Social Support Dynamics and User Engagement in a Diabetes Online Community using Text Mining

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Keywords

social media, social support, text mining, type 2 diabetes, user engagement

1. Introduction

Type 2 diabetes patients experience continuously changing needs and medical decision-making challenges during the different transitions of their disease, from pre-diagnosis into treatment [1]. The demanding self-management regimes of this disease can cause patients to feel emotionally distressed, frustrated and discouraged [2]. Online health communities have become significant sources for individuals with chronic conditions to obtain and provide distinct types of social support from peers having similar health problems [3]. The type and amount of social support may provide opportunities for members to make informed decisions, achieve better health outcomes, and reduce health-related emotional stress [4]. However, no research to date has investigated what social support categories may contribute to users' continued engagement in these platforms according to the different stages of their disease. This is important to understand in order to promote online community sustainability and effectiveness for their users. The aim of the study is to assess and evaluate what types of social support activities influence users' sustained engagement in an online diabetes discussion forum, taking into consideration different stages of Type 2 diabetes. This abstract describes the proposed methodology, based on which the poster will present preliminary results.

2. Methods

The proposed study will use a mixed-methods design. Following ethical approval and agreed licence, data will be obtained from the Diabetes.co.uk, one of the largest online diabetes forums in Europe. A purposive sampling technique will be applied to target a population of users with different Type 2 Diabetes stages, who use the "Prediabetes" and "Type 2 Diabetes" discussion categories in the forum. This study will involve two phases. Text mining and supervised machine learning techniques will be applied to manually annotate and automatically classify the types of social support sought and provided in approximately 2000 posts. The Optimal Matching Model will guide the classification of social support in this study, which proposes that the nature and controllability of a stressful situation determines what type of social support will likely be most beneficial for an individual [5]. These results will then be applied for the users' engagement analysis, where users' posting activity information (e.g. date of their last post) and survival analysis will be employed. The poster will present the theoretical framework that guides this study and the initial findings regarding the potential social support categories present in users' posts.

ISBN: 978-91-89081-09-3

3. Conclusions

The proposed research can potentially be valuable and be translated into important applications for multiple stakeholders. The automated detection of social support and engagement analysis may establish foundational concepts for further research and provide insights for the management and design of sustainable groups for online communities' managers to enhance better support mechanisms and effective users' retention strategies. Furthermore, the outcomes may be used for strategic approaches to improve the communication, engagement, and relationship between healthcare professionals and type 2 diabetes patients.

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