Tana, J., Kettunen, J., Eirola, E., & Paakkonen, H. (2018). Diurnal variations of depression-related health information seeking: Case study in finland using google trends data. *JMIR Mental Health*, *5*(2), e43. https://doi.org/10.2196/mental.9152