Online group interaction and mental health:
An analysis of three online discussion forums

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The present study examined interactions on three Norwegian online discussion forums, and attempted to identify differences in interactions and plausible outcomes of thematically dissimilar forums. Four categories were applied to the forums in order to distinguish potentially constructive and destructive uses. Interaction along the constructive-destructive dimension was contingent upon the themes discussed, as well as the level and nature of professional involvement. Interaction adhering to a destructive dimension was identified only in relation to the forum for eating disorders. Discovering to what extent theme and professional involvement influence interactions in discussion forums might guide further professional involvement in online group settings and the design of appropriate online environments.

Key words: Internet, interpersonal relations, self-help groups, social support, telemedicine.

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Health-related issues are among the most popular themes being discussed on the Internet. Websites targeting mental health are a major part of the total number of websites addressing health issues (Aanonsen, 2000). Activity on many of these appears to resemble traditional self-help groups (Finn & Lavitt, 1994; King & Moreggi, 1998; Lebow, 1998; Madara, 1997; Salem, Bogat & Reid, 1997).

Reasons for participation are probably individual and diverse. However, some argue that anonymous online environments might be particularly attractive for individuals with a concealable stigmatized identity or a mental disorder. These individuals could experience disproportionate levels of distress when seeking information, advice and support in “real life” (Davison, Pennebaker & Dickerson, 2000; McKenna & Bargh, 1998). Online discussion forums might thus represent a less stigmatizing and distressing alternative for accessing these resources.

Several types of online interaction have been studied, including those addressing obsessive-compulsive disorder (Stein, 1997b), eating disorders (Winzelberg, 1997), sexual abuse (Finn & Lavitt, 1994), and anxiety/depression (Salem et al., 1997). Overall, positive outcomes of participation in online or computer-mediated group settings have been reported. Among these are increased problem-solving skills, the overcoming of alienation and isolation, reduced stress levels (Dunham, 1996, in King & Moreggi, 1998), and the development of social networks (Elstad, 1999; Finn, 1993). However, destructive outcomes of online participation are also found, including social isolation (Kraut et al., 1998), Internet addiction (Stein, 1997a; Young, 1996), and the fulfilment of suicidal pacts (Bugge & Vikoyr, 2000).

At least two factors may account for such different outcomes. First, themes might influence the way participants interact. Finfgeld (2000) described the interactions in forums addressing eating disorders as less intimate and less supportive than the interactions in cancer support groups. Moreover, bulimics seem to communicate differently from individuals suffering from anorexia nervosa (Gleason, 1995). If aspects of participants’ interaction are related to the outcomes they experience, it appears likely that such variations are a precipitating factor in creating differential outcomes. Second, similar to offline groups (Toro et al., 1988), the nature and level of professional involvement might also influence online self-help groups. Better indications of the extent to which factors such as theme and professional involvement influence the interactions in discussion forums might guide further professional involvement in online group settings and the design of appropriate online environments.

This exploratory study aims to describe the interactions in online discussion forums, and is based on the activity of three “Doktor Online” forums. We expected the interactions to include both elements of social support, and differences along a constructive-destructive dimension with respect to the themes that were discussed and the level of professional involvement. Such differences might affect the outcomes of online participation. This was actualized when Doktor Online closed its weight and eating disorders forum due to what was described as “destructiveness”. The results of this study might indicate which measures could be undertaken to ensure that online interactions are being led in a health-promoting direction.

METHOD

This study analyses discussion group activity on one of the predominant Norwegian health sites targeting the Norwegian Internet population (an estimated 2.39 million people from a population of 4.5 million have access to the Internet) (Norsk Gallup AS, 2000).
The health site, Doktor Online (www.doktoronline.no), facilitates a wide range of discussion forums where the public participate through the submission of main-posts, an electronic message somewhat similar to an e-mail, and through responses to these main-posts. The responses to a main-post result in the formation of a topic thread, enabling the participants to follow a specific theme over a period of time. Three of the mental health forums were selected for this study: general psychiatry, weight and eating disorders, and abuse. At the time of the study, professionals participated in and monitored forum activity to varying degrees. A psychiatrist attended the general psychiatry forum, while a general practitioner attended the weight and eating disorders forum. No professional involvement was registered in the abuse forum.

The analysis was based on all posting activity that took place during four weeks of November 1999 within each of the three mental health discussion forums on Doktor Online. The users were ensured anonymity and were informed that their contributions to the forum would be archived and possibly subjected to analysis later on. The regional ethical committee approved this procedure. The archived posts were kept as hypertext files (html format) on a local hard drive and loaded into a spreadsheet for easy access during the analysis.

The analysis was performed by submitting the archived posts to a forced entry analysis based on the four general categories “constructive/positive”, “neutral”, “negative”, and “destructive” (Table 1). This enabled us to differentiate between forums and compare them with respect to the interactions in each forum.

