Support Exchange on the Internet: A Content Analysis of an Online Support Group for People Living with Depression

by

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Abstract

Online support groups have shown a strong potential to foster resourceful environments for people living with depression without restrictions of time, space, and stigma. Research has found that users of those groups exchange various types of support. However, due to the scarcity of research, many other aspects of depression online support groups remain inconclusive. In particular, how the support exchange contributes to the everyday lives of users living with depression remains unclear.

To contribute to filing some of the knowledge gaps, the present study explored what kinds of support were requested and provided in a depression online support group. By doing so, this study aimed to examine the roles of the depression online support group in the management of depression.

Mixed methods were employed with a concurrent triangulation strategy. A sample of 980 posts were selected systematically from the support group. Demographic and clinical information of the users who made those posts were recorded. Quantitative and qualitative

content analyses were conducted to examine the types of support being exchanged through those posts. Inter-coder reliability was calculated to ensure the consistency of the coding process.

The results indicate that users sought informational support, various types of emotional support and coaching support, and social companionship. Users not only sought listening ears, but also practical advice to cope with the situations they were going through. The group appeared to serve its users as a place to meet others with similar experience; to manage loneliness; to discuss what they could not discuss elsewhere; to "just vent"; to gain advice from multiple perspectives on an issue that had been magnifying the impact of depression; to share the experience with formal care provision systems; to express immediate support needs; to share useful discoveries, accomplishments, and creative ways to manage depression; and to experience the value of helping others. This study supports the idea that depression online support groups have the strong potential to contribute to the everyday lives of people living with depression in a way that is not available elsewhere and in a way that complement to the overall framework of existing care provision systems.

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Chapter 1: Introduction

1.1 Epidemic of Major Depressive Disorder: The number of people suffering from major depressive disorder is increasing worldwide. Today, the illness affects 350 million people in the world (World Health Organization, 2012) and 2.5 million people in Canada (Public Health Agency of Canada, 2002). Depression is the leading cause of disability for people of all ages and both genders around the world (WHO, 2012). A World Health Assembly resolution in May 2012 emphasized the pressing need for a comprehensive, coordinated response to the disorder at country level (WHO, 2012).

The rapid increase in the number of depression patients emphasizes the need to consider the ways that the illness has historically been and is currently diagnosed and treated. In diagnosing major depressive disorder, there is no biological marker or gene that indicates the presence of the illness (Gruenberg, Goldstein, & Pincus, 2005). Thus, physicians conduct a psychological examination of patients based on diagnostic criteria described in established classification systems of mental illnesses, such as the Diagnostic and Statistical Manual of Mental Disease Fourth Edition (DSM-IV). Since its first publication in 1952, the DSM has been revised five times; each edition has included more mental illnesses. The latest edition published in 2000 (DSM-IV Text Revision) includes 365 mental illnesses; this is more than three times as many illnesses than included in the first edition, which listed 106 illnesses. A review of the history of the classifications of mental illnesses demonstrates that their categories have expanded over time.

Marcia Angell (2012) questions whether the prevalence of mental illness is truly increasing or whether the increased number of diagnosis is a reflection of definitions having expanded to such an extent that almost everyone could be diagnosed with a mental illness. Angell cites a survey conducted by the National Institute of Mental health (NIMH) between 2001 and 2003 (Kessler et al., 2005) indicating that, at some point in their lives, 46 % of Americans could have been diagnosed with at least one of four mental illness categories (anxiety disorders, mood disorders, impulse-control disorders, and substance use disorders).

1.2 Definitions of Major Depressive Disorder: The changing definitions of major depressive disorder in the DSM exemplify the points made by Angell. Major depressive disorder was defined in the first edition of the DSM (American Psychiatric Association, 1952) as a

reaction to an external event. It listed "depressive reaction" under the category of psychoneurotic disorders and described it as an excessive reaction "precipitated by a current situation, frequently by some loss sustained by the patients, and is often associated with a feeling of guilt for past failures or deeds" (p. 33). The second edition (APA, 1968) renamed the term "depressive neurosis," describing the condition as the disorder "manifested by an excessive reaction of depression due to an internal conflict or to an identifiable event such as the loss of a love object or cherished possession" (p. 40). In both editions, ambiguity characterized the definitions and causes of the condition.

The term "major depressive disorder" was introduced in the third edition (APA, 1980) and was accompanied with drastic changes in the definition of the condition, emphasizing dysphoric mood or loss of interest or pleasure in all or almost all usual activities and past times. Dysphoric mood is defined as having "depressed, sad, blue, hopeless, low, down in the dumps, and irritable" symptoms (p. 213). The third edition also provided specific descriptive diagnostic criteria. For a diagnosis of major depressive disorder, at least four of the following symptoms must be present nearly every day for at least two weeks:

> 1) poor appetite or significant weight loss; 2) insomnia or hypersomnia; 3) psychomotor agitation or retardation; 4) loss of interest or pleasure in usual activities; or decrease in sexual drive; 5) loss of energy; 6) feelings of worthlessness, self-reproach, or excessive or inappropriate guilt; 7) complaints or evidence of diminished ability to think or concentrate or indecisiveness not associated with marked loosening of associations or incoherence; and 8) recurrent thoughts of death, suicidal ideation, wishes to be dead, or suicide attempt.

The fourth edition (APA, 1994) added "depressed mood most of the day, nearly every day" (p. 327) to the above eight criteria listed above. The fourth definition states that, in order to receive a diagnosis, at least five of the symptoms have to be present during two consecutive weeks and one of the symptoms must be either depressed mood, or loss of interest or pleasure (p. 327). The same diagnostic criteria were kept in the version of the DSM published in 2000 (DSM-IV Text Revision). The above history of major depressive disorder illustrates that there is no single, stable, or definitive definition of this disorder. Rather, there is a collection of specific symptoms

expected to be presented in patients deemed as living with major depressive disorder. Therefore, the diagnosis of major depressive disorder depends on a physician's judgment and the classification system he or she uses at the time of consultation.

The fifth edition of DSM was published in May 2013. A major change to the diagnosis of major depressive disorder relates to the inclusion of criteria associated with bereavement. While the previous edition stated that the diagnosis should not be made if the symptoms follow the loss of a loved one (APA, 1994, p. 327), the fifth edition removed this exclusion criterion. As a consequence, symptoms that have been considered "natural" reactions to grief prior to the publication of the fifth edition can be judged to be symptoms of a major depressive disorder. This change is likely to lead to an even higher frequency of diagnoses of major depressive disorder with a concomitant increase in prevalence estimates. Some healthcare professionals expressed their concerns that the change may result in over-diagnosis of depression, unnecessary prescription of antidepressants, and reduced tolerance for grief (Parry, 2013; Sabin, 2012) . Lay people may also misuse the DSM-V to self-diagnose the illness and seek medications to alleviate pain associated with grief.

1.3 Medicalization of Health: The tendency to treat quotidian human conditions as medical problems and to consider them as the focus points for diagnoses or treatments is not new. Sociologists in the 1970s coined the term "medicalization" to describe this tendency, and viewed it as a form of social control by medical authorities over the everyday lives of ordinary people (Conrad, 1975). From this perspective, the broadening diagnostic categories of the DSM can be seen as an example of the ongoing medicalization of mental health. The DSM has been developed for the purpose of improving communication among clinicians, enhancing understanding of mental illnesses, and promoting more effective treatments (Gruenberg et al., 2005). The expansion of illness categories in the DSM can, in fact, create more opportunities for medical authorities including pharmaceutical companies, to justify their intervention and promotion of their medical products in broader areas of the everyday lives of ordinary people.

In fact, the medicalization of mental health goes hand in hand with the expansion of the pharmaceutical industry. Wider categories and scope of mental illnesses create more opportunities for drug companies to promote their products not only to ordinary people but also to health care professionals. Angell (2012) provides multiple examples that illustrate the

powerful impact of the pharmaceutical industry on the practice of psychiatry, emphasizing that despite the fact that the benefits and harms of psychoactive drugs are still under investigation, the majority of psychiatrists have used medication to treat their patients with depressive symptoms. Some medical researchers even argue that the drugs do more harm than good by causing side effects and withdrawal symptoms that are worse than the illness itself (Whitaker, 2010). In this way, medicalization, broader classifications of mental illnesses, and pharmaceutical companies exert a powerful force in determining what is considered healthy and unhealthy as well as how unhealthy conditions should be treated.

1.4 New Conceptualization of Health: Concerned by the inclination toward the medicalization of health, Huber et al. (2011) reviewed how the concept of health has been established in order to clarify the goals of health care. In 1948, the WHO (World Health Organization) provided a definition of health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 2006, p. 1). The same definition is used currently. This definition, however, contributes to the medicalization of health, as almost nobody could claim to have "complete" physical, mental and social well-being, considering the global increase of aging population and expanding illness categories of diagnostic manuals. The WHO's definition is also problematic since it labels people living with chronic illnesses and disabilities as being permanently ill. Considering these limitations, Huber et al. (2011) proposed a new view on health as "the ability to adapt and self manage" (para. 9) with three domains: physical health, mental health, and social health. These researchers are aiming at developing a re-conceptualization of health that could facilitate "de-medicalized" approaches to service design, measurement, and evaluation.

1.5 Reassessment of Treatment Options for Major Depressive Disorder: Against this background, there is a clear opportunity to re-evaluate options available for the management of major depressive disorder. Psychoactive drugs may still play a role, but their benefits and risks are still under investigation. Systematic reviews of literature have identified various non-pharmacological approaches that have been used for the management of depression, such as psychological therapies, exercise and lifestyle interventions, and complementary and alternative treatments (Dhingra & Parle, 2011; Dirmaier et al., 2012). Among those options, there is strong and consistent systematic evidence indicating that cognitive behavioural therapy (CBT),

interpersonal therapy (IPT), and structured exercise are particularly effective in reducing the symptoms of depression (Casacalenda, Perry, & Looper 2002; Craft & Perna, 2004; Dhingra & Parle, 2011). Psychotherapies, such as CBT and IPT, aim to alleviate the symptoms of depression through a sequence of positive, structured interactions between the therapist and patient. CBT is a psychotherapeutic approach that focuses on solving "problems concerning dysfunctional emotions, behaviours and cognitions through a goal-oriented, systematic procedure" (Dhingra & Parle, 2011, p. 67). IPT aims to solve specific interpersonal problems such as "grief, role transition and interpersonal disputes" (p. 68).

Based on the new conceptualization of health (Huber et al., 2011), we need to re-evaluate traditional approaches to depression as well as other interventions, with a focus on considering their balance between benefits and risks, and their ability to influence people's capacity to adapt and self-manage. The strengths of structured exercise, for example, include the absence of side effects and withdrawal symptoms, which can create adverse effects on patients' ability to self-manage their conditions. However, people living with depression are typically sedentary and may find it difficult to motivate themselves to begin and continue regular exercise. Similar to structured exercise, the lack of severe side effects and withdrawal symptoms is the advantage of psychotherapies. Psychotherapies involve new ways of thinking about, and dealing with depressive symptoms, and therefore, patients have an opportunity to develop skills to cope with the illness from each session. Similarly, group therapies provide depression patients with an opportunity to develop social skills and exchange peer support. Research has shown that social skills training in groups is effective in reducing depressive symptoms (Hersen et al., 1980; Stark et al., 1987). The strength of group therapies is that it is as effective as individual psychotherapy but more cost-effective (Fine et al., 1991). On the other hand, the limitations of psychotherapies and group therapies are the presence of psychological and time barriers that discourage people from accessing the treatments. The problem of psychological barriers may be a big challenge especially for group therapies because participants need to feel comfortable enough to participate in each session in the presence of other participants as well as their therapist.

Research has found that people are reluctant to seek psychotherapies in traditional health care settings because of the social stigma associated with mental illnesses. A study reported that patients often experienced the negative responses of others (perceived stigma) as well as their

own responses to depression (self-stigma) while they sought formal treatments (Barney, Griffiths, Jorm, & Christinsen, 2006). Even if patients access formal services, they often experience the inadequacies of treatment systems, such as limited access to high-quality primary care and non-pharmacological care as well as stigmatizing attitudes of many healthcare providers (McNair, Highet, Hickie, & Davenport, 2002). Psychotherapies may not be effective if patients do not feel comfortable enough to talk about themselves with their doctor face-to-face. Another limitation is that the availability of services at formal healthcare institutions is restricted to their hours of operation. Research has found that the severity of depression tends to increase in the morning or night, during which time health professionals operating from hospitals or clinics may not be providing consultation.

1.6 Online Resources for People Living with Depression: In comparison with in-person traditional care provision systems, online resources offer additional advantages associated with their power to transcend distance, time, and psychological barriers, such as embarrassment or stigma (Johnsen, Rosenvinge, & Gammon, 2002; Shaw et al., 2000; Wright, 2000). On the Internet, people can seek information and support anonymously, which is an important factor for those who look for information about stigmatized illnesses. In fact, a survey in the U.K. found that more than one in four people prefer the Internet for advice and counseling about depression over a visit to their family doctor (Graham et al., 2000). The availability of online services 24 hours a day and 7 days a week is another strength compared with that of formal healthcare institutions. Moreover, the ease of access is also a benefit for those who have limited mobility due to the severity of the illness. The Internet can, therefore, offer an alternative place for people living with depression to seek information and support.

Among many other resources available on the Internet, online support groups have shown strong potential to foster supportive and resourceful environments. An online support group is a group of individuals with similar or common interests who interact and communicate through a computer communication network; this allows social networks to build over a distance (Eysenbach et al., 2004, p. 1). Online support groups can take the form of listservs (also called mailing lists), wikis, blogs, chat rooms, bulletin boards (newsgroups), and social networking sites. A growing number of people with health concerns participate in online support groups to share experience, ask question or provide support to others in similar situations. In fact,

depression online support groups are one of the most popular types of health-related support groups, along with those for breast cancer and HIV patients (Davidson, Pennbaker, & Dickerson, 2000). In depression online support groups, participants exchange a wide range of information and support about the illness with others living with the same illness (Muncer, Burrows, Pleace, Loader, & Nettleton, 2000a).

1.7 Research Problem: Considering their popularity and ability to foster supportive and accessible environments, online support groups appear to have the potential to play a role in the management of depression. For those people who were recently diagnosed with depression for the first time, for example, it may be comforting to know that they are not the only ones who suffer from the illness, and communicating with more experienced others with the same illness may help them cope with the illness. For those who are in the process of choosing a treatment option, learning about the experience of specific treatments from patients' perspectives may assist them in mapping out all the possible advantages and disadvantages and choosing the most satisfying option. However, many aspects of depression support groups remain unknown due to the paucity of research. Little is known about who use those groups, why and how those who participate in those groups use online support groups, and what the potential advantages and disadvantages or risks are. Further investigation is necessary to evaluate online support groups as an alternative intervention in the management of a major depressive disorder.

Chapter 2: Literature Review

2.1 Relevant Theories and Important Constructs

The review of the literature revealed that the field of online support groups is highly interdisciplinary. Previous studies approached the phenomena of online support groups from multiple disciplinary perspectives, and no particular theory had been used predominantly. A majority of research was exploratory in nature, aiming at making empirical contributions. Although several studies mentioned potentially relevant theories or concepts from the authors' disciplines, there have been no published studies that have applied a particular theory to understand how and why people living with depression use online support groups. The present study employed a pragmatic perspective. To understand the findings from this study, all of the theories and concepts mentioned by previous studies were examined, and the theories and concepts that appeared relevant and useful in generating insights were used. After presenting the idea of pragmatism, this section introduces some of the most relevant theories and highlights the aspects of those theories that are most useful for this study.

2.1.1 Theories of Social Support: The impacts of social relationships on health and well-being have been discussed in multiple disciplines. Social scientists who examined the transmission of social support via face-to-face interactions developed two approaches in order to explain the ways social support influence health (Cohen & Wills, 1985). Those who advocate the direct effect hypothesis propose that social support has a direct beneficial impact on one's health. Social support creates a sense of belonging to a larger social structure as well as access to a wide range of information and support embedded in the network (Berkman & Syme, 1979; Cobb, 1976; Cohen, Teresi, & Holmes, 1987). On the other hand, those who advocate the buffer hypothesis view that social supports create coping resources that protect people from the psychological distress caused by stressful events (Cassel, 1976; Thoits, 1982). Empirical findings from both streams indicate that social support has a beneficial influence on both mental and physical health (Berkman & Syme, 1979; Cohen, 1988; Krause, 1990; Wills, 1985).

2.1.2 Social Network Theory: The social network theory offers new insight into the study of social support. This theory considers that social structures are human networks that consist of a set of individuals and sets of relationships connecting pairs of these individuals (Tindal & Wellman, 2001). This theory studies network structures that emerge through the relationship

patterns among individuals or groups (Wasserman & Faust, 1993). Social network analysts believe that social networks are important channels through which a wide range of valuable resources become available (Granovetter, 1973; Moody & White, 2003; Wellman & Wortley, 1990). The two most important concepts in social network theory are strong ties and weak ties (Granovetter, 1973). According to Granovetter, strong ties are characterized by a high degree of intimacy, reciprocity, and time spent together, while weak ties are those relationships that lack the intimacy and frequency of interaction. Granovetter believes that the benefit of weak ties are their ability to provide connections to dissimilar people and to facilitate access to diverse information and services. On the other hand, Wellman and Guilla (1999) demonstrate that the strength of a dense network constructed by strong ties is its potential capacity to facilitate provision of physical tasks such as daily chores and long-term assistance.

Social network theory is useful for the study of online support groups because it draws our attention to relationships between individuals. Neither direct hypothesis nor buffer hypothesis takes into account the fact that an individual develops a wide variety of relationships with others throughout his or her life-time, and that an individual requests and receives different types of support from different kinds of relationship. In the context of online support groups for people with depression, researchers may be able to find support for the direct hypothesis in instances when users use the groups to communicate with close people that they maintain regular contacts, such as their caregivers or family. On the other hand, researchers may be able to find support for the buffer hypothesis in instances when the goal of communication was to seek a specific piece for information from strangers. Social network theory helps Internet researchers pay careful attention to whom and for what purpose people are communicating via online support.

However, a major problem of all of those theories is the lack of consideration about many intervening variables that can affect the relationship between social support and its impacts on health. These variables include gender, race, and age, as well as individual needs caused by illness and coping styles. The direct hypothesis, buffer hypothesis, and social network theory is helpful since they provide a broad view of the ways social relationships can affect well-being. However, in order to fully understand the mechanism of a specific phenomenon in greater detail, it is necessary to maintain both micro and macro perspectives. By taking a data-driven inductive approach, this study aimed to take into account multiple variables at the micro level and consider

how they could affect the theories at the macro level.

2.1.3. Pragmatism: Pragmatism is a worldview developed through the publications of Charles Sanders Peirce, John Dewey, and George Mead in the late-nineteenth century (Corbin & Strauss, 2008; Haack & Lane, 2006). Since then, many types of pragmatism have emerged. But a common characteristic of pragmatic approaches is to a focus on the problem under investigation instead of discussion of the validity of specific methodological worldviews. Researchers' philosophical commitment to a specific worldview often leads them to support one methodological approach over another. But pragmatism focuses on their research problem and uses the approach that deem works the most effectively to understand the problem at a specific time in a specific context (Creswell, 2003). Pragmatists, therefore, refuse to commit to either position in the dualism between reality independent of the mind and the reality within the mind. Pragmatists have the freedom to choose any method, technique, and procedure of research that best suits the purpose of the study. Taking into account the fact that research is conducted under the influence of its specific historical, social, political context, they argue that "truth is what works at the time" and that the research problem often requires mixed methods (Creswell, 2007b, p. 23).

