Happy or lonely? Investigating Dutch people's mental well-being using remote methods during the COVID-19 pandemic

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The COVID-19 pandemic lasted from early 2020 to May 2023, according to the WHO. The virus itself and the policies enacted around the outbreak impacted mental health and digital interactions around the world. This research contributes to the understanding of well-being in The Netherlands during the pandemic by employing mixed-remote methods. Remote methods were selected out of necessity in 2020, when social distancing rules prevented in-person research. However, as the methods have proven useful, these can be employed for future research as well, either as the main method of data collection or alongside more traditional methods in well-being research. Concretely, sentiments of the Dutch public expressed on X (formally Twitter) were analyzed with NLP techniques, using filtering on the Twiqs corpus that contains a near-complete set of Dutch language tweets from 2020. Trends were measured and compared within different time periods. A manual annotation procedure allowed insights into messages focused on the author's wellbeing vs. commentary regarding other affected people. Analysis focused on various demographic groups, user recurrence, topics such as sport and exercise, and seasonal effects. Additionally, co-creative toolkits and probes were used with 15 older adults and 21 students for detailed in-situ capturing. The toolkit for older adults contained a custom designed activity diary, activity rating cards, an elastic fitness band and a booklet containing tips and trick for mental and physical wellbeing, such as exercise tutorials, tips for video conferencing, and apps for physical and mental well-being. This toolkit was used for a week. The student study consisted of an introductory online session to identify themes, followed by self-designed toolkits using elements such as diaries to depict positive moments, daily activity schedules with recipes and tea bags, drawing kit assignments, and probes for visual and audio recording. The NLP approach provides general insights, while toolkit studies can address interpersonal variation and provide non-automated individual feedback. Findings indicate that the pandemic has impacted the expressed emotional states of "loneliness" and "happiness", with a large increase for loneliness at the start of the pandemic in 2020, and an increased seasonal effect compared to 2019 and 2021. Tweets mentioning happiness were usually about the author, while tweets about loneliness are often about other people. Users mentioning happiness post more messages than average users. There are differences between groups, such as young and old or professionals vs. family relations. The toolkits provided contextual self-reflective insights and inspiration for of mental well-being. The effect of this method is therefore twofold: it provides research data and insights into well-being, while also providing participants with activities and awareness to improve their mental health. Future work is needed to, for example, incorporate more semantically-oriented filtering and analysis techniques for the social media data. The toolkits can be generalized to post-pandemic issues, and potentially aimed more at intervention. Finally, while the complementary techniques already provide an interesting joint perspective, the two methodologies can be integrated more closely to increase the mutual benefit of the combination of approaches.