These categories are derived from distinctions made earlier between positive and destructive outcomes of online participation. Also, reported qualitative differences in interaction suggest the applicability of categories in order to explore and describe online interaction. The term “destructive” and similar terms have been utilized and proven feasible in previous analyses of online interaction (Finn & Lavitt, 1994; Waldron, Lavitt & Kelley, 2000). The “destructive” category is in particular characterized by comments idealizing the disorder and aggression, while the “negative” category encompasses expressions of resignation and sadness likely to be present in these forums. The “constructive” and “positive” categories were merged since trials showed that they were difficult to distinguish and thus unreliable.

The categories were applied to the forum activity by the first author as well as an independent rater. To ensure inter-rater reliability, the raters went through a training session applying these categories to a random selection of posts from online discussion forums. In the actual analysis, the main-post and the topic threads were rated according to the raters’ impressions. The topic threads to each main-post were analyzed as a unit to form a single impression. In this way one could study how different main-posts facilitate different responses, as well as compare the thematically different forums. Examples of the different categories as they were utilized in the analysis are shown in Table 2.

The inter-rater reliability for main-posts and topic threads was 0.80. Matching the main-posts and topic threads predictably lowered the reliability range to 0.60–0.70. The inter-rater disagreement was resolved by discussion, leaving a unified set of data.

**RESULTS**

**Discussion forum for general psychiatry**

The forum for general psychiatry was significantly larger than the other forums, consisting of a total 407 main-posts. There were 1,258 responses distributed across 373 topic threads, giving an average of 3.4 responses per main-post. A randomized sample was made by selecting every fourth main-post/topic thread pairing, due to the large number of posts on this forum. With this procedure 102 main-posts and 93 topic threads were included in the analysis. Professional involvement consisted of 140 posts, the majority within topic threads, constituting 34% of the total number of posts on this forum.

<table>
<thead>
<tr>
<th>Category</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructive/positive</td>
<td>It has been a while since I wrote something here. The last few days haven’t been so bad. . . . I’m actually feeling better [and] it’s going to be just fine. . . . Thanks to all you people who support your loved ones who are in pain. It’s good to have you here! It’s doubtful that it will all be uphill from now on. I’ll probably have to reach bottom a few more times before it stops hurting. But, there is hope.</td>
</tr>
<tr>
<td>Neutral</td>
<td>A clinical psychologist is a psychologist that are a specialist in clinical psychology. . . . A psychologist is, on the other hand, a person interested in all psychological approaches . . . a psychiatrist is a doctor specializing in the treatment on mental abnormalities.</td>
</tr>
<tr>
<td>Negative</td>
<td>I feel so fat and ugly! 65 kilos distributed across 169 cm. Is this a lot? What is normal? I feel horrible. [I’ve had] eating disorders for almost a year now. [I] can barely remember how it felt having a normal relation to food . . .</td>
</tr>
<tr>
<td>Destructive</td>
<td>What is the point of getting well when I will turn so fat that medical tests tell me that I have a health threatening stomach-to-hip ratio? Getting well is just non-sense. [Now] I will go on a diet, but fail and then start binge eating and vomiting again. That is what is best for me. I was much better off before I quit vomiting daily.</td>
</tr>
</tbody>
</table>

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from professionals, a majority of which were within topic average therefore received 3.8 responses. Fourteen posts were used over 101 topic threads; each main-post to the forum on main-posts, which yielded a total of 387 responses distributed over 108 topic threads. The postings to the eating disorders forum consisted of 111 main-posts, which generated 404 responses distributed over 108 topic threads. This provided each main-post with an average of 3.7 responses. No professional activity was registered.

In this forum the majority of the main-posts were again “negative” (34%, n = 38). The highest number of “destructive” main-posts was found on this forum (14%, n = 16). Still, the majority of topic threads (69%, n = 69) were categorized as “constructive/positive”. Topic threads categorized as “destructive” made up 6% of the total number of threads (n = 6) (Table 3).

Of the 38 main-posts categorized as “negative”, 95% (n = 36) received responses, and 92% (n = 33) of these topic threads were categorized as “constructive/positive”. Moreover, 6% were “negative” (n = 2), and 3% were “neutral” (n = 1). No “destructive” topic threads were identified for these main-posts.

The “destructive” main-posts constituted 14% (n = 16) of the main-posts. Of these, 94% (n = 15) received responses. Of these topic threads, 47% were categorized “negative” (n = 7), 40% “destructive” (n = 6), while 13% were “constructive/positive” (n = 2). No “neutral” topic threads were identified for these main-posts.

Of the main-posts, 48% were categorized as “negative” (n = 49) and 46% as “neutral” (n = 47), while the “constructive/positive” (n = 45) and “neutral” (n = 45) categories each accounted for 48% of the topic threads (Table 3).

Furthermore, the 49 “negative” main-posts received topic threads with a response rate of 98% (n = 48). Of these, 71% were labeled “constructive/positive” (n = 34), 23% were categorized “neutral” (n = 11), 6% “negative”, and no topic threads were considered “destructive”. The only “destructive” main-post received a “positive” topic thread.

Discussion forum for abuse

The abuse forum consisted of 121 main-posts, which generated 404 responses distributed over 108 topic threads. This provided each main-post with an average of 3.7 responses. No professional activity was registered.