Considering the scarcity of knowledge about the phenomenon under investigation, pragmatism is the most suitable approach for the investigation of the research questions of the present study. Since many aspects of depression online support groups are unknown, the present study is exploratory in nature. Thus, instead of committing to a worldview that considers online support groups as existing absolutely outside or inside the mind, it was most helpful to remain open to multiple perspectives when exploring the dynamic interactions among users. The focus of the pragmatic approach on practical decision-making over choice of method is also suitable for the present study since it gives the researcher flexibility to explore the phenomenon in a way that works in a specific online environment. My decision to take a pragmatic approach affected multiple aspects of this study, including sampling strategies, data collection, and data analysis. The data analyses, for example, involve both qualitative and quantitative assessment of the sample data to answer the research question in the most descriptive, meaningful, and thoughtful way.

2.2 Online Support Groups for People Living with Depression

A scoping review was conducted in February 2010 to identify relevant literature and summarize the available evidence about depression online support groups. By doing so, I aimed to examine whether/how depression online support groups contribute to the lives of those who participate in those groups. The process to identify relevant studies involved four steps. First, a comprehensive search strategy (Appendix A) was developed to retrieve the articles that reported qualitative or quantitative data on a health-related online support groups. The search strategy retrieved 5,159 articles in total. Second, those articles that did not meet inclusion criteria were eliminated from the initial pool of articles. The inclusion criteria for the present review were that studies reported qualitative or quantitative data on a depression online support group. Articles were excluded if their main focus was not specific to depression. Third, additional studies cited in relevant articles were included for review. Fourth, in case additional papers were published after February 2010, another search was conducted in February 2011 using the same strategies.

In total, 17 papers met the inclusion criteria from the initial pool of 5,159 abstracts. Of these, 3 were systematic reviews, 9 analyzed samples of posts, 3 conducted survey questionnaires, one collected both a sample of posts and survey data, and one analyzed samples of posts and conducted social network analysis. Those studies came from a variety of disciplines, including public health, psychiatry, psychology, and social work. Table 1 and 2 summarize the characteristics of the 3 systematic reviews and the 14 studies. All of the identified studies focused on bulletin board-based support groups (Alexander, 2002; Alexander Peterson, & Hollingshead, 2003; Andersson et al., 2005; Davidson, Pennebaker, & Dickerson., 2000; Fekete, 2002; Houston, Cooper, & Ford, 2002; Lamerichs & Molder, 2003; Macius, 2005; Muncer et al., 2000a; Muncer et al., 2000b; Powell, McCarthy & Eysenbach, 2003; Salem, Bogat, & Reid, 1997; Witt, 1999), except for one study, which examined social networking sites (Takahashi et al., 2009). The rest of this chapter provides a summary of findings from the identified studies.

2.2.1 Impact of Depression Online Support Group on Depressive Symptoms:

Eysenbach et al. (2004) conducted a systematic review of studies on the effects of various health related online support groups on a wide range of health and social outcomes, such as depression, social support, healthcare use, eating disorders, weight loss, diabetes control, and smoking cessation. The review identified 45 publications describing 38 distinct studies but found no

robust evidence. The reviewers argue that the lack of evidence and studies might have derived from the fact that "there is little commercial or professional interest in evaluating 'pure' virtual communities and 'unsophisticated' peer to peer interventions such as mailing lists, as opposed to more complex interventions or interventions led by health professionals" (p. 3). Of the 38 identified studies, 12 examined the impact of online support groups on depression, among which 3 found significant improvements in depression scores (Houston et al., 2002; Lieberman et al., 2003; Winzelberg et al., 2003) and 9 did not find or report an intervention effect on depression (Barrera, Glasgow, McKay, Boles, & Feil, 2002; Bass, McClendon, Brennan, & McCarthy, 1998; Flatley-Brennan, 1998; Glasgow, Boles, McKay, Feil, & Barrera, 2003; Gustafson et al., 1999; McKay, King, Eakin, Seeley, & Glasgow, 2001; Tate, Wing, & Winett, 2001; Tate, Jackvony, & Wing, 2003; Quick, 1999). Of the 3 studies that produced positive results, the one by Houston et al. (2002) involved online support groups for depression patients, while the other two studied online support groups for women with breast cancer (Lieberman et al., 2003; Winzelberg et al., 2003). Due to the small number of the studies and various differences in their research design, whether and how online support group participation affects depressive symptoms remains inconclusive.

Since the review by Eysenbach et al. (2004) examined various health outcomes and did not specifically focus on depression outcomes in detail, Griffith, Calear, and Banfield (2009a) conducted a more comprehensive systematic review of studies that examined the effect of online support groups on depressive symptoms. By employing the same search terms and strategies used by Eysenbach et al. (2004), they identified 31 papers (involving 28 trials) published prior to August 2007. Papers were included if they examined a peer-led online support group regardless of its target health condition and reported a depression outcome with quantitative data. Of the 28 identified studies, the majority focused on online support groups for breast cancer patients. Two studies focused on online support groups for depression patients (Andersson et al., 2005; Houston et al., 2002), one of which reporting a decrease in depressive symptoms among frequent users (Houston et al., 2002). Griffith et al. (2009a) concluded that the effectiveness of depression online support groups remained unclear due to the limited number and quality of existing studies.

The two studies (Houston et al., 2002: Andersson et al., 2005) that investigated the effectiveness of depression online support groups on depression outcomes employed different

research designs and recruitment strategies, and therefore, produced different findings. Houston et al. (2002) conducted online surveys with 103 volunteer participants recruited through posts in 5 depression online support groups over a two month period. Demographic characteristics, support group use, depression care, score on the Medical Outcome Study Social Support Survey, and score on the Center for Epidemiologic Studies Depression Scale (CES-D Scale) were assessed at baseline, six months, and twelve months. The results revealed that, among individuals with depression at baseline and with follow-up data available (N=71), depression resolved in 33.8% of the subjects (N=24) and that depression resolved in 42.9% (18 of 42) of frequent users at baseline, compared with 20.7% (6 of 29) of less frequent users (p. 2065). Although it is not possible to establish a causal relationship, almost all survey respondents (95.1 %) agreed that "chatting on the Internet support groups helped their symptoms" (p. 2064). The researchers argued that randomized controlled trials should be performed to further define the effectiveness of depression online support groups.

Andersson et al. (2005), on the other hand, conducted a randomized controlled trial to investigate the effects of an online cognitive behavioural therapy with patients recruited through a press release and articles in newspapers (N=117). Both the treatment group and control group were encouraged to participate in two separate online discussion forums. The findings indicated that participation in the online cognitive behavioural therapy and discussion forums resulted in significant reductions of depressive symptoms, while participation in a discussion forum only showed no significant reduction. The researchers argued that a possible explanation for the lack of effect on the control group could be that "the patients were aware if being placed on a waiting list, and hence were not expecting any change from participation in their group" (p.460).

2.2.2 Impact of Depression Online Support Group on Other Health Outcomes: Since the systematic review by Griffith et al. (2009a) examined the effect of various health-related online support groups on depressive symptoms, Griffith et al. (2009b) conducted another systematic review to focus on depression online support groups specifically and summarized available evidence regarding the scope and findings of studies of this specific type of online support group. They employed the same search terms and strategies used by Eysenbach et al. (2004) and identified 13 papers. Papers were included if they employed an online peer-led depression-specific support group and reported either quantitative or qualitative empirical data.

Of the 13 identified papers, 3 studies investigated the effectiveness of depression online support groups for improving outcomes other than depressive symptoms (Powell et al., 2003). Huston et al. (2002) examined the impact of participation on quality of life and social support, finding no significant difference over time. Andersson et al. (2005) investigated the effect of depression online support groups on anxiety symptoms but found no change in those who participated in the support group. Powell et al. (2003) examined the effects of online participation on the use of other health services through online cross-sectional surveys with participants in 6 depression bulletin boards in Austria, Denmark, Germany, Norway, Sweden, and the United Kingdom. Of the 2037 survey participants, 37% reported that their participation had encouraged them to seek professional help, while 9% felt that it had delayed help seeking and 11% felt that it had reduced their trust in their doctor. The surveys by Huston et al. (2002) also explored the impact of support group participation on the use of formal health services and found that over 62% of the participants reported that "online discussions had influenced them to become more active in their depression health care by asking their health care provider a question" (p. 2066) and about 26% agreed that online discussions helped them to make a change in medication.

There appears to be only one study that has explored the impact of participation in depression online support groups on patients' ability to cope with their illness. Richards and Tangney (2008) created a website portal that provides students of University of Dublin with mental health services and assessed how the use of the portal affected their lives. After one academic term, the participants (N=389) were asked to report on whether their participation affected positive change in their lives in terms of ther mental health and well-being. Among the 13 respondents, 6 respondents reported that it did, while 4 respondents reported the opposite and 3 did not answer. The positive responses described improvement in the ways they cope with mental health problems and stress. They felt their participation helped them face up to the problems they were experiencing and deal with them (p.93). They also felt that their online participation was "a great way to vent any stress," and "felt less stressed and alone" as a consequence (p. 93). The researchers ran the portal for one academic term only, and the response rate of their questionnaires was very low. However, their findings show the potential of online support group for students with mental health issues in terms of developing the ability to manage

stress and alleviating the sense of isolation caused by mental health problems.

2.2.3 Topics Discussed in Depression Online Support Groups: To date, nine studies have provided qualitative and quantitative information about the nature of interactions in online support groups for people living with depression (Alexander, 2002; Alexander et al., 2003; Davidson et al., 2000; Fekete, 2002; Lamerichs & Molder, 2003; Macius, 2005; Muncer et al, 2000a; Salem et al., 1997; Witt, 2000). These studies examined the prevalence of different types of support exchanged through posts made in depression online support groups. In order to classify support type effectively and consistently, the authors either created a unique coding system by conducting a brainstorming session among the researchers (Macius, 2005) or employed an existing coding system from previous literature, such as Cohen and Wills' typology of social support (Alexander et al., 2003; Muncer et al., 2000), Cutrona Support Behaviour Code (Alexander, 2002; Alexander et al., 2003), an adaptation of Weintraub content analytic method (Weintraub, 1989), or a modified version of a typology developed by Roberts et al.(1991) for the analysis of face-to-face support group (Salem et al., 1997). A review of literature on studies of other health-related online support groups revealed that that they also used a wide range of support categories (Agneessens, Waege, & Lievens, 2006; Amato, 1983; Bambina, 2007; Boyce, Kay, & Uitti, 1988; Braithwaite, Waldron, & Finn, 1999; Bresica, 2003; Finn, 1999; Fitch, 2000; Kerr et al, 2007; Klemm, Hurst, Dearholt, & Trone, 1999; Pearce, 1980; Peloza & Hassay, 2007; Radin, 2000).

The typologies used in previous studies classify the support exchanged in depression online support groups into roughly four categories: instrumental (or logistic) support, informational support, emotional (or self-esteem) support, and social companionship. Instrumental support refers to the provision of goods, services and "practical assistance with daily living, such as helping people out of bed, running errands" (Tanis, 2007, p.140). Since the exchange of instrumental support usually involves physical interactions, it is not commonly found in computer-mediated support groups. The most common types of support recognized in health-related online communities are informational support and emotional support (Braithwaite, Waldron, & Finn; 1999; Coulson, 2005; Finn, 1999; Meier et al, 2007; Mo & Coulson, 2008). Informational support refers to "the exchange of practical information such as tips on new types of medication, relevant addresses of institutes, knowledge about medical or psychological

treatments, legal issues, but also stories of first-hand or second-hand experience by members" (Tanis, 2007, p. 140-141). Emotional support, on the other hand, refers to "the display of understanding what the other person goes through and involves showing compassion and commitment" (p. 141). Social companionship is commonly defined as "spending time with others in leisure and recreational activities" (Cohen & Wills, 1985, p. 6).

Using the typology developed by Cohen and Wills (1985), Muncer et al. (2000) conducted a content analysis of the 491 posts made by 118 participants in a depression newsgroup over one month. The researchers classified the posts into five categories: informational support, social companionship, esteem support, instrumental support, and other. In this study, esteem support refers to the posts that tell "people they are important and accepted" (p. 6). Examples of esteem support include "attempts to help users deal with everyday problems such as parental visits and giving up smoking" and "encouragement to group members in general" (p. 14). They found that esteem support (19 threads) and informational support (15 threads) were the most common types of social support exchanged in the community followed by social companionship (12 threads); they found no evidence of instrumental support. The study also found that the majority of posts (45 out of the 61 threads) were coded as being socially supportive.

Similarly, Salem et al. (1997) analyzed 1,863 posts made by 533 participants in a depression newsgroup during two randomly chosen weeks. The researchers coded the posts by using a modified version of a typology developed by Roberts et al. (1991) for the analysis of face-to-face support group. The posts were first classified into two categories: disclosure (51% of the total posts) and social support (49%). Then, the 49% of posts that are coded as social support were further classified into ten types: advice and information (35 %), emotional support (22%), group structure (20 %), experiential knowledge (14%), request for feedback/help (13%), agreement (10 %), cognitive guidance (7%), disagreement/negative (5%), humour (5%), and referent power (1%) (p. 195). The total percentages add up to more than 100% since those categories are not mutually exclusive.

Previous studies differed in the ways they classified certain types of support. For instance, Bambina (2007) places subcategories called "Advice" (defined as guidance, advice, or suggestions) and "Teaching" (defined as instructional and/or educational information) as subcategories of informational support. But this study and another study (Bresica, 2003) consider

advice and teaching fundamentally different from informational support in its specificity, purpose, and consequence. Informational support is defined here as the exchange of lay knowledge and/or the sharing of someone's personal experience with specific treatment, people, places, and information materials, while the act of advice or teaching goes further by educating the listener about what to do with the information given. Taking those differences into consideration, a broad category of "coaching support" was created for the present study regarding the exchange of advice or teaching.

Although their target participants are not specifically depression patients, there are a few studies that examined the topics discussed in online support groups for people living with mental health conditions (Bradley & Carter, 2006; Marcus et al., 2009). One study (Bradley & Carter, 2006) examined newsgroups listed in Google Groups as a means to explore young people's perspectives on mental health issues and experiences. They examined the content of 289 posts and found eight themes: self-injury, suicide ideation or attempt, experience of professional help (psychiatry and therapy), prescription drugs, experience of depression, panic attacks and anxiety, eating disorders, and fear and phobias. Another study (Marcus et al., 2009) examined the content of blogs written by young adults. Their qualitative analysis of eight blogs written by individuals aged 18 to 25 who self-identified as a patient of mood or anxiety disorders discovered two core themes. First, these bloggers commonly expressed a pervasive lack of control and a sense of powerlessness. Second, they reported a strong sense of alienation and disconnection from people around them, including their family members, communities, and mental health professionals. The bloggers expressed feelings of being under-treated or abandoned by health professionals.

Based on the findings from the previous studies, it is fair to assume that informational and emotional supports are the common type of support exchanged in depression online support groups. Previous studies consistently found that these two types of support occupied a significant proportion of the total interaction among users (Alexander, 2002; Alexander et al., 2003; Fekete, 2002; Lamerichs & Molder, 2003; Macias et al., 2005; Muncer et al., 2000a; Muncer et al., 2000b; Salem et al., 1997; Witt, 2000). Unlike face-to-face support groups, instrumental or tangible support is either absent or very uncommon in online support groups for people with depression (Alexander et al., 2003; Muncer et al., 2000).

2.2.4 Perceived Benefits of Depression Online Support Groups from Users'

Perspectives: Several studies have examined why people participate in online support groups for people with depression (Alexander et al., 2003; Houston et al., 2002; Powell et al., 2003). Alexander et al. (2003), for example, found that users view online communities as a place they can turn to when they feel alone. Since depression is not a visible type of disability, people are unaware of who is suffering with the illness in daily life in spite of the prevalence of depression worldwide (Kessler et al., 2003; Essau, 2009). Consequently, in real life settings (such as the school or workplace) depressed people may not be able to easily find other people with similar illness. The study by Powell et al. (2003) further supports the benefits of online support group as a place to manage loneliness. They found that 44% of users of depression online support group indicated that they "felt less isolated" as a consequence of their online participation.

Research has also found that online support groups serve as a place where users can look for information or support without worrying about being judged negatively (Webb, Burns, & Collin, 2008). This benefit relates to one of the main differences between support seeking on the Internet and support seeking in off-line settings, such as hospitals, clinics and community centres. In offline settings, people would have to expose some of their personal information, such as their face, name, and voice, in order to seek support. On the Internet, however, users can ask questions without exposing their identity to others. Powell, et al. (2003) found that "many users (51%) felt able to discuss subject that they were unable to discuss elsewhere and some had revealed their depression for the first time on the community" (p. 6). The online survey by Houston et al. (2002) revealed that the most popular reasons to use depression online communities was "emotional support" and the second most popular reason was "to receive information about medications"(p. 2064). Wright (2001) argues that the exchange of emotional support is invaluable when people feel that they cannot change their situation but, instead, must cope with it. People living with depression often feel overwhelmed, powerless or hopeless as a consequence of their depressive symptoms (Mufson, Dorta, Moreau, & Weissman, 2004), and often feel they "should be able to" cope with these symptoms (Marcus, Barne, Westra, & Eastwood, 2009). For people who feel uncomfortable talking about their mental illness in offline settings, virtual communities could be the first and only place for them to confront, and talk about, their illness.

In order to explore why people with depression use the Internet to access information

about medication in further detail, Pohjanoksa-Mantyla et al. (2009) conducted six focus groups with a cross-section of Internet users with depression (n=29). A thematic content analysis of transcripts discovered that the respondents sought online information in order to "obtain a second opinion, to verify information provided in the Package Information Leaflet, to prepare to visit to a physician, and to learn about peer experiences" (p. 333). With regards to the benefit of informational support, Wright (2002) argues that online networks can give people a sense of control over their specific medical condition and contribute to a better decision-making process. The most common information exchanged was related to the treatment of depression. In particular, users exchanged information about the side effects of specific medications, availability of alternative medicine, and scientific research on depression (Muncer et al., 2000). As a result of such information exchange, the majority of users acknowledged that a benefit of online community participation was increased knowledge about depression and medication (Powell et al., 2003). However, no quantitative studies have measured how information exchange affects users' knowledge level or sense of control over the illness.

2.2.5 Potential Risks Associated with Depression Online Support Groups: Takahashi et al. (2009) examined the nature of interactions in a social networking site for people with depression by employing mixed methods. First, a cross-sectional online survey was conducted to examine the demographic characteristics and depressive states of 103 users. Second, qualitative content analysis was used to examine the responses to open-ended questions concerning the advantages and disadvantages of participating in the social networking site. Lastly, the relationships among the users were analyzed by a partial social network analysis. The researchers found that the users described various benefits of participating in the community, such as "recognizing the existence of peers," "acquiring information," "narrating their experiences," "supporting with each other," and "encouraging peer support" (p. 9). As a result of their participation, 11 users experienced "feeling positive" and "changing behaviour" (p. 9). On the other hand, 7 users explained the adverse outcomes caused by "downward depressive spiral" (p. 11). Those users reported that their depressive symptoms were exacerbated after reading or writing negative comments while they were using the community. The social network analysis indicated that the downward depressive spiral was associated with interactions with friends who were moderately or severely depressed and friends with negative assessment of the social

networking site.

Some researchers expressed their concern that participation in online support groups may create dependency and may result in the delay of seeking professional support offline (Bargh & McKenna, 2004). Existing studies have not yet tested this hypothesis. It is, in fact, very problematic if depression patients become dependent on online support groups and do not seek for professional assistance when their conditions require professional treatment.

