

Web discussions on cardiovascular diseases: assessing the impact of COVID-19 pandemic. An Italian prospective analysis

Magni P.¹; Cecchini I.²; Fortunati M.²; Biroli M.³; Massaroni K.⁴; Folco E.⁵; Giudice D.⁵; Montebelli M.⁵; Ciancamerla G.⁶

¹Universita' degli Studi di Milano, Milan, Italy

²IQVIA, Primary Market Research, Milan, Italy

³Humanitas University, Milan, Italy

⁴Sanofi Italia, Milan, Italy

⁵Fondazione Italiana per il Cuore, Milan, Italy

⁶Conacuore, Modena, Italy

Funding Acknowledgements: Type of funding sources: Private company. Main funding source(s): Non-conditioning grant from Sanofi Italia.

Background. Awareness and risk knowledge are the first steps along the complex journey leading to effective primordial, primary and secondary cardiovascular disease (CVD) prevention. Interactions among people significantly influence awareness and personal beliefs and favour behavioral changes. Given the increased use of Internet to search information and share experiences on health, Web and social media represent innovative health-information-gathering sources, facilitating interactions and information exchanges able to influence health-related behaviour.

Purpose. This study is based on a longitudinal Web listening analysis approach, aimed at analyzing and comparing Web discussions collected before the COVID-19 pandemic (February 2018–February 2020) with those occurred during the first pandemic wave in Italy (March–July 2020).

Methods. A preliminary analysis of the data indexed by prominent search engines (i.e., Google) was performed, followed by a systematic process of data collection. Automated data identification was analyzed using data mining techniques, machine learning and Natural Language Processing (NLP) algorithms. This analysis was integrated by a qualitative analysis.

Results. In Italy, over the entire study timeframe, Web conversations associated to health topics were primarily focused on vaccines and tumors, and discussions on CVDs (about 235,000 conversations) were only at the 5th place. The main topics of the conversations concerned symptoms (25%), treatments (18%), causes of disease (14%), quality of life (13%). Conversations on prevention were marginal (only 5%). During the pandemic timeframe discussion topics were focused on the growing COVID-19 risk for people with CV comorbidities, the risk linked to CVD therapies and the difficulties and delays in accessing hospitals. Over 80% of patients were not satisfied about their caring experience and such dissatisfaction grew stronger during the pandemic. In this period, anxiety, frustration, fear and depression were the mainly mentioned feelings. A good relationship with physicians (empathy, understanding) was mentioned by patients as a key factor of a positive caring experience.

Conclusions. The limited attention to CVDs and their prevention registered through the conversations on the Web is not consistent with the epidemiological relevance of such diseases in terms of health risks and mortality. Given the crucial role of Web interactions in influencing beliefs and health-related behaviours, this study highlights the urgency to promote novel prevention strategies and to engage people leveraging digital channels and social media. The COVID-19 pandemic worsened the quality of relationship and contact with physicians. Such evidence underlines further the need to develop novel models of patient management - even remotely (digital tools, telemedicine), to encourage citizen/patient involvement and empowerment.