In this forum, the “negative” main-posts dominated (56%, n = 68). In contrast, the topic threads were mainly labeled “constructive/positive” (79%, n = 85) (Table 3).

Analyzing the 68 “negative” main-posts separately, these received topic threads with a response rate of 99% (n = 67). The topic threads were mainly categorized as “constructive/positive” (84%, n = 57). Only 6% were classified as “neutral” or “negative” (n = 4), and 3% were “destructive” (n = 2).

The “destructive” main-posts accounted for 5% of all main-posts (n = 6). These received six topic threads (a response rate of 100%), all of which were “constructive/positive” (n = 6).

Discussion forum for eating disorders

The postings to the eating disorders forum consisted of 111 main-posts, which yielded a total of 387 responses distributed over 101 topic threads; each main-post to the forum on average therefore received 3.8 responses. Fourteen posts were from professionals, a majority of which were within topic threads. The professional activity on this forum constituted 2.8% of the total activity.

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communication (Joinson, 1998). Four months following the
data-gathering phase, the weight and eating disorders forum
was closed temporarily due to “destructive tendencies”. The
forum was reopened four to five months later with supervi-
sion from two professionals with special competence in eat-
ing disorders.

One reason for the destructive climate might be the homo-
geneous nature of participants in the eating disorder forum.
As reported in an associated study (Kummervold et al.,
2002), 92% of the participants in Doktor Online’s eating
disorders forum consisted of women, and the group below
18 years of age was larger than in the other discussion
forums. Thus, the participants of the eating disorders forum
might have had a shorter duration of illness, and, hence, a
limited experience with the long-term negative consequences
of eating disorders. They might therefore exhibit less suffer-
ing and more denial of symptoms. Idealizing comments with
respect to symptoms might thus be expected. Moreover,
compared with other disorders, eating disorders consist of
self-inflicted behaviours as means to gain personal control
and perceived autonomy. In contrast, it would be less likely
to imagine participants of a discussion forum dealing with
depression to idealize their condition and symptoms,
although idealizing comments about the act of suicide did
occur. In the general psychiatry forum both the “neutral”
and “negative” categories were dominant for the main-posts.
In comparison, the “negative” category dominated the
main-posts of the abuse forum.

The psychiatrist of the general psychiatry forum was
about ten times more active than the professionals of other
forums. In this forum, the participants used the attending
psychiatrist as a source of practical and factual information,
and they sought this information actively, by direct ques-
tioning. Professional activity on the other forums had a
monitoring role, in that their presence was less apparent.
They responded periodically to the ongoing discussion
between participants, rather than providing answers to spe-
cific questions. This suggests that professionals’ roles in a
discussion forum might influence interaction in ways similar
to offline groups (Toro et al., 1988).

Our study also indicates that variations of thematic focus
influence interaction. The forum for general psychiatry
encompassed a wider range of problems and themes, and the
participants were more heterogeneous in age, compared with
the other, more theme-specific forums. We suspect that the
label “psychiatry”, which refers to a general field of issues,
encouraged the participants’ use of this forum as a source of
factual information. The other forums signaled disorder-
specific issues for discussion.

It is important to underline the broad nature of the cat-
egories and the explorative aim of the study. The cat-
egories are aimed at describing interaction patterns and not
underlying personal dispositions. Also, little is known how
interactions in online forums transform into real-life
consequences for the individual. For example, it is possible
that expressions we term “destructive” could have construct-
ive consequences.

There is a need for greater professional involvement in
online discussions of eating disorders than in forums
addressing other kinds of disorder. In particular, the partici-
ants might need more help discussing negative affect and
dysfunctional cognitive thoughts in non-destructive ways.
The solution adopted by most serious providers of online
discussion forums is to provide professional supervision,
as well as presenting the participants with suggestions for
appropriate conduct. This is similar to Preece’s (1999)
description of the need for balance between therapeutic
communication and factual information.

In future efforts to better understand and facilitate online
mutual help groups, existing social psychological theories
will need to come to grips with asynchronous, text-based
environments which are bereft of the sensory inputs associ-
ated with face-to-face encounters. Similarly, approaches to
psychotherapy might find new relevance in an online setting.
For example, Laszlo, Esterman and Zabko (1999) argue that
cognitive-behavioural theories promise high compatibility
with a text-based medium. The degree to which therapeutic
practices are suited to an online setting is another issue in
need investigation, perhaps through the exploration of con-
structs like McGrath and Hollingshead’s (1994) task-media
fitness. This construct explores the relationship between
characteristics of the task at hand (e.g. tasks that require
generation versus more cognitively sophisticated tasks) and
the degree of “media richness” (e.g. text-based, audio, video
and face-to-face systems). Studies generated by this construct
have typically focused upon practical and job-related tasks,
but should be expanded to examine emotionally laden or
stigmatizing information, such as is encountered in therapy.

This study provides an indication of the complexities that
underlie the activities that take place on the Internet, and is
by no means conclusive. However, attention should be given
to the tendencies described here in order to understand and
facilitate interaction within online mutual help groups, in
the cause of health promotion.

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