2.2.6 Users' Degree of Satisfaction: There is only one study that examined the users' degree of satisfaction. Alexander et al. (2003) conducted online surveys with 19 volunteers who were recruited through a post on a depression newsgroup. The results indicated that the respondents were very satisfied with their online experience. However, the number of respondents was small, and there is the possibility that only satisfied users found the post and agreed to participate in the survey. What initially motivates people to participate in online self-help groups? Do they receive what they were initially looking for? To what extent are they satisfied with the community that they participate in? Answers to those questions would be particularly beneficial for administrators of depression online communities who wish to improve their communities. There is a need for more studies that examine to what degree users are satisfied or dissatisfied with their experience with depression online communities.

2.2.7 Patterns of Use: With regard to users' behaviours in depression online communities, little is known about how much time users spend in depression online communities. Also, no study has explored when during a day or week users are likely to use these communities. Houston et al. (2002) found that 53.4 % of the users in their study reported that they spent at least 5 hours over a 2-week period in such online communities. But this is the only study that has examined the time spent in depression online support groups, and thus the extent to which this finding is generalizable is unknown. Time of use is particularly important in understanding how users utilize online communities in relation to other available resources, such as formal treatment available in traditional healthcare systems. While online support groups are accessible during any time of a day or week, traditional healthcare systems are available only during the day time during weekdays. A comparison of the time during which people use online support groups and time during which healthcare systems are available would provide information about how online support groups are serving depression patients.

2.2.8 User Characteristics: Five studies have reported some or all of the following user characteristics of depression online support groups: clinical status, treatment history, age, gender, marital status, employment status, and degree of social isolation (Alexander et al., 2003; Houston et al., 2002; Powell et al., 2003; Salem et al, 1997; Takahashi et al, 2009).

In terms of clinical status, the findings from the five studies suggest that a majority of users were either currently depressed or depressed in the past. Alexander et al. (2003), for instance, conducted a content analysis of all of the posts made to a depression newsgroup during three consecutive weeks and discovered that all users who made posts during this period (n=74) identified themselves as sufferers of depression. Similarly, Salem et al. (1997) analyzed all of the posts made to a depression newsgroup during two consecutive weeks and found that about 92 % of the users were depressed and 2 % of them were caregivers of depression patients. Both studies inferred the clinical status of the users from the content of the posts, sacrificing the validity and reliability of the conclusion. However, three other studies that employed surveys (Houston et al., 2002; Powell et al., 2003; Takahashi et al., 2009) produced consistent findings. Takahashi et al. (2009), for example, incorporated the Self-Rating Depression Scale (Fukuda & Kobayashi, 1983; Zung, 1965) into their survey and found that 90% (28 out of 31) of the respondents appeared mildly, moderately, or severely depressed. Also, Houston et al. reported that the majority of the respondents (86.4 %) identified themselves as a depressive patient, while 6.7 % identified themselves as a family member or friend of people suffering from depression. Also, the cross-sectional surveys in six depression support groups in six European countries (Powell, et al., 2003) consistently found that 40 to 60% of users were clinically depressed and about 6 % of the respondents identified themselves as a family member or caregiver. It is, therefore, fair to assume that the majority of participants in depression online support groups are depression sufferers, a finding that is consistent with the studies of online support groups for people with other medical conditions, such as social anxiety disorder (Erwin et al., 2003) and breast cancer, fibromyalgia, and arthritis (van Uden-Kraan et al., 2008). Those studies consistently discovered that more than 60 % of users are patients and that a small number of participants are caregivers.

However, different results have been reported with regard to the experience of formal treatment among users. Powell et al. (2002) found results that contradicted those of Houston et al. (2002). Houston et al. found that the majority of the users were receiving formal treatment, with

92% of the respondents receiving antidepressants and 65% receiving counseling. After 6 and 12 months, 55 out of 72 respondents (76.4 %) and 52 out of 66 respondents (78.8 %) were still receiving formal treatment for depression. Powell and his colleagues, on the other hand, found that only 51% of the depressed users were recipients of formal treatment. Among them, 44% were receiving medication, 26% were in psychological treatment, and 51% were either in psychological treatment, using medication, or both. As noted by Griffith et al. (2009b), it is difficult to judge if those different results are a true reflection of the reality or a result caused by the different methods taken by each study. While Houston et al. promoted their research via an advertisement on the main page of the online community and waited for volunteer applications, Powell et al. informed all community users of their study. Differences in the ways each study was advertized might have attracted different types of participants and might have affected the results.

In terms of age, three studies indicated that users of depression online support groups can vary from their early 20s to late 50s, but are most commonly between their mid-to-late 20s and mid-40s. Powell et al. (2003), for example, reported that the most common age distribution of the respondents was 26-35 years (33%), followed by below 26 years (27%), 36-45 years (23%), and over 45 years (17%). The users in the study by Houston et al. (2002) were slightly older, with a median age of 40 and 30-45 years as the most common age range (49%), followed by over 45 years (30%) and 18-29 years (21%). The study of depression social networking site (Takahashi et al.,2009) reported that the median age of their respondents was 36, with the range of between 21 and 57 years old.

Mixed results exist in terms of the gender of depression online support groups. The cross-sectional survey by Powell, et al. (2003) reported a predominance of female users (71% in the U.K. sample, 73% in Sweden, 73% in Denmark, 69% in Norway, 63% in Germany, and 73% in Austria). Similarly, Houston et al. (2002) found more female users (69 %). On the other hand, Salem (1997), Alexander et al. (2003), and Takahashi et al. (2009) found slightly more male users (51%, 66%, and 51% respectively). It should be noted that the first three studies (Houston et al., 2002; Powell et al., 2003; Takahashi et al., 2009) employed online surveys in which respondents themselves reported their gender, while the findings from Salem (1997) and Alexander et al. (2003) are based on content analysis in which the researchers inferred users'

gender based on the content of the posts.

Little is known about other demographic data, such as ethnicity, education level, employment status, marital status, and social support. There is only one study that examined education level, employment status, and marital status (Houston, et al., 2002), the findings of which indicated that 45% of the respondents achieved a college education, 42% were unemployed, and 56% are unmarried. In terms of the degree of social isolation, the respondents uniformly marked lower levels of emotional and tangible support and lower levels of positive social interaction in their offline lives when compared with those of average depression patients, measured by the Medical Outcomes Study Social Support Survey with those from the Quality Improvement for Depression study (Rost et al., 2001).To date, no study has examined the ethnicity of users in depression online communities.

In summary, there are limited numbers of studies on the users of depression online support groups. User characteristics, such as age, gender, and clinical status of users, remain inconclusive due to the scarcity of research and methodological problems of existing studies. Other information about users, such as ethnicity and source of referral, remains unknown. In terms of the source of referral, one survey (Alexander, 2003) asked respondents how they found out about the online support groups that they participate. However, the researcher did not report the findings about this question. Moreover, no studies have addressed the extent to which the sample of the study is representative of the chosen support groups. Moreover, their validity is threatened by the reliance on self-reported data. Since no personal information was collected, researchers cannot contact respondents for follow-up. Consequently, these studies sacrificed both validity and reliability. More research is necessary to understand the characteristics of depression online support groups.

2.2.9 Summary of Knowledge Gaps: Table 3 summarizes the knowledge gaps of depression online support groups that were revealed by the review of the literature. Overall, many aspects of online support groups for people living with depression remain unknown or inconclusive due to the scarcity of research. Lack of research is particularly evident in the areas of the relationships between user interaction and outcomes; role of depression online support groups in the everyday lives of people living with depression; relationships between user characteristics and the nature of interaction; factors that affect retention of users; and impact of

group structure on user interaction. In terms of the relationship between user characteristics and the nature of interaction, little is known about what kind of user is likely to request a specific type of support and who is likely to give the support being requested. For example, when a specific kind of support is being requested, the conditions that enable the community to generate and transmit the requested type of support are unknown.

Chapter 3: Methods

3.1 Purpose and Objectives The aim of the literature review was to examine whether or how depression online support groups contribute to the lives of those who participate in those groups by summarizing the available evidence regarding depression online support groups. But the answers to those questions remained inconclusive. The findings from a small number of studies that employed content analysis found that the most common types of support exchanged in the groups are informational and emotional support. The quantitative findings from the previous studies were helpful in understanding the frequency and commonness of each type of support. However, the role of depression online support groups in managing depression remained unclear. Previous studies focused on numeric account of support frequency and rarely paid attention to contextual information in which a specific support request or support provision occurred. Consequently, how users' interactions with peers assists them in coping with the illness remains unknown. Moreover, the categories used in the previous studies are so broad that they are limited in their ability to capture the nature of support needs expressed in the posts made by users in depression online support groups. As a result, the characteristics of user interaction reported from those studies can only provide simplified descriptions of the ways users utilize depression online support groups and do not fully illustrate the way those groups contribute to everyday lives of users suffering from depression.

The present study aimed to explore how users utilize depression online support groups to gain more insight on how the exchange of informational, emotional, and other types of support contribute to the everyday lives of users living with depression. The specific objectives of the study were to provide a more detailed illustration of their use of depression online support groups by exploring the following research questions both quantitatively and qualitatively:

1) What kinds of support do members of depression online support groups request?
2) What kinds of support do members of depression online support groups provide?

By examining those two questions, the present study aims to explore the roles of depression online support groups in the management of depression described through the support exchange

among users.

3.2 Research Design: In order to explore the research questions, the present study employed mixed methods with a concurrent triangulation strategy (Creswell, 2009; Creswell, 2007a). In a concurrent triangulation approach, a researcher collects and analyzes both quantitative and qualitative data during the same phase of the research process (Creswell, 2009). In the present study, both quantitative and qualitative data were given an equal emphasis and were integrated in the interpretation of the overall results. The rationale for choosing concurrent triangulation design was that it allows the researcher to use different but complementary data on the same topic to best understand the research problem (Creswell, 2007a).

In the present study, a purposive sampling approach was followed to select 980 posts made in a depression online support group called Depression Centre (see the next section for the details about the research site). Demographic and clinical information about the users who made those posts was retrieved and recorded. Subsequently, quantitative and qualitative content analyses were conducted to identify what types of support were requested and provided through the posts. A pre-determined coding scheme and coding sheets were used to classify and record the types of posts. Inter-coder reliability was calculated to ensure consistency in coding process. The quantitative data about users' support exchange provided information about the frequency of each support type, while the qualitative data offered more in-depth and detailed information about the nature of the support exchange. The reason for using concurrent triangulation strategy was that using both types of data allowed a comprehensive analysis of the nature of support exchange in the depression online support group.

3.3 Research Setting: The Depression Centre (http://www.depressioncentre.net.) was selected as the data collection site for this study (Appendix C provides a screenshot of the front page of the website). The Depression Centre is an eHealth program launched in January 2001 by Evolution Health. Evolution Health is a private company located in Toronto, Canada, which aims to build and maintain effective eHealth programs. Those programs are developed by clinical advisors and research collaborators and are designed to "encourage user self-management and behaviour modification" through various tools that are "automatically tailored to each person's unique needs" (Evolution Health Inc., 2012b, para. 2). The Depression Centre is one of these eHealth programs and was created under the supervision of a Professor of Psychiatry and

Psychology at Ryerson University. It is designed for people living with depression and their caregivers. It consists of multiple interactive components: the Depression Program (an 18-session cognitive behavioural therapy course), the Web-Based Depression and Anxiety Test (WB-DAT), Session Diary (a personal homepage that keeps user's record of progress), Symptom Tracker (an interactive tracking tool that monitors the severity of depression and related symptoms over time), glossaries (explanations of common terms and medications written in a plain language), and the Forum. The Forum takes the format of a bulletin board in which users interact asynchronously. It is this Forum that is the primary focus and the data collection site of this study.

The structure of the Forum is relatively simple and easy to navigate. As shown in the Appendix D, the Forum consists of 13 major themes (Mod's Corner, Introduce Yourself, Getting Back to Work, Group Program Discovery, Understanding Major Depressive Disorder, Medications, Goal Setting and Activity Scheduling, Challenging Your Negative Thoughts, Core Beliefs and Assumptions, Relationships, Lifestyle, Coping with Setbacks, and Success Stories). From those options, users choose the theme that they believe is the most relevant to their question in mind and seek responses from other users. Clicking the link of the theme brings users to a list of threads under the selected theme. Each thread consists of an initial message and responses. As of February 13, 2011, there were 4,520 threads and 24,983 posts created in the Forum of the Depression Centre.

Users do not need to register in order to browse posts made in the Forum. However, if users want to create a post, they need to become members through a registration process. During the registration, users need to submit personal information, such as a nickname, working email address, gender, country of residence, date of birth, occupation, the highest level of education completed, as well as information regarding current symptoms of depression, level of distress, level of interference, experience of Cognitive Behavioural Therapy, and whether or not they are currently receiving treatment. There is no membership fee for personal, non-commercial use. Participants can choose to make some of their personal information (date joined, time of post, gender, occupation, country, and hobby) publicly visible or invisible at any time during their participation. Those pieces of information appear beside each post only when users intentionally choose to make them publically viewable. The default setting is invisible. If they choose not to

display any of their personal information or if they do not make any adjustment to the default setting, only their nickname and the time of post appear beside their posts.

User interactions are monitored and moderated by trained "health educators" employed by Evolution Health. The duties and responsibilities of the health educators include removing inappropriate posts (posts that explicitly refer to suicidal actions and any other posts that are considered to impose an unhealthy degree of distress to readers) and encouraging active, helpful interaction among users. When no one responds to a question that a user posted, for example, the health educators either respond to the question or make a post to encourage other users to respond to it.

Evolution Health does not advertize the Depression Center except in academic conferences where the company introduces the community and shares findings of research conducted with the data generated from it. Therefore, health professionals may learn about the Depression Centre Forum through conferences, but a majority of users find the Forum by themselves typically through web links and search engines.

The present study used purposive sampling to choose the data collection site. Since there is no comprehensive list of all available depression online support groups, representative sampling was impossible. Efforts were made to make the search and selection process as comprehensive and reasonable as possible. First, key word searches were conducted using major search engines (Google, Bing, Yahoo.com, and Yahoo.ca) which retrieved numerous support groups available on the Internet. Second, each support group was examined based on the selection criteria developed by Im et al. (2010), who discussed how to choose an appropriate online support group to conduct research. The eight evaluation criteria they developed are, 1) private or public domains; 2) mission and purpose of the support group; 3) target users of the group; 4) scope of the group; 5) contents of the group; 6) logistics for study announcement; 7) dynamics within the group; and 8) credibility and authenticity of the owner/administrator. In addition to those selection criteria, I paid attention to the type of target users, number of actual users as opposed to lurkers, frequency of updates, and fit with the scope of my research. The Depression Centre was selected as the data collection site because all of the posts made in the group are publically accessible; users participate in the community very frequently; the site provides information about the company that owns the community and about its vision and policies clearly; the

community is designed specifically for people living with depression; and the company was willing to support the study. For the analysis of interaction among users, bulletin board-based online support groups offer multiple advantages to researchers. Typically the content of interaction is publically viewable, while other types of support groups keep user interactions private via the requirement of membership registration and a log in with a password. Another advantage is that it is easy to estimate the number of participants and their frequency of participation, making non-intrusive observation and analysis of user interaction possible.

3.4 Data Collection: Non-probability, purposive sampling was used to retrieve a sample of all of the posts (N=980) made during a one-year period between January 1, 2010, and December 31, 2010 in nine relevant discussion themes: Getting Back to Work, Understanding Major Depressive Disorder, Medications, Goal Setting and Activity Scheduling, Challenging Your Negative Thoughts, Core Beliefs and Assumptions, Relationships, Lifestyle, and Coping with Setbacks. Table 7 shows the number of posts made for each discussion theme. Four other themes ("Mod's Corner," "Introduce Yourself," "Group Program Discovery," "Success Stories") were excluded from the study because those themes did not appear as places where users would come to seek support. Since the purpose of the present study was to identify what kinds of support is exchanged between users, it was logical to choose the themes that users are likely to choose when seeking support from peers.

In addition to the contents of the posts, the demographic and clinical information of users who made those posts were also collected and recorded including nickname, gender, country of residence, and date of birth. The clinical information includes information regarding current symptoms of depression, level of distress, level of interference, experience of cognitive behavioural therapy, and whether or not the user is currently receiving treatment. Depression rate is the severity of depressive symptoms, and depression level is the level of distress caused by daily life. Depression interference is the degree of interference that depression has caused in daily life. All three categories are rated by users at the time of registration by using Likert Scales. Users are asked to rate the following from 0 (none) to 10 (extreme): "In the past two weeks, I'd rate my symptoms of depression as..." "In the past two weeks, my depression has caused the following level of distress in my normal daily life," "In the past two weeks, my depression has caused the following amount of interference in my daily normal life". Both clinical and

demographic information is collected at the time of registration for the Depression Centre program.

Non-probability, purposive sampling was selected as the strategy because it was considered to be the most appropriate method to generate a sample that would be the most useful to explore the research questions. Purposive sampling is a type of sampling in which "the units to be observed are selected on the basis of the researcher's judgment about which one is the most useful" (Babbie, 2007, p. 184). After familiarizing myself with the user data stored in the two servers since the launch of the Depression Centre in 2002, it was noticed that major system upgrades occurred four times since 2002. Table 4 lists the dates of each system upgrade and the changes in the types of data collected from users. As shown in Table 4, the more recent the version of the program, the more information it collected from users. For instance, gender, age range, country of residence, severity of depression, experience with Cognitive Behavioural Therapy (CBT) and current treatment status was the only information collected from users between May 26, 2005 and September 3, 2005. After September 3, 2005, the program began to collect additional information about the clinical status of users, such as level of distress and amount of interference caused by depression.

The data set from the year 2010 was selected because there was no system upgrade that affected the types of user data collected during that year. Also, this data set offered the richest amount of information about users compared to earlier years, during which the program had only collected limited types of user information. It was also important to select a sample that covered data collected at least during a full one-year period. It is well known that depressive symptoms tend to get worse during the winter and improve during the summer. Therefore, it is possible that users make posts more frequently during the winter and less frequently during the summer. If this is the case, only collecting data from certain months would generate skewed results. This risk was avoided by selecting all of the posts in a year. Examining the data from all twelve months would also help the sample capture variations in the posts.

3.5 Data Analysis

3.5.1 Content Analysis: Content analysis is a research method used in Social Sciences to study and summarize the content of recorded human communication (Babbie, 2004). Content analysis was selected for the present study since this research method is particularly suitable for

the study of communication and “answering the classic questions of common research: who says what, to whom, why, how & with what effect?” (Babbie, 2004, p. 314). There are many approaches to content analysis. Neuendorf (2002), for instance, defines content analysis as the strictly quantitative examination of manifest content. Manifest content refers to "the concrete terms contained in a communication" (Babbie, 2004, p. 319). In quantitative content analysis, researchers count the number of key terms in a given text in order to draw some inference about the characteristics of the text based on the frequency of the appearance of the key term. On the other hand, Krippendorf (2004) considers that content analysis involves both quantitative and qualitative examination of manifest and latent content. The latent content refers to "the underlying meaning of communications” (Babbie, 2004, p. 319). In this approach, researchers engage in an in-depth reading of a given text as a whole and make an overall assessment of the characteristics of the text, instead of relying on the frequency of appearance of the key terms only.

By taking the approach described by Krippendorff (2004), the present study examined both manifest and latent content of the posts made in the Forum. In terms of the manifest content, the date and time of post, the information that users displayed in their profiles (date joined, date/time of post, gender, occupation, and country) and the anonymous personal information that they submitted at the registration process (nickname, gender, country of residence, and date of birth, as well as information regarding current symptoms of depression, level of distress, level of interference, experience of cognitive behavioural therapy, and whether or not they are currently being treated) were recorded for each post. With regard to the latent content, the types of support that were requested or provided through each post were recorded according to the predetermined coding scheme. Krippendorff’s approach to content analysis was selected over others, since his approach allowed for the most comprehensive analysis of the posts by taking into account all other available information at the Depression Centre Forum that was relevant to the research questions.

