Universität Basel

Research Project

„Comparing Natural Language Processing (NLP) with Qualitative Research Methods to Understand Coping Mechanisms of HBOC-affected Women"

Third-party funded project

Project title „Comparing Natural Language Processing (NLP) with Qualitative Research Methods to Understand Coping Mechanisms of HBOC-affected Women"

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Carrying a pathogenic variant associated with hereditary breast ovarian cancer (HBOC) and subsequently developing an HBOC-associated cancer triggers a variety of emotional reactions and places extraordinary demands on women's coping abilities. My goal is to better understand how these women cope with their specific situation by applying machine learning techniques via natural language processing (NLP). To study individual coping mechanisms, I will use narrative data derived from qualitative interviews with female HBOC-mutation carriers that have been conducted within the CASCADE and DIALOGUE studies in German, French and Italian, as well as additional interviews that I will conduct within this study. Furthermore, I will have access to narrative data from 150 interviews that have been conducted at Boston College, US, and focus on HBOC-affected women, genetic testing, and coping.

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The transcripts will be analyzed with both natural language processing techniques (NLP, sentiment analysis) and traditional qualitative methods (grounded theory method after Strauss and Corbin, constant comparative method after Glaser) with the aim to identify individual stressors and coping mechanisms of female HBOC-mutation carriers. I will explore if NLP methods can generate codes that support or augment qualitative codes, and if NLP is able to simplify and partially replace traditional qualitative analyses. By clarifying HBOC-carrying women's individual needs and coping strategies, healthcare professionals and therapists will be able to better support them during vulnerable and demanding times related to treatment decision-making, family communication regarding the pathogenic variant, and maintaining an equilibrium between social, family, and potentially professional roles.

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