Investigating Information and Support Interaction Patterns in an Online Health Community

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Online health communities (OHCs) are vital platforms for people to share experiences, seek health information, and exchange support; much has been written to explore health information behavior in these and other community platforms (Chuang & Yang, 2014; Oh et al., 2016; Rubenstein, 2015). Previous research has studied factors that affect the dynamics of online communities (Kaplan et al., 2017; Kraut & Resnick, 2012). Existing literature has also examined the role of moderators, or discussion facilitators, in OHCs by analyzing the content of communication (Huh et al., 2013) and through interviews (Coulson & Shaw, 2013). Few researchers, however, have employed social network analysis (SNA) to better understand the activity of moderators.

SNA is a research method that can be used to investigate social interactions in online communities (Zaphiris & Sarwar, 2006). Online communities can be thought of as social networks comprised of connected persons via the messages that they exchange. Previous SNA research has examined interaction patterns between participants within online communities (Chang, 2009; Pfeil & Zaphiris, 2009), but analysis of interactions between moderators and participants is lacking. Characterizing the role that moderators play and their effects on participant engagement could strengthen our understanding of participants' information needs and improve the viability of the online community as a venue for support and health information exchange. This poster employs a combination of content analysis and SNA to explore moderator and participant interaction patterns within VOCALE, a health-related online community designed to facilitate health management and problem-solving in people age 65

and older experiencing bothersome age-related symptoms such as fatigue, weakness, and walking difficulty.

VOCALE is structured in three rounds, each occurring over a period of 8-10 weeks. In these rounds, participants engaged in an asynchronous online discussion with other participants, facilitated by a moderator who was a member of the study team and has received training in performing the moderator role. To explore community dynamics, we performed content analysis of the messages exchanged over three rounds (N=844). Content analysis is a method in which communications are assigned codes that can thereafter be compared (Riffe et al., 2014; Strijbos et al., 2006). We developed a coding scheme comprised of 18 codes grouped into four categories: emotional support, esteem support, informational support, technical issues, based on prior literature (Chen et al., 2021; Cutrona & Suhr, 1992).

After performing content analysis, we used descriptive statistics to characterize the amount and type of messages exchanged between moderators and participants, and among participants themselves. In all three rounds, more messages were exchanged between moderator and participant than between participants. In terms of moderator-participant interactions by different message categories, informational support was most common in the first two rounds, and informational and esteem support were similarly common in round 3.

Though from these statistics, we understood that information, and to some extent esteem support were central to this online community, questions remained about the roles that moderators and participants played. To better understand the flow of information, we rendered network visualizations for each of the four message categories, in which persons (either participants or moderators) were connected to one another if they had exchanged messages within the corresponding category with one another. In each network, the strength of the connections between the persons was determined by the number of messages of that type that were exchanged between the two persons. Visual inspection of the networks showed

differences in moderator-participant and participant-participant interactions by message category. In our poster, we plan to share our results, jointly explore the interaction patterns, and discuss implications for online health community design with SIG-USE attendees.

Our work adds to the dialogue on methods for real-world impact in information behavior in various ways. We demonstrate how content analysis and SNA can be used to first characterize the information exchanged and then model interactions between moderators and participants. In so doing, we demonstrate that these two methods can be used synergistically to enable a deeper examination of roles moderators play in OHCs. In our poster presentation, we hope to engage attendees in a lively dialogue about how researchers can employ a blend of content analysis and social networks to explore the role that moderation style can have on the exchange of information and support, in health and other contexts.

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