3.5.2 Coding Scheme Design: In order to conduct coding efficiently and consistently, coding categories need to be established prior to data analysis. Coding is defined as "the process of breaking down, examining, comparing, conceptualizing, and categorizing data (Strauss & Corbin, 1998, p. 61). A major purpose of creating the coding categories is to make the coding

process as systematic, objective, and time-efficient as possible. As Dilevko (2009) argues, the development of a clear classification system is one of the most important elements in producing sound data in content analysis. This is because a classification system with clearly defined categories not only generates reliable results but also makes the results accountable. As Krippendorff explains;

> *Data are commonly thought of as representing observations or readings, but they are always the products of chosen procedures and are always geared toward particular ends -- in content analysis, data result from the procedures the researcher has chosen to answer specific questions concerning the phenomena in the context of given texts. Hence, data are made, not found, and researchers are obliged to say how they made their data (as cited in Dilevko, 2009, p. 94).*

Clear definitions of each support category, therefore, explain how the data were produced, and contribute to the trustworthiness of the final conclusion inferred from the data. Also, the use of pre-determined classification scheme makes the coding process time-efficient. Previous studies often took a strictly inductive grounded theory approach and let categories emerge from the data instead of using a pre-determined coding scheme (Klemm, Hurst, Dearholt, & Trone, 1999; Radin, 2006). However, this approach cannot fully utilize contributions from previous studies. The development and use of a classification system that summarizes the categories used in previous studies helps avoid the duplication of efforts.

The present study created a set of coding categories by summarizing the typologies of support used in previous research on depression online support group. As mentioned in the literature review, the typologies of support used in the previous studies include Cohen and Wills' typology of social support (Cohen & Wills, 1985), Cutrona Support Behaviour Code (Cutrona & Suhr, 1992), an adaptation of Weintraub content analytic method (Weintraub,1989), and a modified version of a typology developed by Roberts et al (1991). The following categories were directly adopted from these classification systems: informational support, emotional support, social companionship, and instrumental support. In an effort to make my coding categories as comprehensive as possible, an additional literature review was conducted to identify other literature published on the topic of typology of support. Appendix B provides the details of the

search strategy and results. Based on the review of these studies, the following categories and subcategories were added to the coding categories of the present study: coaching support, technical support, spiritual support, understanding, encouragement, affirmation, chatting, and group cohesion.

It should be noted that, although the present study used a pre-defined typology of support as a coding scheme, it did not deny the possibility that there may be some posts that do not fit within any of the existing categories. If there was a post that did not comfortably fit into any category, the post was coded as "other". After the completion of the coding, the "other" category was re-visited for further analysis. Following this process, a final coding scheme was developed.

3.5.3 Final Coding Scheme

Appendix E provides the final list of all of the support categories and definitions. The final coding categories consist of informational support, emotional support, coaching support, companionship, technical support, instrumental support, and spiritual support. This section provides the definition of each category.

Informational Support: A post was classified as a request for informational support when it asked for lay knowledge or details about a personal experience in relation to specific treatments, health care professionals, or places related to depression, such as clinics and hospitals. The posts that offered lay knowledge or shared personal experiences in relation to any of those areas were coded as "provision" of support (Bambina, 2007; Finn, 1999; Kerr et al., 2007; Klemm et al., 1999). Informational support is practical and specific in nature.

Emotional Support: Emotional support is sentimental and compassionate in nature. Depending on the type of sentiment it contains, emotional support is categorized into three groups: understanding, encouragement, and affirmation (Bambina, 2007; Finn, 1999; Fitch, 1999; Kerr et al., 2007; Klemm et al., 1999; Radin, 2006). Requests for understanding involve the desire to find someone who can relate to one's experience, feelings, or concerns. It typically describes current struggles or challenging experiences of the recent past and asks if anyone has been in a similar situation. Provision of understanding defined as relating to what someone is expressing based on a similar experience. The second subcategory of emotional support is encouragement. Request for encouragement is defined as the expression of despair, sorrow, exhaustion, or hopelessness or the need to feel hopeful. On the other hand, provision of

encouragement is characterized as an expression of sympathy or an attempt to inspire hope (Bambina, 2007). Finally, the third category of emotional support, affirmation, involves the need for and provision of acceptance or validation of one's behaviour. Request for affirmation is characterized by expression of uncertainty or need for positive feedback on one's idea, attitude, or action (Bambina, 2007).

Coaching Support: Coaching support is defined as the provision of ideas or opinions for the purpose of finding solutions or coping strategies to the problems being presented (Brescia, 2003). Coaching support goes beyond providing a sympathetic ear to the support seeker; it attempts to provide a possible solution to the problem or to offer strategies to manage a given situation. Thus, receivers of coaching support can potentially learn from the support givers' perspectives and, in doing so, improve their coping skills or problem-solving abilities. Depending on which areas the support seeker aims to improve, coaching support is classified into three subcategories: coping psychological symptoms, coping with physical symptoms, and coping with socio-economic problems.

Companionship: Companionship is defined as conversation that is not directly related to depression. There are two types of companionship, chatting and group cohesion (Bambina, 2007; Finn, 1999; Klemm el at., 1999; Radin, 2006). Chatting is general conversation among specific users about a topic that is not directly related to depression. Group cohesion is conversation directed toward all users in the Forum regarding permission for an action that is related to the functions of the Forum (Bambina, 2007).

Spiritual Support: This type of support is defined as conversation about the meaning of life, a sense of purpose in life, or relationship with a higher being (Bambina, 2007: Kerr e al., 2007). A post is regarded as a request for spiritual support when it provides one's own or other people's views on these issues.

Instrumental Support: Instrumental support (also called as practical support by Kerr et al., 2007) is defined as help with daily activities in an offline context, such as child care, transportation, delivery of items, financial assistance, and so on. As mentioned in the Literature Review section, instrumental support is rarely witnessed in online support groups but is included in the support category to make the findings from the present study comparable to those from the previous research.

Technical Support: Technical Support is help with specific technical problems, such as difficulty in making or deleting a post.

In creating the coding categories, much effort was made to make them exhaustive and mutually exclusive. While reviewing the coding categories, I noticed the similarity between emotional support and coaching support, and whether the two should be combined into one category or kept separate had to be determined. After much consideration, I decided to keep both categories separate by redefining the categories in a way that highlights their fundamental differences and by providing examples. The primary focus of emotional support is to provide attention to the emotions presented by the support seeker. The main focus of coaching support is, on the other hand, the opinion offered by the support provider. Coaching support extends beyond the provision of attention or sympathy and attempts to provide a solution to the problems being presented or an alternative way of interpreting the situation. The rationale for keeping the two categories separate was that having two separate categories would be helpful in the analysis and evaluation of online support groups as a source of support. If the findings of this study indicated that there are more exchanges of emotional support than coaching support, we could hypothesize that depression online support groups are a useful resource for users to receive sympathy or reduce emotional burdens, but not to eliminate the causes of the burdens. If the opposite results were found, we could hypothesize that depression online support groups are a place of empowerment, where users learn how to cope with depressive symptoms and how to manage other problems associated with depression. But if the two categories were combined into one, a significant number of posts would be classified into one large category and those hypotheses could not be developed.

3.5.4 Coding Process: First, I read a post once to become familiar with the general characteristics of its content. Second, I read the same post again more carefully to judge if the post was a form of request for support, provision of support, or something else. As shown in Appendix E, the coding categories provide two definitions for each support category (support request or support provision). As such, if the post was judged as a request for support, I consulted the section that reads "Requested" and determined which type of support was being requested. If no definition was applicable, the post was recorded as "Other".

As soon as the coding began, it became clear that identifying the types of support was not

as straightforward as expected. There were three reasons that made the coding process complicated. First, some users did not necessarily follow the structure of the Forum. The Forum offers thirteen major themes from which users are expected to choose the one that appears most relevant to the question in mind. Also, users are expected to make a new topic when they wish to discuss a new subject. However, some users do not necessarily follow these expectations and select a theme that does not match the post they made. Some users also interrupt others' conversation by making a post with a new question that is not related to the ongoing discussion. This problem was handled by focusing less on the structure of the Forum and more on the content of each post. It was also necessary to assume that the first post of a topic did not always contain a request for support. Instead, it was essential to accept the possibility that a request for support could be found at any location in a topic.

The second factor that complicated the coding process was that while some posts state the types of information or support they are looking for explicitly, other posts do not clearly address what they want. An explicit request for support typically takes a question format, while the latter describes a struggle or negative emotions such as sorrow, despair, and hopelessness. By doing so, these posts seem to invite readers' attention and ask for support implicitly. The problem with these posts containing implicit requests is that readers must guess the type(s) of support wanted by the writers. Three strategies were used to manage this problem. First, instead of examining a post as an independent entity, it was necessary to understand the meaning of each post by reading the entire topic to which each post belonged. Contextualization of each post provided the coder with some indication of the type(s) of support embedded in a post. The second strategy involved classifying support requests into two categories: explicit and implicit. A post was classified as including a request for explicit support when it formulated a need in a question format (e.g. "Does anyone know …?") or with a query embedded in a sentence (e.g. "I would appreciate input from anyone who read this."). Implicit requests for support were defined as the disclosure of distressing experiences or emotions. Obviously, coding implicit requests is more subjective since the coder must figure out what they are looking for from the content and context of each post. In contrast, coding explicit support request is much more straightforward and more objective.

It is important to note that the unit of analysis in this study was an individual post and

therefore posts could be classified into more than one support category. A review of the literature revealed that previous studies took one of two different approaches: some strictly allowed a post to only be in one category and others that accepted that a post could be coded into multiple categories. There are strengths and limitations to each approach. I decided to take the latter approach, primarily because of the length of posts being examined. As exemplified in the example above, it was very common to observe a post that described multiple issues and needs in more than 300 words. In this situation, one category cannot adequately represent the content of the post. Forcing such a post into one category is, in fact, likely to decrease the validity of the results. Allowing multiple support categories to be assigned to a post was likely to generate the results that better reflect the reality of interaction among users. Thus, when a post appeared to have the characteristics of both informational support and emotional support, for example, the post was coded as both. A post could be also assigned as both a request for support and the provision of support when it responded to someone's support request and, at the same time, expressed the need for support.

As illustrated by the above example, the coding process was complex and required deep engagement and careful attention to the details of each post. This example also illustrates the role of interpretation in the assignment of the support categories to which the posts belong. To maintain a reasonable degree of objectivity and consistency in coding the 980 posts, the default assumption was that all of the support categories could apply to the post. After reading a post carefully, the support categories that did not apply to the content were eliminated one by one with the assistance of the definition included in the typology of support, leaving only those that matched the post.

While coding the posts, the constant comparative method was employed to maintain the sensitivity for subtle differences among the posts. Constant comparative method is a concept used in grounded theory, and it "helps analysts obtain a grasp on the meaning of events that might otherwise seem obscure" (Corbin & Strauss, 2008, p.77). As researchers proceed to data analysis, each incident or activity in the data is constantly compared with other incidents or activities for similarities and differences. Incidents that appear similar are combined together to create a category. Researchers continue to look for other incidents that represent, and provide insights into, the category. The use of constant comparative method ensures that analysts

discover variation among data and facilitates the linking of categories (Corbin & Strauss, 2008). In the present study, all posts were first categorized into seven support types based on their pre-determined definitions of these support types in regards to the typology of support. After the categorization was complete, the constant comparative method was used for the categories that contained significantly more instances than others. By doing so, more detailed subcategories were created to illuminate the variation within the categories.

3.5.5 Self-reflexivity: Qualitative researchers have expressed concern about the possibility of bias and assumptions that researchers' can bring to the way they observe, interpret, and analyze research subjects (Babbie, 2007; Crewell, 2007). The characteristics of the researcher can affect what they see and how they interpret what they see (Babbie, 2007, p. 292). Creswell (2007b) also addresses the fact that how we approach the subject of our study is "a reflection of our own interpretation based on the cultural, social, gender, class, and personal politics that we bring to our research" (p. 179). To manage this problem, qualitative researchers apply the idea of self-reflexivity during the course of their research. Reflexivity refers to researcher's awareness of the "biases, values, and experiences that he or she brings to a qualitative research study" (Creswell, 2007b, p. 243).

In the present study, I am the researcher: a female PhD student in her early 30s, with a background in Information Science. I am very familiar with new information communication technologies, and I maintain regular contact with people via social media. Born and raised in Japan, I became concerned with the higher rates of major depressive disorder and suicide in Japan compared with those in many other countries. I became interested in exploring possible solutions to the problems and moved to Canada to study how social media can contribute to the lives of people living with depression. When I first moved to Canada, I had enormous problems resulting from language and cultural differences. During this period, I became an active information seeker to find available resources to support international students. Through my active involvement in student organizations and campus events, I discovered the significant number of both Canadian and international students suffering from mental and emotional issues. However, these students either hid their experience to avoid stigmatization or continued to suffer due to the low availability of services on campus. Having experienced the transition period myself, I developed a keen desire to support those who struggle with the same problems that I

once did. This desire has been accompanied by a determined approach to find a space for people experiencing various mental or emotional issues to share their experiences and develop supportive relationships.

My background could have affected what I saw and how I interpreted the content of the posts exchanged in the Depression Centre Forum. For instance, my strong desire to find that online support groups provide support for people living with major depressive disorder could have generated bias in my analysis. The instances that exemplify the benefits of support groups could have received more attention than the ones that demonstrated the possible risks. Also, I assumed that people come to the Forum to either seek support or provide support to people living with depression. But there might have been other people who join the Forum for other reasons. Consequently, there might have been some posts that could have been classified as neither request nor provision of support. To prevent my assumption or bias from creating skewed results, I tried to maintain the awareness of my own assumptions during the data collection and analysis. Also, I developed the typology of support with clear definitions of support categories, based on the classification scheme used in previous studies. I tried to maintain a reasonable degree of objectivity in the way I classified the posts by strictly following the definitions described in the typology and by allowing the use of the "other" category when none of the definitions applied to the content of a post being analyzed.

3.5.6 Intercoder Reliability: In order to further minimize the impact of my potential bias in classifying the posts, intercoder reliability check was conducted. Intercoder reliability is "the extent to which independent coders evaluate a characteristic of a message or artifact and reach the same conclusion" (Lombard, 2010, p. 589). If it is not established and assessed properly, the interpretation of data is subject to researcher's bias and the results cannot be considered valid. Kolbe and Burnett (1991) argue that intercoder reliability is often perceived as "the standard measure of research quality" and "[h]igh level of disagreement among judges suggest weakness in research methods, including the possibility of poor operational definitions, categories, and judge training" (p. 248). Assessment of intercoder reliability is, therefore, a crucial element in content analysis (Neuendorf, 2002; Lombard, 2010).

In this study, a research assistant was employed for the purpose of assessing the coding reliability. In choosing a research assistant, I deliberately selected someone with experience in

health research and with a socio-cultural background that is different from mine. Since I was educated in Japan and speak English as a second language, it was particularly important to see if another individual who speaks English as his or her first language would interpret and code the posts in the same way I did. The research assistant recruited was a white male in his late 20s who was born and raised in Canada. He speaks English as a first language. After graduating from a university in Canada majoring in biology and psychology, he worked for a middle-sized hospital as a research assistant to gain experience in health research.

The process of the intercoder reliability check took five steps. The first step involved coder training. I introduced the coding categories (Appendix E) to the research assistant by explaining the definitions and a few example posts that belong to each category. We discussed whether the differences of each categories were clear enough and made sure that there was no overlap or confusion. Second, the assistant coded 20 posts independently, which were selected randomly from the 980 posts for the purpose of coder training and which were not part of the full sample. He was asked to underline those words and paragraphs that helped him judge the support type(s) contained in each post. He recorded any question, confusion, or struggle that occurred. Third, we reconvened to discuss the questions he had, compare the coding results, and discuss discrepancies. Intercoder reliability (percentage agreement, Cohen's Kappa, and Krippendorf's Alpha) was calculated by using a software called ReCal2. Table 5 shows the results of the intercoder reliability test. According to Lomberd (2002), there are conflicting views on minimum acceptable level of reliability, but there is general agreement that coefficients of ".90 or greater are nearly always acceptable, .80 or greater is acceptable in most situations, and .70 may be appropriate in some exploratory studies for some indices" (p. 600). Considering the exploratory nature of the present study, coefficients of .70 or greater was set as the minimum acceptable level of reliabiliy for the indices to be used. As Table 5 indicates, the coefficients of the two variables (Psychological coaching support and Socio-economical coaching support) were below the acceptable level of reliability, we reviewed how we coded each post by paying a particular attention to those two variables and analyzed why the difference might have occurred. Fourth, another pre-test was conducted with another representative sample of 20 posts. The second coder coded the posts without any consultation or guidance. Fifth, since the reliability levels in the pilot test were adequate, he proceeded to coding the full sample. The full sample for the

intercoder reliability check consisted of 100 posts, which included 80 newly selected posts and the 20 posts from the second pretest. The results of intercoder reliability test are reported in Table 6. The coefficients of all variables were above the minimum acceptable level of reliability.

3.5.7 Ethical Considerations: The Internet has provided researchers with a wide range of opportunities to explore human interactions in new ways. Without the Internet, non-intrusive research on information exchange among depression patients would have been difficult. At the same time, however, the Internet has created a new set of ethical dilemmas and questions that have not been addressed in existing ethical guidelines. In particular, issues of privacy, confidentiality, anonymity, informed consent and copyright have become problematized through various online research that use data collected from the Internet. Existing ethical guidelines are in the process of integrating ethical issues of Internet-based research, taking into consideration the recommendations made by academic and ethics committees. Starting from the most updated information about the recommendations made by the members of Social Sciences and Humanities Research Ethics Special Working Committee: A Working Committee of the Interagency Advisory Panel on Research Ethics, this section discusses some of the key ethical considerations that are relevant to this research.

In February 2008, based on their assessment of ethics in Internet-based research, the members of the Advisory Panel on Research Ethics made ten recommendations. Two of them are particularly relevant to this study. First, the Committee recommended that researchers differentiate types of Internet-based research based on the categories proposed by Kitchen (2007). Kitchen distinguishes three types of web-based research: non-intrusive web-based research, engaged web-based research, and online research. She argues that only the second and third categories require an ethical review. The Committee agrees with her opinion, and makes the recommendation that "non-intrusive web-based research need not be submitted for ethical assessment", but that researchers should demonstrate that "the material collected is in the public domain and that there are no problems related to intellectual rights or copyright" (SSHRC Research Ethics Special Working Committee, 2008, p.1).

Considering that the research of the present study is non-intrusive and that the site is publicly accessible, this study seems to pose little ethical problems in terms of privacy and risk associated with the research. Non-intrusive research is defined as research that does not involve

direct interaction between the researcher and individuals (Canadian Institutes of Health Research, Natural Science and Engineering Research Council of Canada, and Social Sciences & Humanities Research Council of Canada, 2010, p. 18). Publicly available information is "any existing stored documentary material, records or publications, which may or may not include identifiable information" (p. 17). This study examines posts that are made by users of an online support group. The content of the posts are accessible to anyone who has Internet access and thus the information under examination is considered public.

However, not all researchers agree with the perspective proposed by the SSHRC Research Ethics Special Working Committee, and consensus regarding the boundary between the public and private sphere on the Internet is yet to be achieved. In fact, the Committee strongly recommends that researchers "must explain the criteria used to evaluate whether the material is in the private or public domain," (p. 1) when they collect material from chat rooms or online forums. The details of the "criteria," however, are not provided by the Committee. One potential problem is that even though researchers judge that the online environment is a public space, Internet users may perceive it as private space. Whitty (2004), for example, discusses the potential gap between researchers' judgment and non-researcher's perception and argues that it is not ethically acceptable to take advantage of "people's false sense of privacy and security" (p. 211). This is only one of many areas in Internet research where conflicting opinions exist. In general, the ethics of Internet research is still in the process of clarification and refinement. Researchers, therefore, need to take careful consideration of how to apply ethical issues, such as privacy, confidentiality, sensitivity of the subject, and informed consent, to the context of the Internet when designing web-based research.

The concept of privacy, for instance, is particularly difficult to apply to the world of Internet-mediated communication, particularly because it has been evolving continuously. Currently, the Internet offers a wide range of online environments, from text-based chat rooms to face-to-face web-conference applications. People may have different expectation of privacy in different online environments. Consequently, it is particularly difficult for researchers to establish the definition of privacy and its guidelines for web-environments. As a result, ambiguity exists in many areas of the ethics guidelines and further clarification is necessary for practical applications. For instance, the Tri-Council Policy Statement: Ethical Conduct for

Research Involving Humans (TCPS2) states that an ethical assessment by a ethics board is not required for a research that involves information that is "publicly accessible" and "there is no reasonable expectation of privacy" (2010, p.17). However, TCPS2 does not provide a clear definition of "reasonable expectation of privacy" nor does it explain what kind of environment is considered to be a place where there is "no reasonable expectation of privacy," leaving room for multiple interpretations. The data collection site for this study, for example, is an online support group, whereby interaction is viewable to anyone who has an access to the Internet. But the community has over 1000 registered members, and it is difficult to make a reasonable assumption about their expectation of privacy. TCPS2 does not clearly explain how researchers can measure and prove all users' expectation of privacy of a specific web environment.

In order to manage this problem, the ethics working committee of the Association of Internet Researchers (AoIR) recommends that researchers consider whether or not there is a policy that establishes specific expectations among users and if there are mechanisms that indicate that their interactions should be regarded as private, such as restricted membership (Ess & the Association of Internet Researchers, 2002). In the case of the Depression Centre, users do not need to register or sign-in with a password in order to view posts made in the support group. Anyone can view the contents of the posts as long as he or she has Internet access. Moreover, all users need to agree with the Depression Centre Support Groups User Agreement (Evolution Health Inc., 2010) in order to participate in the support group. Section 9 of the Agreement states that “[y]ou agree that posts and messages are for the public domain and are not private. Therefore, you agree that any post or message that you create may be reproduced in any manner by the Service”. Considering the fact that the public is given uncontrolled access to the support group and that there is a policy statement that explicitly defines the community as a public space, it is fair to assume that users understand the public nature of the support group and that there should not be reasonable expectation of privacy.

The sensitivity of data should be also taken into consideration. This study only analyzes anonymous information submitted to the support group. The privacy risks involved in this study are, therefore, perceived to be minimal. The topics that are discussed in the group include symptoms and treatments of major depressive disorder and the impacts of depression on daily lives. Considering the prevalence of stigma associated with mental illnesses, these topics should

be considered sensitive in nature. However, members of the support group discuss these topics anonymously by using a nickname. In fact, the Depression Centre Support Groups User Agreement explicitly states that users "will not post any personally identifiable information within the Service including but not limited to email addresses, your real name or any other information that could potentially identify you, another member or any other individual" (Evolution Health Inc., 2010). Furthermore, the administrators of the community monitor all of the interactions among users, and if they find any personally identifiable information, they eliminate the content as soon as possible.

In terms of data ownership, users are informed of the fact that the company that runs the group collects personal information and uses it for research purposes. This information is stated clearly in the Privacy Policy, the Depression Centre Support Group User Agreement and during the registration process. Users cannot complete the membership registration without agreeing with the statement that "your anonymous information will be used for purposes of improving this program. Your use of this program is subject to your data being used for research purposes". Users are, therefore, provided with multiple opportunities to learn about the nature of the support group as well as the ways that the data is used by the company, and to decide whether or not they want to become a member.

This study was approved by University of Toronto Research Ethics Board in August, 2011. This study did not seek written consent from users of the Depression Centre Forum for the following reasons. First, this is a non-intrusive research that only involves anonymous information. This study examines recorded, anonymous communications in a publically accessible online support group and anonymous personal information that users submitted to the support group at the time of registration. Therefore, the research involves no more than minimal risk to the participants, and the lack of the participants' consent is unlikely to affect the well-being of the participants adversely. Second, users are participating in the support groups based on the understanding that the data they submit to the group will be used by the company or granted agency for research purposes. The next chapter contains direct quotes from some users' posts. But the researchers made sure that none of those quotes contained personally identifiable information. Usernames, for example, were removed from the quotes. Those direct quotes are , therefore, unlikely to upset the users who created those posts. As I mentioned in the previous

paragraph, users are explicitly informed that, if they consent to participate, both the anonymous personal information they submit during the registration and the data they create in the support group will be used to for research purposes. Users are required to become familiar with the policies and rules of the Depression Centre. Only when they agree with the policy, can users become a member and start participating in the support group. Users are given an opportunity to exit the support group if they do not agree with this policy. Additionally, all web pages within the support group provide a link to its Privacy Policy that outlines the types of anonymous information collected and how it is used. Even after the completion of the registration, users can re-visit the policy and quit their participation if they change their mind.

Chapter 4: Results

4.1 Sample Characteristics:

The sample posts (N=980) made between January 1 and December 31, 2010 were retrieved from the Evolution Health databases on February 24, 2012. Of the 980 posts, 650 posts were created by 67 users and 230 posts were made by 9 health educators, who were trained employees of Evolution Health.

One notable finding was the diversity of the users' demographic backgrounds as shown in Table 8. Users of varying age participated in the support group, with youngest users aged 21 and the oldest aged 61. The average, median, and mode were 38.4, 35.5 and 51, respectively (N=60, the birth dates of the other 7 users were missing). As Table 8 shows, users from various countries registered with the site.

Another interesting finding was that many members had registered for the support group while receiving formal treatment. Considering the nature of the support group, it was not surprising that all of users except one identified themselves as depression patients. The mean, median and mode of the depression rate, depression interference and depression level indicated that users considered their depressive symptoms as strong, causing high level of distress and high amount of interference in their normal daily life in the past two weeks. More than half of the users (42) reported that they were receiving formal treatment, and about half of the users (31) had received cognitive behavioural therapy in the past. Those findings indicate that users utilize both the online support group and formal treatment.

Varying amount of posts made by users indicated that users' degree of commitment to the support group varied significantly. On average, users made 11.2 posts, with a range of 1 to 1038 posts per user. The median number of posts was 4 and the mode was 1, indicating that many users left the community after making only a few posts, and a smaller group of loyal users made a significant contribution to the creation of the posts. About two third of the users (N=44) made one or more posts in the Forum at some point between January 1 and December 31, 2010 and left the community within a year, while 9 users continued visiting the community until 2012.

4.2 Who's Making a Post to Seek Support? Characteristics of Users Who Made the Original Posts:

In total, 52 unique users created 260 posts that contained requests for support. The second

column in Table 8 describes the characteristics of those users who made those posts. A comparison with the characteristics of all registered users indicates that the majority of members (76.1%) had made at least one post to request support since their registration. The number of requests for support they made ranged from 1 to 36 per user, and the average number of request made was 5. As Table 8 indicates, there was no significance difference between the characteristics of all registered users and support seekers in terms of demographic and clinical status. The average, median, and mode membership length of users who created posts containing requests for support were, 276 days, 142 days, and 4 days respectively, indicating that smaller number of loyal users stayed in the community for a long period of time, while most users stayed for a shorter period of time.

4.3 What are They Asking for? Types of Support that Users Requested

The results of the content analysis indicate that the users of the Depression Centre requested informational support, emotional support, coaching support, companionship, instrumental support, and technical support from other users. There were no instances of requests for spiritual support. Table 9 provides the descriptive statistics of the number of instances of support requests organized by support category. The total number of support requests is larger than 260 (the total number of posts created by the support seekers) because many posts contained more than one type of support request. Tables 10.1-10.19 summarize the detailed content of support requests organized by support type.

Emotional support appeared in the largest number of instances of requests for support, followed by coaching support and informational support. Among the three subcategories of emotional support, encouragement was requested most frequently, followed by affirmation and understanding.

Users most commonly sought encouragement in the areas of interpersonal relationships affected by depression, difficulty managing depressive symptoms, management of depression and work, and coping with depression and other life struggles as illustrated by the following post:

> *[…] recently things have been getting a bit much again, and I am also afraid of slipping back into the place I was early last year. The problem is that it is my circumstances and*

> *taking meds is not going to make them better. I have financial problems, health problems, family issues. I feel overwhelmed and lost and some days really don't see the point of all this struggling and trying so hard just to end up where I started.*

This user continues to describe her life circumstances in greater details, including the inability to afford a psychologist due to financial problems, a lack of close friends and support from her husband, and other health problems that negatively interfered with her daily life. Those circumstances seem to be presented in order to reinforce her earlier point that she could not see the benefit of continuing to make efforts to improve her situation. Although this post does not contain any direct question, it describes her distress, exhaustion, frustration, and sadness in such intensity that the viewers of the post felt encouraged or obligated to provide encouragement or sympathy by writing to her. For instance, one user responded to the original post with sympathy:

> *It sounds like you are going through a lot at the moment, I can see that you are overwhelmed. As other members mentioned, it is possible to be happy even when life is very difficult. […] I believe that things will get better, use your passion and frustration to work towards improving your circumstances. If you put in effort you may feel better about it. Check in and let us know how you are doing. We are here for you.*

The above response contains both understanding and encouragement. The user starts with expressing his sympathy and understanding for the circumstances being described and then attempts to inspire hope by stating that "things will get better" and conveys the message that there are other users at the Forum willing to see her updates and to support her progress.

Users sought affirmation in such areas as interpersonal relationships, experience of work performance negatively affected by depression, difficulty in managing depressive symptoms, and receiving formal treatment. For instance, a user made a post to report his recent progress with mixed feelings:

> *It may be called good, I guess. Ive been doing the testing for job placement and it appears I should utilize my skills in food service. Since thats what I did for 30 years and at my age school doesnt make sense. The program Im working with know of high end*

> *assisted living type situations that are new and BIG$$ or universities in the area. So its a step. My testing also identified me as being a introvert. He thinks I need CBT for it. I dont know what to think on that. I just thought I was always odd and didnt quite fit in.*

The above message communicates both excitement and confusion for the results of the job placement test, while implicitly asking for feedback from others. Other users, in fact, responded with positive reinforcement (e.g. "[s]ounds like you're on the right track") while others also congratulated him on his progress with statement such as:

> *I've been missing your posts and have been wondering where you've been. It's good to see that you've made progress in part of your life since we last heard from you.*

Users sought <u>understanding</u> in similar areas as affirmation: interpersonal relationships, experience of work performance negatively affected by depression, and difficulty in managing depressive symptoms. Although understanding can be requested both in an explicit and implicit format, there were significantly more instances of implicit request (the next section provides frequency details), as illustrated in the following example:

> *having another bout about with depression, and I feel as if the people in my life don't see this as a real illness. When they talk to me and I'm feeling this way, they tell me how much I have to look forward to, how much I have to be thankful for, etc. I know all of this, but I still can't help feeling the blues. [...] On top of feeling depressed, I'm frustrated! Arrrgggghhhhhh!!!!!!! Anyone else out there experience this?*

The above post begins with an expression of frustration as a result of the lack of understanding from others around him and asks other users if anyone has experienced a similar situation or feelings. This topic received eight responses (including some from the user who wrote the initial post), the following of which exemplifies understanding:

> *I have definitely felt this before, on both sides of situation. About 10 years ago, my husband suffered from a major debilitative bout of depression for over a year. I had never had depression and could not understand. I still loved him and supported him, but just could not "get" why he could not snap out of it and appreciate all that he had. Now, he is fine, and I am the one suffering from MDD. He is much more understanding than I*

> *was because he has been there before. I think, without first hand experience of depression, it is really hard for others to sympathize. […] I just wanted to let you know that you are not alone in this situation. […]*

The user who wrote the initial post replies by stating:

> *[t]hanks for that reply. It is good to know that other's feeling the same way and have experienced the same thing, especially with their families. You've given me some things to think about. Thanks!*

This message conveys the sense of appreciation to the response, demonstrating a successful match between what the support seeker was looking for and what the support providers offered him.

Coaching support was found to be requested in the second largest number of instances. There were 39 explicit requests for coaching support. Of these instances, 25 posts outlined instances of coping with psychological symptoms, 2 posts outlined instances of coping with physical symptoms, and 19 posts outlined instances of coping with socio-economical problems. Requests for coaching support in regard to coping with psychological symptoms sought advice on how to manage depressive symptoms (8 posts), opinions about issues related to formal treatments (5 posts), advice on relationship issues (5 posts), advice on how to manage depression and other life struggles (4 posts), advice on how to manage work and depression (2 posts), and other (1 post). There were only 2 posts containing requests for coping with physical symptom; one asked how to get up in the morning; and the other asked how to manage multiple life struggles with low energy due to depression. Of the 19 posts with requests for coping with socio-economic problems, the most common issues were regarding how to manage interpersonal relationships (such as a marriage partner, boyfriend and girlfriend, friends, family members and other people), while experiencing depressive symptoms (10). Also, users commonly sought advice on how to manage both depression and other life challenges, such as financial problems (4), and how to deal with depression and work (4).

For instance, the following post conveys an explicit request for coaching support in coping with psychological symptoms. This user utilized the online version of the cognitive behavioural therapy provided through the Depression Centre. She recognized the importance of adhering to

the therapy to avoid setbacks and recover from depression completely. However, she found it difficult to continue the therapy when she was experiencing improvement in her mood.

> *I'm finding, much to my amazement, that I have begun to feel better after having been in the program for just a few weeks. [...] While it's a wonderful feeling, and I hope each and every one of you can experience it, I have discovered a dilemma... I'm finding it difficult to motivate myself to come back here and do next week's session. [...] Any suggestions on how to stay focused when feeling good?*

The provision of coaching support is specific and practical in nature. After reading the above post, several users responded with practical advice, such as preparing a reward and sharing the experience with a healthcare professional. Below is an example of coaching support provision:

> *I make this a part of my daily routine. I am able to do that as my son is grown and don't have as many immediate obligations that you do. However, you could set a time every other day, every week, etc. And designate this time to maintaining what you've found. [...] Also, I share this information with my therapist on a regular basis. I share my homework everytime we meet and how I am progressing (this holds me somewhat accountable).*

Informational support Request for informational support occurred in the third largest amount of instances. Among 29 requests for informational support, a majority (N=14) contained questions regarding medication. The most common questions about medications were related to side effects of specific anti-depressants (6) and the long-term effectiveness of specific anti-depressants (3). Other types of explicit requests for informational support included questions about interventions alternative to medications (5), clinic and hospital (2), Cognitive Behavioural Therapy (1), books (1), and others (5). Substantially fewer instance of informational support were identified in an implicit format, indicating that users commonly asked information related to specific aspects of depression in explicit question format.

Due to its specific and practical nature, almost all of the requests for informational support were expressed explicitly in the form of specific questions, such as:

> *Has anyone had shakiness and vertigo as a side effect of paxil-am really struggling with this. Thanks.*

This post received four responses from other users. One of them was a good example of the provision of informational support:

> *I have had these symptoms when I first started the drug but it soon passed. If you are struggling with them, to the doctor you go!*

This post provided a short answer to the question in the form of informational support, although it was also coded as coaching support, since the post also provides a suggestion to go to see the doctor as a coping strategy with the problem being presented.

Companionship: There were 6 instances of explicit requests for companionship of which five instances were requests for chatting and one was a request for group cohesion. The requests for chatting asked for others' opinions about the participants' choices of avatars and relationship between the avatar and oneself. They also asked about what the definition of being "normal" is, what their plans were for Valentine's Day, what their time preferences were for exercise, and whether anyone was interested in taking a pledge together on a specific day. For instance, a user reflected on her choice of avatar (a photo or an image that users can upload to their profile section) and asked others the following questions:

> *[...] What does your avatar and/or screen-name reflect about you? Why did you choose them? What is the meaning for you?*

In response to these questions, two users explained the reasons they chose a specific image for their avatar and the meanings behind their choice of username. These interactions are not directly related to the issue of depression. Yet, several users still responded and appeared to be enjoying the conversation.

There were limited examples of group cohesion in the sample data. One user asked all of the users in the Forum if the frequency of her posts were annoying anybody. Other users responded with statements such as "[w]ell, I cannot speak for others, but I know I love your posts and I always look forward to your input. So post often!" "No. I always love reading your posts. Sometimes I wonder where you find the time to do it and how you know what to say at the right moment."

Technical Support: There were 2 instances of explicit requests for technical support.

Both were asking about how to upload photos to the Forum from a local hard drive. One user mentioned the fact that he enjoys coloured pencil painting as a way to manage depression. In response, another users asked him to upload some of his drawings. However, he found it difficult to do so and made the following post:

> *I just wish it was easier to upload them on the site. It is really quite awkward and time consuming trying to do it in the "avatar picture space" with the size restrictions and all. Perhaps you could mention to the tech guys there that a feature that makes it easier to upload pics in the "text space" would be nice.*

The above message is a good example of implicit request for technical support. A health educator who works for the Evolution Health and monitors users' conversation found his post and provided a solution.

Instrumental Support: There was only one request in this support category. Several users discussed difficulty in increasing and maintaining motivation to do exercise on a regular basis. In this conversation, one user made a creative suggestion to organize a team and do exercise "together" virtually using Wii around the same time of a day.

4.4 Who is Answering? Characteristics of Users Who Responded to Support Requests

In total, 48 users and 10 health educators created 606 posts that contained provision of support. The third column of Table 8 provides the details of support provider characteristics. The most notable finding was a significant overlap between support seekers and support providers. Of the total 48 support providers, 34 users who provided support also sought support. The number of posts they made ranged from 1 to 78 per unique user, and the average number of posts per user was 8.3.

Characteristics of support providers were similar to those of support seekers, except some minor differences. Compared to the support seekers, slightly more female, more loyal and less depressed users provided support. The average, median, and mode membership length of users who created posts containing provisions of support were 330 days, 230 days, and 30 days respectively. Those differences were, however, minor, indicating that there were no significance differences in demographic or clinical characteristics between support seekers and providers.

4.5 What is being offered? Types of Support that the Respondents Provided

In total, 606 posts were coded as provisions of support. Among the 606 posts, there were 91 instances of provision of informational support, 507 instances of emotional support, 222 instances of coaching support, 74 instances of companionship, 3 instances of spiritual support, 2 instances of instrumental support and 4instances of technical support. Among the subcategories of emotional support, which was the most commonly provided category of support, affirmation (258) was provided most frequently. Encouragement (140) was provided the second most frequently, and understanding (109) was the third most frequently provided subcategory of emotional support. Among the subcategories of coaching support, support related to coping with psychological symptoms (157) was provided approximately three times as frequently as support for coping with socio-economic problems (55). Support related to coping with physical symptom was provided the least frequently (10). Table 9 summarizes the frequency of support provision of each support category.

There were only slight differences in the number of responses provided to explicit support requests and implicit support requests. In total, 220 posts were made in response to explicit support request. When a user made an explicit request for support, he or she received 2.2 responses on average (median: 2, mode: 1). In response to implicit support requests, 266 posts were created in total. When a user made an implicit request for support, he or she received 1.7 responses on average (median: 1, mode: 1). In both cases, the majority of response posts contained multiple support types.

There were three instances identified in the sample data of spiritual support. Despite the small number of instances, it is notable because there were no instances of request for this support. All three instances were recognized in a topic that discussed difficulty with managing depressive symptoms. The initial post of the topic requested understanding from others about the user's struggle in conducting daily tasks. The focus of the conversation, however, changed slightly in the course of the support exchange. After hearing the updates regarding the improvement of her depressive symptoms, one user began to discuss her view on life and the presence of the universe that governs life. She wrote;

> *In my experience, once we open our heart and follow our path the universe takes care of the rest. Over and over I am learning to let my life unfold without trying to label and*

> *categorize everything. Once I let the flow take over I realize that things happen for a reason and that there is beauty to the events in my life. There is no point feeling pain, anger or jealousy because SOMETHING happened to me. I simply have no idea how the events from moment to moment will impact my life, I cant see the big picture so there is no point worrying about some event that happened. I just try to follow my heart and be present from moment to moment.*

The above user expresses her belief that the universe, something beyond her power, governs life. After reading this post, other users replied to her by agreeing with her approach to life. These conversations were coded as provisions of spiritual support.

This is a good example to demonstrate that the focus of conversation can change, especially in a topic that consists of many long posts created over time. Sometimes users shared jokes in the middle of support exchange to lift others' moods or they started talking about a subject that was briefly mentioned by others as a side story and developed it as a main focus of the later posts. For instance, when a user mentioned a dog in the middle of her explanation about how difficult it is to maintain all of her housework, some users began asking about the dog.

4.6 Lives of Users Portrayed in Users' Posts

From the quantitative and qualitative exploration of support exchange among users, some aspects of users' lives that generate various support needs began to emerge.

Quantitative analyses of user information suggest that people who come to the Forum have substantial needs for a wide range of additional support regardless of whether they were receiving any formal treatment. Among the 67 users in this study, 66 identified themselves as patients of major depressive disorder and more than half (42) stated that they were receiving formal treatment at the time of registration. Qualitative examination of the posts often discovered discussion among users regarding ongoing struggle with medications, psychotherapy, and health care professionals, which further reinforces the idea that users seek additional support from peers while receiving formal treatment.

Qualitative analyses of the posts, in fact, demonstrated how, for many users, depression is not the sole source of distress in their lives. Struggles related to managing depression and work also appeared frequently across categories. Typically, users expressed difficulty with regard to

making the decision to take a sick leave from work, suffered from sense of guilt during the break, and experienced mixed feelings of achievement and frustration after going back to work. Moreover, many users mentioned other health problems (experienced by them or their family members), dysfunctional marriage/family relationships, the loss of important other people, loneliness, and financial challenges. The presence of these struggles appeared to be associated with worsening depressive symptoms. Equally, depressive symptoms appeared to reduce the ability of users to manage their life struggles, creating a vicious circle.

This study found substantial unmet information needs among users. The qualitative analyses of requests for informational support revealed the lack of understanding among users about depression and treatments. Users expressed confusion about causes and symptoms of depression, and their lack of understanding often resulted in frustration. In terms of treatments, users were most interested in learning about medications. In fact, about half of the explicit requests for informational support related to questions about specific medications, such as the long-term effectiveness, side effects, and costs. Examination of posts also revealed some misunderstanding about formal treatments among users. Some users expressed fear of being locked up and they expressed difficulty in communicating with doctors for this reason. Others expressed their concern about being forced to take a treatment against their will.

The qualitative analyses of support exchange revealed some overarching themes across categories. The difficulty of managing depressive symptoms was the most frequently discussed topic in all of the instances of explicit requests for encouragement and affirmation, as well as in explicit requests for coaching support in managing psychological symptoms. The fact that users sought both emotional and coping support indicates that users not only want encouragement and sympathy but also to learn how to cope with those symptoms from peers.

Another overarching theme found across different support categories was difficulty managing interpersonal relationships while managing depression. It is the most frequent topic in explicit requests for understanding and coaching and in implicit requests for encouragement, affirmation and understanding. The qualitative analyses of posts illustrated that users struggled with managing positive relationships with friends, co-workers, boyfriends and girlfriends, marriage partners, family members, and other people in public. A closer examination of posts showed that depression could be both the cause and result of negative relationships. Issues of

stigma and exposure were also frequently discussed among users, as these factors block users' efforts to focus on their treatments.

4.7 Roles of Depression Online Support Groups in the Management of Depression Illustrated through Users' Exchange of Posts

One particular interest in the present study was to explore the overall characteristics of the nature of interaction and group's response, in particular. Users appeared to be able to discuss various difficulties and challenges caused by depression in ways that can generate relief, comfort and hope. The present study did not encounter any posts that contained any recommendation that could be extremely harmful or dangerous. There also were no posts that severely criticized or personally attacked other users. On the contrary, the users' interactions were characterized by an accepting and friendly atmosphere with supportive norms. Those who made a post to seek support typically received a response that began with sympathetic expressions. Some of the most common expressions used in these responses were "I can totally relate," "You are not alone," and "We are here for you". Taken together, the collective history of users' interactions created a sense of non-judgmental sympathetic community based on the common experience of the illness.

In fact, the Forum at the Depression Centre was described by some users as **a place to discuss what they cannot discuss in other venues**. For instance, one user shared his experience of seeing a doctor because he had felt extremely hopeless and depressed but could not say anything to the doctor. Before seeing the doctor, he had considered "the pros and cons of death". But he could not share those thoughts with his doctor because he was "worried about getting locked up as suicidal". To his post, other users of the support group responded with sympathy and understanding, instead of blaming or criticizing his behaviour. One user shared her similar experience in the past and explained how she planned to change her behaviour and why she wanted to do so. She wrote;

> *I had this very same fear when I went to the doctor for the first time. In fact, I was suicidal; I had been working on a plan; I did think about it all the time, but I didn't tell my doctor any of that. I played the whole suicidal thing down, saying that I thought about it occasionally. I didn't want to be locked up. Looking back (this was about 3 months ago), I think maybe admitting the truth and getting more intense help in a facility would*

> *have been better for me. [...] The meds I am on now (Lamictal and Lithium) have taken the suicidal ideation away, but my story could have ended up much worse. Looking back, I really think the more honest with our doctors we are, the faster and more effectively they can help us. When they don't know the whole story, when they are working on partial information, they can only give partial treatment. I am going to try and be more honest with my doctor in the future.*

To her response, the original poster still expressed his conflicted feelings about becoming more honest with the doctor. But he expressed his appreciation of the site where he could open up more than he could elsewhere. "Damn, you are all very nice people. I've told no one about any suicidal thoughts, except here. [...] I wish I could be more supportive of all of you, like you are with me."

Even if there was no fear of being locked up or receiving undesirable treatments, users expressed their frustration for not being able to discuss the illness with others who lack experience with the illness as patient. Sometimes, even though family members or friends wanted to support them, users felt that they "can't get" what the users are trying to explain or that they tend to give some advice that had adverse effects on the users, creating more sense of frustration. In such cases, the Depression Centre was appreciated as a place to meet with others who are experiencing or had experienced the illness in the past as a patient. Frequently, users experienced their appreciation to be able to meet others with the similar experience who can "actually get" what was being expressed. For instance, one user wrote, "I am so glad that I found this site. It's so different talking to people who have been through exactly the same thing, or something similar. None of my friend ever suffered from clinical depression and don't really understand it, though they really try to. So far, this has been great. Thank you for your help." Other user replied by stating that "I know I can relate to the issue of friends and family not understanding. They say 'why are you sad?' I say I'm not sad.... I'm depressed!" Another user explained that the reason he would not discuss his illness relates to issues of privacy and trust, and differences between face-to-face communication and anonymous communication on the Internet.

> *I only feel comfortable opening up when I can be anonymous. [...] I guess it's because I don't feel "safe" with face-to-face communication. I feel vulnerable, threatened. People will talk, share my innermost feelings around with everyone. I can't trust them to keep what I say confidential. I know if I shared with any family members, they would talk amongst themselves, and I find the thought to be intrusive and distasteful. I all for adding a human element to my life, but not in an intrusive way [...].*

From these posts, the depression online support group appears to serve its users as a place where users can talk about the issues that they feel they cannot discuss with their friends or families, even if they are willing to support the users.

As the quantitative findings from the present study demonstrated, there were numerous instances of understanding sent from one another through their posts. These posts made users realize that, in the online support group, they could find similar others who could truly understand their feelings and relate to their experience. There were many posts that expressed deep appreciation for knowing that there were others going through the similar struggle. One user, for example, expressed this realization had helped her stay hopeful and continue making efforts to manage her depression. "For me, you guys motivate me. I log on here and read your stories and how everyone is doing and it reminds me of that there are others going through the same thing, I'm not alone and I can do this... so hang in there!" The depression online support group, therefore, serves as **a place to meet sympathetic others with similar experience and to realize that they were not alone**.

Sometimes the Depression Centre also functioned as a place where users "just let it out" or vent with or without the expectation to have someone to listen. Typically, users began venting after providing a warning that they were going to express something negative, such as "[s]orry, this is going to be a little self-pitying monologue. I just need to vent a while and I don't expect anyone can really respond to it," or "I just need to get that out of my chest". Even though those users who made such posts stated that they didn't expect any response, a few users usually responded, and their responses were appreciated. There were, in fact, many posts expressing gratitude for listening. Examples include, "[s]orry for these long posts - but these are thoughts that I need to get out... I need to make them 'real' by putting them down where someone, anyone, can read them. Thanks for listening," "[t]hanks to anyone willing to listen to this long post. It

meant a lot to me to write it," "Nice of you to post, thank you. It's good to feel that someone has read my thoughts and understands." Those posts indicate that users appreciated the depression support group as a place where they could express what was in their mind and as **a place where they could feel that they were being listened**.

Occasionally, users themselves were uncertain about what their intentions were for sharing their stories, but they did so anyways to see what happens or how they would feel as a consequence. A user who had been struggling with his mood swings created a post to explain his difficulty in managing downswings that happened frequently and "randomly" by unexpected triggers, such as a bill that was higher than he expected or a broken item that needed fixing. What led him to make a post was "a vivid flashback" of his experience of losing his father suddenly due to complications of a heart surgery about 6 and a half years prior to writing the post. He provided the details of his flashback, such as his experience of calling 911, handling his mother and sister's grief, and organizing a funeral. He expressed his confusion of not being able to understand why he started going through the whole experience of his father's death in his mind:

> *I don't know what brought it on, but I wanted to see if getting it out helped, as I'm also disturbed, irritated, can't think of the word that I had a week long upswing and I'm back down again. I also feel like, almost 7 years have passed, why am I still reliving it in my head on occasion. [...] Anyway, just wanted to share to see if it helps at all. Thanks for reading.*

To his post, three users responded providing various forms of emotional and coaching support. One shared her experience of losing her parents, emphasized her opinion that it is okay to feel grief and sadness and addressed her realization that people experience grief differently; some people recover faster, while other people take it slow. Another user argued that it is common to feel sadness or grief over the loss of a loved one and recommended writing a journal about his feelings. The original poster did not reply to any of those responses and thus, it is impossible to determine to what extent sharing his story and receiving the responses were helpful in managing his confusion over the flashback and downswing. However, his post demonstrated that the Forum could be used as a place to experiment to see whether and how describing an experience

in a public place could have any positive consequence in managing a problem.

Although almost all users shared a common experience of living with depression and they expressed their appreciation for the commonness, there was also diversity among the users in terms of their demographics and life experiences. The quantitative findings from the present study demonstrated that users of various ages, both men and women, and both health care professionals and non health care professionals participated in the group. Sometimes, such diversity among the users helped the community to generate valuable insight that they might have not found elsewhere. For example, there was a long thread of discussion about a middle-aged user whose marriage was on the verge of breakdown due to his destructive relationship with his step-daughter. In addition to the burden caused by depression, he was having a tremendous difficulty in finding the right way to communicate with his step-daughter. He asked the users of depression online support group for some advice. A 24-year-old female user responded to his request:

> *I think I can provide a little insight as both a daughter who has been estranged from her father due to his issues and a child of divorce. My father has been an on-and-off drug addict my entire life. He then left my mother for a much younger woman. He did not reveal this to me until I was around 18. [...] The moral of the story is that it seems really good that you acknowledge and respect that your wife is putting her step-daughter first. Apologies, if heart-felt, can do a great deal, especially if they acknowledge specific events rather than general patterns. Don't expect her to react warmly to any of your attempts to reconcile with her; don't expect anything, just try. If you are experiencing serious rage issues, I would suggest you see a psychiatrist and enroll in anger management class.*

There was another case in which a middle-aged male user experiencing a 12 year marriage falling apart because, according to him, his wife "isn't able, or isn't willing to see" the efforts he had made. The major challenge for him was not to get overwhelmed by his negative feelings when he experienced the "total lack of engagement" of his wife while he was trying to initiate a conversation with her to fix their relationship. A 39-year-old woman responded to his post by stating that "when I read your story, I thought, that is me, but I am the woman. I must seem just

awful to my husband". She continued to explain the reasons she "put up a wall of silence" between her and her husband. She had recognized that "many instances of trust has been broken; drug use has been involved, possessiveness, jealousy, one person having expensive hobbies while the other shops at thrift stores while taking care of everything at home etc." After emphasizing the possibility that her situation and the support seeker's situation could be completely different, she provided several tips including communicating via a letter instead of face-to-face and making sure that both parties are ready and willing to work on the improvement of the relationship. In both situations, the support seekers were having difficulty in understanding the feelings of their family member, and the diverse membership of the depression online support group managed to generate some insight from those users whose experience and demographics happened to be similar to their family member that they wanted to understand better. In those situations, the Depression Centre served as **a place to gain advice from multiple perspectives on an issue that had been magnifying the impact of depression**.

Users often shared their experience with formal care provision systems such as hospitals and clinics. Exploring those posts that expressed users' negative experience of receiving formal treatments revealed a mismatch between the users' expectations and experiences with formal treatments and health professionals. Many users asked a question or expressed disappointment about a long wait period for an appointment with a new doctor, the long wait period between regular appointments while they experienced various side effects of medications, or the time required for new medication to become effective. Many users expected to make an appointment with a family doctor or psychiatrist as soon as they needed it. They experienced disappointment or confusion when they were faced with a long wait time. These negative emotions emerged in the Forum in the form of informational and coaching support requests. Additionally, many users appeared negatively surprised by the magnitude of side effects and withdrawal symptoms of medications. These emotions indicate that even though they were informed of the possible side effects and withdrawal symptoms, they were not informed or aware of their severity. Such communication among users indicates that the depression online support group offers users with **a place to share experience with formal care provision systems.**

However, the above finding does not necessarily mean that users encourage others to avoid receiving formal treatments. There were numerous posts that suggested seeing a doctor, and

users seemed to know when to see a doctor and when they should not make a decision on their own. It was common to see a recommendation to see a doctor when support seekers made a post regarding medications, side-effects, and setbacks. Although support providers shared their opinions, experience, or knowledge about those topics, they constantly reminded the support seekers of the fact that the support providers' experience might not necessarily apply to their situations and that they should consult their doctors before making any decision. In such situations, the depression online support group appeared to complement formal healthcare systems by supporting users' journey of finding the best way to manage depression.

One strength of support exchange on the Internet is its capacity to allow users to ask for support for an issue that is happening at the time of posting and to receive a quick response from others if they happen to read the post when it was made. Several users made posts to explain a problem that expressed immediate need for support. One member, for example, made a short and rather abrupt post stating that "[m]y father is in the hospital, 2000 miles away, probably dying, and I don't seem to care". It was not clear for readers what he was hoping to achieve by making this post. So several members asked a few clarifying questions to discover that he was confused about his own lack of care for his father's critical health condition. A thread of conversation between him and other users led him to purchase a flight ticket to see his father. Though he was still unsure what he would do once he got there, he settled with the idea that he would figure it out once he saw his father at the hospital. Similarly, another user made a post to seek immediate support from other users when she had encountered a panicking situation on the day she returned to work after taking a long break from work due to her depression. Having difficulty concentrating on her work, she initially made a post to ask if it was common for depressed people who return to work to experience lack of concentration. In the middle of the conversation with other members, she realized that she could not remember where she placed "really important papers" that she needed for her project and developed an anxiety-provoking thought that she might get fired. Other users kept sending her encouragement, sympathy, and advice. When she eventually reported to the members that she finally found the paper, she expressed her gratitude for their support, and they congratulated her on managing the difficult situation successfully. As those two examples demonstrate, the depression online support group appeared to function as **a place to express immediate support needs**.

Users often used the depression online support group as **a place to share useful discoveries or accomplishments in managing their depression.** It was commonly observed that users made a post about a book or an article on major depressive disorder that they found useful in managing their illness. Such posts typically received other recommendations and developed itself with a long thread of multiple posts about helpful resources with some evaluation by those who actually used these resources. One user shared a discovery that he encountered while learning about common cognitive distortions in one of his cognitive behavioral therapy sessions. He realized that he had been a victim of his own all-or-nothing thinking. He felt excited for his realization of the thinking pattern that he had not been aware of before and also for the possibility that he might be able to better control his mood. Moreover, he was pleasantly surprised to receive responses from other users who also have or had the habit of all-or-nothing thinking. He found it "comforting to know that I'm not the only one out there who does that, and has the 'all or nothing' mindset - and it gives me hope that if symptoms like that are identifiable then chances are there's something to this whole CBT, and that maybe, just maybe, I can find some of the help I need here. Thanks for relating that - I appreciate it." In addition to those useful discoveries, users also reported what they had accomplished in a day, such as completing home renovation and attending a social event that they would typically avoid due to depressive symptoms. Other users typically responded to those posts positively by stating "[c]ongratulations!" "[k]eep it up, you're doing great!" or "I was so happy to read this!!! You have made so much progress!" From those posts, the depression online support group appeared to serve as **a place to share daily discoveries and accomplishment and celebrate them together**.

Users often shared creative ways to manage their depressive feelings and to accomplish specific goals. For example, one user realized that many users in the community including herself tended to blame themselves too much for their "failures in life" or mistakes. She created a thread, suggesting that users share the most recent mistakes, how they handled them, how the mistakes brought them closer to a goal, or what they learned from these mistakes. She believed that she should celebrate mistakes as a learning opportunity and a way to become experienced and wiser. To her post, 11 users replied to support her idea and shared their "mistakes" and learning. One, for example, shared her experience of missing a medication. She learned not to

blame herself but to carry some of her medication in her purse wherever she went as a way to avoid repeating the same mistake. Another user shared her experience of feeling extreme anxiety for having her son and his wife going on vacation and for being given the task of babysitting her granddaughter. Looking back, she thought that her mistake was believing that she could not do the task, which she believed deprived her from the ability to manage the challenge and experiencing the joy of taking care of her granddaughter.

Also, there were a sequence of discussion about art therapy and its potential benefits in the management of depression. While discussion participants first focused on the idea of journal writing as a form of art therapy, one of the participants introduced the idea of drawing a comic book as a form of art therapy and explained how it helped him express himself through a character:

> *I've been drawing comics about all my life, and I recently started this one where this character from my comic about an alien super hero gets sick with depression, and it gets to the point where the metaphors I get for the way I feel when I'm depressed become literal for the character in this storyline. For instance, I kind of feel a bit like I'm turning into a monster when my depression is bad, something different than what I normally am, and this literally happens to the character. [...] I'm really artistic so making a comic like this helps me to get things out, other than just relating how I feel through words. Like I kind of express my feelings through that character, without having to reflect too much on my specific circumstances. It also even kind of gives me a glimpse of what it might be like for other people around me to see me depressed, which I wasn't really expecting. It's very dramatic right now because I'm still in the middle of the plotline, but I expect it might make me feel better or hopeful once I finally get to the happy ending in the comic.*

To the idea of drawing comic book as a way to express oneself, other users appeared very impressed and responded with affirmation, such as "Wow, hugely inspiring! What a great idea with the comics! I am definitely inspired and have started to think of artistic ways in which I could express myself Thanks for this."

Other creative coping methods that users suggested and practiced included organizing virtual Wii exercise team, "Sunday pledge" (interested users made a promise to keep for a day

together in the same thread), some tips on how to stay motivated (interested users thought about a reward for an accomplished task and shared it with others in the same thread), the practice of "2 good things, 1 bad thing" (interested users tried to think of two good things in their lives whenever one bad thing happens and shared them in the same thread).

Lastly, the depression online support group provided users with opportunities to help others**.** For many users, the depression online support group might be **the first or only place that they feel that they could contribute to the lives of others**. The Internet has provided them with an access to the depression online support group where users can both ask for support when they needed it and, at the same time, provide support when they could. To a user experiencing a setback who had usually given many useful advice to others, a member wrote a post of encouragement:

> *You say you haven't been able to work due to your depression, but I'll tell you something. The advice you offered me didn't sound in anyway coming from a depressed person, it came from a person reaching out to another using the knowledge and experience you have acquired. There would be a lot of people I'm sure who would welcome your advice and what came through to me in your reply was a passion. Passion to try and help another person. It's true that when we help another, we actually in turn help ourselves. In helping me I hope you see in yourself the qualities, empathy and experience you have that would benefit others in my situation.*

As the above post indicates, the depression online support group allowed the same user to be a support seeker and support provider at the same time. By helping others, users could learn how much they were appreciated and how valuable their experience and knowledge could be to others struggling with similar issues.

Chapter 5: Discussion

5.1 Discussion of the Findings

Guided by the idea of pragmatism, the present study aimed to explore how users of a depression online support group utilize the community. Considering the scarcity of knowledge about depression online support group, pragmatism proved to be the most effective way to investigate the research question of the present study. Instead of committing to a specific worldview, such as positivism or constructivism, pragmatism gave the researcher flexibility to explore the depression online support group both qualitatively and quantitatively. Based on the contents of the posts they exchanged in the community, the present study examined what kinds of support those users requested and provided and how such exchanges of support contributed to the everyday lives of the people living with depression. The quantitative and qualitative analyses of the users and their support exchange yielded the findings that contribute to the existing knowledge base.

By taking a data-driven inductive approach, this study made a theoretical contribution to the existing knowledge base. In Chapter 2, theories of social support and social network theory were discussed as the theories that were most relevant and useful for the present study. Those theories were useful in gaining a broad view of the ways social relationships can affect well-being. On the other hand, the problem of those theories was the lack of consideration about many intervening variables at the macro level that can affect the relationship between social support and its impacts on health. The present study drew our attention to various differences among users and how those differences resulted in the diversity of support types exchanged in the community. Users requested and provided different types of support from different kinds of relationship they formed through their online interactions.

Empirical contributions of the study include clarification of user characteristics and nature of user interaction. Through qualitative and quantitative exploration, the present study yielded the findings that allowed the researchers to compare the characteristics of the depression online support group examined in this study and those of other support groups examined in previous studies. Such comparison contributed to a better understanding of depression online support groups. For instance, this study found that the demographic characteristics of the users were found to be consistent with previous studies. The present study found that almost all of the

registered users identified themselves as depression patient and their average age was 38.4. There were no significant differences in age or clinical status between support seekers and support providers. Previous studies also found that the majority of the users of depression online support groups were either currently depressed or depressed in the past (Alexander et al., 2003; Houston et al., 2002; Powell et al., 2003; Salem et al., 1997; Takahashi et al., 2009) and were typically in their mid-to-late 20s and mid-40s (Powell et al., 2003; Takahashi et al., 2009, respectively). Mixed results existed in terms of gender and experience with formal treatment in the previous literature. The present study found nearly twice as many female users (N=44) as male (N=23), and more than half of the users (42 out of 67) were receiving formal treatment. I expected that the severity of the illness might have been making it difficult for them to visit the clinic or hospital to receive formal treatments. However, against this expectation, the majority of the users were receiving formal treatment at the time of registration. The present study also found that users of the depression online support group access the site from various countries, demonstrating the Internet's ability to deliver its content across geographic barriers and time differences.

The qualitative exploration of the posts generated multiple insight on how those similarities and differences between users were reflected in the contents of their conversation. The commonness among the users appeared to construct the foundation of the community. For instance, there were numerous cases in which users expressed their appreciation for the fact that others in the community could truly understand their feelings, could relate to their experience, and could be genuinely sympathetic to their situation due to the common experience of living with the illness. The frequency of the request and provision of understanding, a type of emotional support, demonstrated that users' need to find someone who could relate to their feelings or experience. The fact that the majority of users were receiving formal treatment appeared to be strongly related to their informative discussion over medications and their effectiveness, side effects, and withdrawal symptoms. On the other hand, differences among users appeared to be contributing to the generation of useful advice and creative ideas. When male users were struggling with their relationships with their wives or daughters, for example, several female users with similar experience provided their opinions as a possible interpretation of the situations from the wives or daughters' perspectives. As the results section demonstrated,

the diversity among users appeared to be contributing to their creative discussion over unique, non-medical methods to manage depression. Future studies should further explore the relationships between user characteristics and support exchange to generate more definitive principles.

In terms of the nature of support exchange, the present study generated quantitative findings that were similar to those of previous studies and qualitative results that added deeper insight into the roles that depression online supports could play in the lives of users living with depression. Previous studies found the predominance of emotional and informational support and absence of instrumental support in depression online support groups (Alexander, 2002; Alexander et al., 2003; Bambina, 2007; Braithwaite, Waldron & Finn, 1999; Mier et al., 2007; Mo & Coulson, 2008; Muncer et al., 2000b; Salem et al., 1997; Witt, 2000). This is consistent with the findings of the present study that substantial disability and the burden of major depressive disorder created various support needs among patients. As Tables 10.1-10.19 illustrate, a wide range of support types were exchanged in the depression online support group as a result. In particular, instances of emotional support and its subcategories (encouragement and affirmation) were found in large quantities, covering various areas of users' lives. These findings suggest that users recognize the value of receiving encouragement and affirmation from people who are going through similar experiences and having similar feelings. An exploration of users' posts also demonstrated that depression was not the only cause of struggle in the lives of community members, but interpersonal relationships, stress related to work, financial problems and other family member's health problems constantly generate additional burdens. These burdens triggered more intense depressive symptoms, and more intensive depressive symptoms made it extremely difficult for users to cope with other life burdens. It is this vicious circle that made many users come back to the Forum again and again to seek understanding, encouragement, and affirmation from others in similar situations.

Another contribution of the present study was the addition of the new support category of "coaching support," separately from emotional support. The purpose of adding this new category was to distinguish between users' needs/ desire to be listened to, understood, encouraged, or reaffirmed and their needs/desire to learn how to resolve or manage the situations that they were going through. The former needs were categorized as requests for emotional support and the

latter were classified as coaching support. As a result, the present study contributed to a clearer understanding of users' needs. This study clearly demonstrated that users of the depression online support group not only wish to have listening ears but also to receive practical advice on how to cope with their situations.

Also, the distinction between request and provision of support in classifying support types was another contribution of the study. Previous studies did not make the distinction, and thus the ratio of the two remained unclear. By making this distinction, the present study generated a more dynamic and detailed view of the interactions among users of the online support group. As Table 9 indicates, users provided support as much as they requested it. The findings portrayed the online support group as a place of dynamic interactions where users helped each other. Those people living with severe depressive symptoms may have a lot of experience of receiving help from others, such as their family members or health care professionals but may have little experience of providing help. For them, it may be difficult to help others in their daily lives since their physical symptoms often prevent them from actively involved in lives of others. Even for those living with less severe symptoms, stigma might prevent them from finding others that might appreciate the experience or knowledge gained from living with the illness. From this perspective, online support groups give depression patients an opportunity to help other patients, and by doing so, the communities are enabling them to become both receivers and providers of support. Users can become support providers for other patients without running the risk of experiencing negative impacts of stigma. This enabling factor appeared to be one of the most valuable strengths of this resource for depression patients.

The qualitative exploration of users' posts provided a deeper insight into the ways depression online support groups functioned in the lives of users. The posts exchanged among the users portray the depression online support group as a place with accepting and supportive atmosphere. It appeared to serve its users as a place to meet sympathetic others with similar experience; place to realize that they were not alone; to discuss what they could not discuss elsewhere; to "just vent" with or without the expectation to have someone to listen. Those findings are consistent with previous literature which found that users viewed online communities as a place they turn to when they feel alone (Alexander et al., 2003) and a place they can look for information or support without worrying about being judged negatively

(Houston et al., 2002; Powell et al., 2003; Webb, Burns, & Collin, 2008). In addition to those functions, the present study found that online support group appeared to serve as a place to gain advice from multiple perspectives on an issue that had been magnifying the impact of depression; to share experience with formal care provision systems; to express immediate support needs; to share useful discoveries or accomplishments, creative ways to manage depression; and to experience the value of helping others. Those findings indicate the strong potential of depression online support groups to contribute to users' capacity to adapt and self-manage depression.

As discussed in the Introduction, the number of people who suffer from major depression is increasing worldwide, and the increase is likely to continue. In this context, it is important to re-evaluate existing options available for depression patients in managing their illness. The present study, therefore, aimed to find clues on whether and how online support groups could fit into the overall existing framework of care provision for depression patients by closely examining users' interactions on the online support group. People come to depression online support groups despite the fact that there are various venues that can provide support, such as hospitals, clinics, and libraries. Based on my analysis, it is suggested that people do so either because there are unique and valuable types of support that are only available in depression online support group or because they are not satisfied with the quality of the services available elsewhere or the ways they are provided. As discussed in the literature review section, there is one study (Houston et al., 2002) that examined the reasons to use depression online support group. The study found that emotional support and information about medication were the two most popular reasons to participate in the communities. This study, however, did not analyzed the reasons to use depression online support groups in relation to the overall existing framework of care provision available for people living with depression. With this regard, the qualitative findings from this study revealed that fragmentation of care is prominent in the current health care provision systems for depression patients, and it appears to be the reason for some users to use the depression online support group.

The present study suggests that online support groups provide emotional support in ways that bridge the fragmentations of the system. For instance, the findings of this study indicate that users frequently sought emotional support during long waiting periods for first appointments as

well as between their regular appointments. Other users experienced severe side effects of medications and wished to make an immediate appointment to see a physician. However, the earliest possible appointment available was a few weeks later. Consequently, they came to the Forum to seek support from peers. There were also some instances when users attempts to receive formal treatment resulted in more stress and confusion due to unproductive appointments with their physicians or changes of psychiatrists without notice in the middle of treatment cycles. These examples indicate that depression patients suffer not only from depressive symptoms, but also from the lack of comprehensiveness or coordination of care. The Depression Centre Forum functions as a source of additional help and support not available elsewhere in a sense that users can seek and receive support anytime from anywhere. Such function is similar to crisis or suicide hotlines available via the phone in a sense that the service is available regardless of time or day. But, while those hotlines are commonly used for suicidal prevention, the depression online support group seems to be more open to various issues, including less serious ones (for example, posts about lost papers and anxious feelings). More research needs to be done to solidify the findings from this study, to explore other unknown areas, and to find ways to maximize the strengths of depression online support groups.

5.2 Limitations and Directions for Future Research: The present study explored the nature of the interactions among users of a depression online support group for the purpose of understanding what kinds of support users request and receive from other users. One limitation of the study is that it has a limited capacity to capture users' needs for support. I cannot deny the possibility that users may have wanted to request a certain type of support but decided not to express that need or request in the group; for instance, opinions that appear sensitive or socially undesirable, such as negative opinions about their lives, worldviews, or other users' attitudes or decisions.

This study examined support exchanges expressed by public posts in the Forum of the Depression Centre. The second limitation, therefore, relates to support exchanges that might have occurred via other functions available at the Depression Centre. The Centre, for example, provides registered users with the capability to contact a specific individual through private massages. There is the possibility that some users used private messages to communicate with specific users to address needs other than those that they shared publicly. Also, lurkers (those

users who only browse others posts with making no posts) might have met their support needs without actively engaging in the community. As Nonnecke and Preece (2003) stated, it is not uncommon to find an online support group where more than half of the members only browsed others' posts without making any on their own. Some lurkers might have also used the keyword search function to look for the information they needed from older posts. The present study, however, only captured those support needs expressed in public posts made to the support group. What kinds of support that lurkers received by observing others' interactions remains unknown. Online surveys that include questions regarding private messaging and browsing activities could generate the data necessary to analyze support exchange that occur outside the Forum.

This study has also limited ability to assess users' level of satisfaction or dissatisfaction with responses that they received from others in the support group. Content analysis can only be interpreted from the messages left publicly in the Forum. For instance, the lack of thank-you notes at the end of a topic or abrupt end of conversation could be used as proxies for dissatisfaction with the responses received. Even if users expressed gratitude for the responses they received, there remains the possibility that they did so out of respect or politeness and could have actually been dissatisfied with the responses. Similarly, the present study has limited capacity to assess users' perceived usefulness of the support given from others. Other research methods, such as interviews and surveys, are needed to measure the extent to which users feel that their support needs are satisfied through online depression support groups.

The above limitation is related to the assumption of the present study that what was written on the Forum was considered to be true. As the above example indicates, the content of the posts is open to multiple interpretations. However, when a user wrote "thank you," the present study interpreted in a way that is most commonly understood -- an expression of gratitude, unless the contextual information of the post suggested otherwise. Similarly, when a user identified himself or herself as a female Canadian in her late 40s either through her post or at the registration, it was assumed to be true.

Although this study aimed to explore the roles of depression online support groups in the management of depression described through the posts made in the Forum, how the support exchange through these posts actually changed users' behaviours or attitudes is unknown. A legitimate concern over participation in depression online support group has been the potential

for users to receive "negative" information or response from others, such as personal attack or harmful recommendation (Golant, et al., 2003; Kayany, 1998; Kim & Raja, 1991). Although the present study did not find any posts that contained the "negative" content, users could have read certain posts and acted in ways that might have caused negative impact on their well-being. There were several posts, for example, that discussed users' negative experience with their healthcare professionals. After reading those posts, some users might have decided to postpone or cancel their appointments with a doctor. Similarly, after reading some posts that addressed difficulties in going back to work after a sick leave, some users might have felt discouraged or fearful and might have decided to stay home instead of going back to work. In fact, one of the recurring concerns about depression online support group has been the possibility that participation in those groups might cause delay in receiving formal treatments (Powell et al., 2003). The actual impact of user participation over their use of healthcare system is beyond the scope of this study. Future studies should explore the impacts of users' participation in online support groups on behavours such as seeking professional advice as well as outcomes such as depression levels and social isolation by conducting surveys or interviews.

In particular, it is important to understand which aspect of their daily lives had been sacrificed for the time they spend for online support group participation. For example, if online participation had replaced the time they would have spent with their families, caregivers, or close friends, the change could be detrimental to their well-being. As the findings of the study and previous research demonstrated (Alexander et al., 2003; Muncer et al., 2000), online support groups have limited ability to convey instrumental support, such as physical or financial assistance. Therefore, replacement of face-to-face social support with online support could generate negative impacts on users' well-being particularly when instrumental support is a crucial element for their health. On the other hand, when there had been little face-to-face social support before they started participating in online support groups, their participation may result in the increase of their perceived availability of social support and decrease in their sense of social isolation.

Although the present study did not identify any posts that indicated that users experienced negative health outcomes as a result of their participation in the Forum, it does not mean that there is no concern over potential harms of participating in depression online support groups.

Some users, for example, might have felt more lonely and depressed after reading others' posts reporting positive experience, such as improvement of their depressive symptoms. But the observers of those posts might have not necessarily expressed their feeling of loneliness in the Forum. Also, some users might have made decisions that led to negative health outcomes after reading other users' posts, but the present study is not designed or intended to measure those outcomes of users' online participation. In order to examine the impact of depression online support groups, future research could involve a longitudinal study with questionnaires to assess perceived loneliness, social support, depression and use of formal treatment provision systems and compare the results collected when users first enter the support group and after they participated for a certain period of time.

The present study is exploratory in nature, and thus, more studies need to be conducted to examine to what extent the findings from the present study can be generalized. In particular, the findings from this study have limited generalizability to other depression online support groups without moderators. In the Depression Centre Forum, trained health educators monitored user interactions. A main role of the health educator was to remove inappropriate posts, such as those that contain personal attacks or personal information. Because of the presence of health educators, some users might not have expressed their opinions honestly. Their presence might have also encouraged support seeking behaviours because users might have felt they could seek support without worrying about the possibility that no one responds to their posts. At the same time, the presence of the health educators might have discouraged users' support providing behaviours because users might have felt that they did not have to respond to support seekers' posts because health educators would. In sum, the presence of health educators was likely to affect user interactions in multiple ways. Consequently, the findings from this study may not apply to other depression online support groups without moderators or those support groups with moderators with different roles and responsibilities.

The present study has a limited reliability and validity, because only two individual conducted data analysis using a single research method. As Pope and Mays (2005) argue, qualitative analysis is an interpretive and subjective exercise, and the researcher is closely involved in the process. The results from the analysis are, therefore, one way to interpret the raw data among many other possible interpretations. Ideally, multiple coders should conduct the data

analysis to maintain a reasonable degree of reliability. As suggested by Lacey and Luff (2007), there are three ways to manage the problem of reliability. First, the approach to, and procedures for, data analysis were described clearly, as were the reasons why they were appropriate within the context of the research. Second, the process of generating themes, concepts, or theories from the data audit trail was clearly documented. Lastly, reference to external evidence was provided whenever possible, including previous qualitative and quantitative studies to verify the conclusions from the analysis as appropriate (p. 26). The triangulation of results through the use of another research method would have increased the trustworthiness of the results.

It would be also beneficial to extend this study in conducting various longitudinal analyses. The sample from this study contained all posts made during a one year period in 2010 because it was the year with no system updates that affected the nature of services provided or types of user information collected by the Depression Centre significantly. The most recent system upgrade of the Centre involved the addition of a function to display treatment history and recent posts that users made on their profile pages. The addition of these new functions could affect the nature of interactions in the Forum. Additional content analysis of the posts made on a different time period could be conducted to see if the findings from the present study persist.

5.3 Implications of the Study: Currently, people are using depression online groups without clear understandings of the benefits and limitations of these groups. Due to the scarcity of literature, neither health care professionals nor administrators of these support groups know the advantages, disadvantages, or health outcomes of participating in the support groups. The present study examined user characteristics and the nature of the interactions in a depression online support group. By examining user interactions, the possible roles of depression online support groups in the lives of users living with depression became clearer. There are various reasons for choosing to explore these particular aspects of depression online support groups to explore in the present study. I chose these aspects among other options because a close examination of support exchange can generate results that have practical applications.

Although there is only limited empirical evidence of the benefits of online support groups (Griffith et al. 2009), the abundance of patient-oriented online support groups and their persistent popularity suggest that users gain certain benefits from their participation (Jadad et al., 2006). The findings from this study clarify those "certain benefits". The qualitative findings of the

study. for example, provide researchers some insight on why people come to online support groups for support. The detailed description of the types of support requested by users (Table 10.1-10.19) help them comprehend which areas of their support needs remain dissatisfied and why they come to depression online support groups. Further exploration of support seeking behaviours in depression online support groups enables us to compare what users seek online support and what resources are available for them in offline contexts. Future study should conduct a more comprehensive analysis to identify gaps between the online and offline support resources, which would enable us to improve the current methods of delivery of information and care for people living with depression.

Information organizations, such as libraries and local community centers, are important sources of information for people living with depression. However, little research has been done to investigate the information needs of depression patients (Barney, Griffith, & Banfield, 2011). This study offers valuable empirical findings that contribute to filling this gap. Although, the total number of instances was not as high as that of emotional support or coaching support, informational support was also frequently exchanged among users in the Forum. Users seemed particularly interested in learning more about medications and their side effects. This is an interesting finding, considering that there is a wide range of information about medication available on the Internet. It may be the case that users have enough computer literacy to navigate the Internet and online support groups but have limited online searching skills or health information literacy. By exploring more of their information needs, information organizations can take those needs into consideration when deciding what information resources to add to their collections and services.

This study is also important for health care practitioners and policy makers who wish to understand the phenomena of peer-led online support group for depression patients. Awareness of the nature of the interactions among the users of depression online support groups could be beneficial for healthcare professionals who wish to understand supportive care needs and design appropriate services to meet these needs. The findings from this study could also help health care professional determine whether they should encourage their patients to use online support groups and what kinds of benefits users can generally expect from their participation.

Developers and administrators of depression online support groups will also benefit from

extending this study. By doing so, developers and administrators can gain more insight on how online support groups work and find clues to improve their communities. For instance, the findings from this study suggest that diversity among users could contribute to better support exchange, since users of different backgrounds could give insightful advice to support seekers by providing multiple perspectives to an issue that they are trying to cope with. If this hypothesis is validated by future studies, developers and administrators of depression online support groups could promote their sites in a way that attract a wide range of users.

Most importantly, the findings of this study was aimed to contribute to the lives of people living with depression. Depression burdens one's life with various psychological distresses as well as significant physical discomfort and financial burdens. It not only affects patients' lives but also affects their families, caregivers, and friends. For a variety of reasons, patients and their caregivers may find it difficult to find peers who having similar experiences and who understand the challenges imposed by depression. Consequently, both caregivers and patients may feel socially isolated. Moreover, due to the lack of other supporters, relationship between a patient and his or her caregivers can become over-burdened with emotional and financial needs caused by depression. Under such circumstance, it is difficult for caregivers to continuously provide his or her patient with sufficient levels of support. At the same time, the patient may also find it difficult to request further support from his or her already exhausted caregiver. The sense of guilt, helplessness, and hopelessness can worsen their depressive symptoms. As this study demonstrated, depression online support groups are capable of providing patients with a wide range of support. Users can access support whenever they need without the assistance of others. Users are also given opportunities to help others experiencing similar conditions and, in doing so, feel appreciated. This study contributes to deepening understandings among people living with depression about how they might benefit from participating in depression online support groups. Future study should further explore the impacts of participating in depression online support group.

Chapter 6: Conclusion

The broad purpose of this study was to contribute to a better understanding of online support groups in the context of major depressive disorder. The number of people suffering from major depressive disorder is increasing worldwide. This number is projected to increase with the publication of the fifth edition of the DSM in 2013. A proposed change to the definition of major depressive disorder in DSM-V will eliminate the exclusion criteria of bereavement. The acceptance of the proposal will lower the thresholds for the diagnosis of major depressive disorder.

Behind the expanding categories of mental illnesses is the inclination toward medicalization of society, supported by the idea of health as "a state of complete physical, mental and social well-being" (WHO, 2006, p. 1). In order to treat depression effectively, efforts have been made to re-assess the benefits and risks of psychoactive drugs as well as those of alternative interventions, such as psychotherapy and group therapy.

A new definition of health as "the ability to adapt and self manage" was also proposed to encourage realistic and measurable goal-setting in three domains: physical health, psychological health, and social health. Considering its ability to deliver support beyond psychological, physical and time barriers, online support groups seem to have strong potential to contribute to the new definition of health. However, the ability of depression online support groups to be a source of support for people in learning the skills to adapt and self manage has not yet been previously explored in the literature. This study, therefore, aimed to explore the potential of depression online support groups by conducting a case study.

More specific goals of this study were to examine support exchange among users of a depression online support group and to explore various roles that the support group could play in the management of depression. The review of literature revealed that only a limited number of studies have explored the phenomenon of depression online support groups. Thus, there are many aspects of depression online support groups that remain unknown. Without studying more about depression online support groups, we cannot fully evaluate the benefits of these resources or find ways to maximize their strengths and minimize their risks, if any risks are present. By conducting a case study, the present study aimed to make an empirical contribution to the ongoing efforts to understand the phenomenon.

To achieve those objectives, this study took a mixed method approach. First, a group of posts were collected from the discussion forum on a depression online support group called Depression Centre. Both the initial posts that sought support and the following posts that provided support were recorded for further analyses. The second step involved qualitative and quantitative content analyses. The goal of this stage was to analyze the types of support exchanged through the posts.

The findings from this study indicate that unmet emotional, coaching, and informational support needs clearly exist among many users whether or not they are receiving formal treatment. The quantitative analyses of user characteristics, for example, demonstrated that both those who were and were not receiving formal treatment sought emotional support at the Forum. The findings suggest that unmet needs exist because, since depression and other life struggles are so closely intertwined, formal treatment alone cannot completely meet the emotional needs of users. The present study informs health care professionals and information professionals of the need for care coordination across different support providers.

Overall, this study indicates that depression online support groups have a strong potential to provide people living with major depressive disorder with valuable support. The study demonstrated that users could seek information, understanding, encouragement, affirmation, and advice to manage physical symptoms, psychological distress and socio-economic problems, as well as to find companionship in the Depression Centre Forum. They can seek support any time they want. They can also spend as much time and as many words as they want. For many users, it was important to know if others living with the same illness have gone through similar experience or had similar feelings. Yet, gaining understanding from others is difficult through other sources of information and support. Many users, in fact, expressed their hesitation to disclose their illness to others, including their family members and close friends. In depression online support groups, users can express their emotional needs freely and seek encouragement or sympathy from others without worrying about being judged negatively. It was notable that users not only sought someone who listen to them, but also sought advice and suggestions regarding how to cope with the situations that they were going through. It shows users interest and will to learn how to manage their illness better.

Based on the findings of this study, one can hypothesize that users of depression online

support groups can gain more skills to adopt and manage their illness through their involvement in the group. In testing this hypothesis, it is important to pay attention to the degree of satisfaction among users and the degree of success in their support exchange. The present study discovered that while some threads ended with an expression of gratitude, other threads ended abruptly without any comment from the person who made the initial posts. This observation indicates that not all users of depression online support groups receive the types of support they wanted in the way that satisfied their needs. Future studies should explore these areas to further examine the potential of online support groups to relieve suffering among people living with depression.

Table 1: A Summary of Three Systematic Reviews on Depression Online Support Groups

Author(S) (Year of Publication)	Objectives	Used Databases	Search Strategy	Results	Conclusion
Eysenbach et al. (2004)	To evaluate the evidence on the effects on health & social outcomes of computer based peer to peer support groups (including the effect on depressive symptoms)	Medline, Embase, CINAHL, PsycINFO, Evidence Based Medicine Reviews, Electronics & Communication Abstracts, Computer & Information Abstracts, ERIC, LISA, ProQuest Digital Dissertations, Web of Science, for period prior to Sep-Dec 2003	Combined 3 concepts, [self support AND computer communication network] OR e-community venue, with various synonyms. Included if the intervention studied was an online community in health and the outcome measured were knowledge, health, psychological or social outcomes, or use of health services	Identified 45 publications (including 12 papers on the effect on depressive symptoms), describing 38 distinct studies, out of 12, 288 abstracts.	No robust evidence exists of peer led online support groups. Research is required to evaluate under which condition and for whom online support groups are effective and how to maximize effectiveness in delivering social support
Griffiths et al. (2009a)	To review the evidence concerning the effects of online support groups on depressive symptoms	Pubmed, PsycINFO, Cochrane, for the period prior to Aug 2007	Used the one developed by Eysenbach et al. (2004). Included if the study employed an online peer-to-peer support group, incorporated a depression outcome, & reported quantitative data	Identified 31 publications out of12,692 abstracts	There is a paucity of high-quality evidence concerning the efficacy or effectiveness of online support groups for depression.
Griffiths et al. (2009b)	To summarize evidence regarding nature & impact of	Pubmed, PsycINFO, Cochrane, for the period	Used the one developed by Eysenbach et al. (2004). Included	Identified 13 publications out of 12,692 abstracts that	There is a need for high-quality, systematic

	depression online support groups	prior to Aug 2007	if the study reported qualitative or quantitative data on peer-to-peer depression support group. Excluded if the group was not specific to depression.	examined the nature of posts, site usage, & user characteristics	studies of depression online support groups, their impact, & the characteristics of their users.

Table 2: A Summary of Previous Research on Depression Online Support Groups

Author(s) (Year of Publication)	Objectives	Methods	Data Collection Site	Sampling/Recruitment Strategy
Macius et al. (2005)	• To describe user characteristics • To describe nature of posts • To compare different types of health related message board	Content analysis of 166 threads made by 791 users	11 public health-related message boards (including 1 depression message board)	Systematic sampling of 2 threads per message board per illness from the week of June 23-30, 2002.
Fekete (2002)	• To describe nature of posts • To compare different types of support groups	Content analysis of 222 letters by 129 users)	3 health-related newsgroup (including 1 depression newsgroup)	All posts over 3 months period between Nov 1, 1995 and Jan 31, 1996
Muncer et al. (2000a)	• To describe nature of posts • To test the "buffer"	Post analysis (491 posts by 118 users)	A depression newsgroup that was "particularly active"	Random sampling of all posts made over 1 month period

	hypothesis			
Davidson (2000)	• To compare different types of support groups • To characterize patterns of use	Post analysis (frequency of posts)	20 highest volume newsgroups & an AOL depression bulletin boards	All posts made over 2 week period
Witt (1999) [dissertation]	• To describe nature of posts • To compare different types of support groups	Post analysis (over 1000 posts)	Depression bulletin board & smoking cessation bulletin board	Over 1000 posts made over a "2 to 3 month period"
Salem (1997)	• To describe user characteristics & nature of posts • To compare with face-to-face support group	Content analysis (1863 posts by 533 users)	A depression newsgroup	All posts from 2 randomly chosen weeks, 1 month apart in 1995
Alexander (2002) [dissertation]	• To analyze how leadership influences nature of interaction	Post analysis (500-3000 posts from each group)	3 online support groups for each of 8 illness types (including depression)	All posts made over 1 month period at 3, 6, 9, & 12 month after the launch of each group
Lamerichs (2003)	• To evaluate how computer mediated communication (CMC) has been conceptualized • To illustrate limitations of	"Discursive psychology & conversational analysis (Sample size, not reported)	1 public depression discussion forum	Selected extracts from the forum chosen to illustrate limitations of existing cognitive models of online interactions

	existing cognitive models of CMC			
Powell (2003)	• To describe user characteristics • To describe perceived benefits & disadvantages	Surveys (N=2037)	6 depression bulletin boards	Participants recruited for over 4 week period through a pop-up window that appeared in the main page of each bulletin boards
Houston (2002)	• To describe user characteristics • To assess impact of use on depressive symptoms & social support • To characterize their use • To describe perceived benefits & disadvantages	Surveys (N=103)	5 moderated depression bulletin boards & listservs	Participants recruited for over 2 months periods through advertisements posted on the 5 bulletin boards & listservs
Alexander et al. (2003)	• To describe user characteristics • To characterize their use • To describe user interaction	Surveys (N=19) & post analysis	Newsgroups	Surveys: Participants recruited through posts on the newsgroups Post analysis: All posts made to the newsgroups for 3 consecutive weeks
Andersson (2005)	• To assess impact of use on symptoms of depression &	Experimental control arm of a randomized	A moderated depression bulletin board	Participants recruited through advertisements in print media. Eligible

	anxiety	controlled trial (N=117)		if the symptoms assessed by MADRS-S indicate clinically significant symptoms of depression
Muncer et al. (2000b)	• To analyze network structure • To compare different types of support groups	Social network analysis (191 posts made by 118 users in depression group, 232 posts by 132 users in diabetes group)	A depression newsgroup & a diabetes newsgroup	All posts made over 1 month period.
Takahashi et al. (2009)	• To explore benefits & harms of use • To describe user characteristics	Surveys (N=105) & Social network analysis	A social network service	Surveys: Participants recruited through private messages sent via the SNS Social network analysis: SNS log files (inclu access logs & user data in "profiles", "blogs", "communities" & "friends") were extracted through the SNS database

Table 3: A Summary of Knowledge Gaps of Depression Online Support Groups

Aspect of Depression Online Support Groups (DOSGs)	Current Knowledge	Knowledge Gap
Format	Most studies have examined bulletin board discussion forums (newsgroups).	Little is known about the DOSGs of other formats, such as live chat rooms and social networking sites.
User characteristics	A small number of studies examined clinical status, age, gender, education level, employment status, and marital status, generating conflicting results, except that users are commonly found to be in their mid-to-late 20s and mid-40s, and that they were currently depressed or depressed in the past.	Most user characteristics remain inconclusive. No study has examined ethnicity, residence (rural vs. urban), and source of referral.
	All identified studies reported user characteristics of their sample only.	No study reported data on the characteristics of all registered users in the selected DOSGs.
Relationships between user characteristics & nature of interaction	N/A	No study has examined what kind of user (e.g. gender, age, illness severity) is likely to request a specific type of support and what conditions enable the community to generate the requested type of support.
Pattern of use	One study found that 53.4% of users spent at least 5 hours over 2 week period.	How much time users spend in DOSGs, how their usage changes since the early stage of membership, and when in a day/week/month/year they are likely to use DOSGs remain inconclusive.
Retention of users	N/A	No study has examined what factors promote retention of users.
Perceived advantages &	Several qualitative studies reported decreased sense of loneliness, and	Users' perceived advantages of DOSGs are reported in qualitative

disadvantages	increased coping skills and knowledge about depression after their participation in DOSGs. One study of reported "downward depressive spiral" as a potential disadvantage.	data but not examined by any quantitative measurement. Disadvantages of DOSGs are understudied, and thus, remain unknown.
User satisfaction	In a study, 19 volunteer respondents of online surveys indicated that they were very satisfied with their online experience.	No other study has reported to what degree users are satisfied or dissatisfied with DOSGs or whether or not they found what they were initially looking for..
Outcomes	A small number of quantitative studies examined how participation in DOSGs affect users' depressive symptoms, coping skills, and use of healthcare system.	Impacts on depressive symptoms, coping skills, and use of healthcare remain inconclusive. No study has examined impact on users' attitudes toward the illness, sense of loneliness, isolation and available social support, quality of life, decision-making, and health behaviours, such as their degree of engagement in individual health care. What conditions or factors influence outcomes is also unknown.
Relationship between nature of interaction and outcomes	N/A	Previous studies did not examine the nature of interaction as a potential variable in measuring the impact of DOSGs participation.
Impact of group structure on user interaction	N/A	Little is known about how group structure, such as presence or absence of mediators, group goals and mission statement, affects user interaction. Contributions of caregivers also remain unknown.
Overall function of DOSGs	N/A	DOSGs can be used for the purpose of prevention, management, wait-list condition, recovery and relapse prevention. For which purpose DOSGs are the most useful remains unknown.

Table 4: Dates of Server Update & Types of Data Collected from Users at the Registration

Server Name	**SQL2000**			**SQL2005**	
Effective from	Feb 6, 2003	May 26, 2005	Sep 3, 2005	Oct 21,2008	Apr 7, 2011
Effective until	May 26, 2005	Sep 2, 2005	Aug 24, 2011	Apr 7, 2011	Nov 29, 2011
User Sign-up Date	√	√	√	√	√
Gender	n/a	√	√	√	√
Age	n/a	√ (by range)	√ (by range)	√ (Date of Birth)	√ (Date of Birth)
Occupation	n/a	n/a	n/a	n/a	√
Country	n/a	√	√	√	√
Education	n/a	n/a	n/a	n/a	√
Depression Rating *	n/a	√	√	√	√ (multiple questions)
Depression Level **	n/a	n/a	√	√	√ (multiple questions)
Depression Interference ***	n/a	n/a	√	√	√ (multiple questions)
Tried CBT	n/a	√	√	√	√
Currently Treated	n/a	√	√	√	√
How Currently Treated	n/a	n/a	n/a	n/a	√

* Depression Rating:
In the past 2 weeks, I'd rate my symptoms of depression as (0-10)

** Depression Level:
In the past 2 weeks, my depression has caused the following level of distress in my normal daily life (0-10)

*** Depression Interference:
In the past 2 weeks, my depression has caused the following amount of interference in my daily normal life (0-10)

Table 5: Intercoder Reliability Test for All Variables (Pretest, N=20)

Variables		Percentage Agreement	Cohen's Kappa	Krippendorf's Alpha
Informational Support		90	0.793814	0.796875
Emotional Support	Understanding	90	0.733333	0.74
	Encouragement	90	0.764706	0.767857
	Affirmation	100	1	1
Coaching Support	Psycological	85	0.347826	0.331429
	Physical	100	undefined*	undefined*
	Socio-economical	85	0.583333	0.580645
Companionship	Chat	100	undefined*	undefined*
	Group Cohesion	100	undefined*	undefined*
Spiritual Support		100	undefined*	undefined*
Instrumental Support		100	undefined*	undefined*
Technical Support		100	undefined*	undefined*

Table 6: : Intercoder Reliability Test for All Variables (Full Sample, N=100)

Variables		Percentage Agreement	Cohen's Kappa	Krippendorf's Alpha
Informational Support		97.5	0.94052	0.940848
Emotional Support	Understanding	97.5	0.894737	0.895257
	Encouragement	96.25	0.86637	0.867168
	Affirmation	98.75	0.964851	0.965063
Coaching Support	Psycological	98.75	0.96	0.96024
	Physical	100	1	1
	Socio-economical	100	1	1
Companionship	Chat	100	1	1
	Group Cohesion	100	1	1
Spiritual Support		100	undefined*	undefined*
Instrumental Support		100	undefined*	undefined*
Technical Support		100	1	1

Table 7: Descriptive Statistics of the Total Number of Topics and Posts in Each Discussion Theme

Theme	**# of Topics**	**# of Post**
Getting Back to Work	10	74
Understanding Major Depressive Disorder	10	73
Medications	17	130
Goal Setting & Activity Schedule	13	154
Challenging Your Negative Thoughts	12	66
Core Beliefs & Assumptions	2	25
Relationships	18	176
Lifestyle	15	103
Coping with Setbacks	20	179
Total	**117**	**980**

Table 8: Demographic Characteristics and Clinical Status of the Users who Sought or Provided Support at the Depression Centre Forum in 2010

		Characteristics of All Users	Characteristics of Support Seeker	Characteristics of Support Provider
Total Number of Users		67	52	48
Gender	Number of Male	23	18	16
	Number of Female	44	33	31
Age	Average (Mean)	38.4	38.7	38.9
	Median	35.5	35	37.5
	Mode	51	51	51
Clinical Status	Number of Users Who Identified Themselves as Depression Patient	66	51	47
	Depression Rate (Mean)	6.8	6.9	6.3

	Depression Interference (Mean)	6.3	6.5	6.1
	Depression Level(Mean)	6.2	6.4	6.0
	Currently Receiving Formal Treatment	42	33	28
	Experience of CBT	31	22	20
Number of Posts Users Made	Average (Mean)	11.2	5	8.3
	Median	4	2	2.5
	Mode	1	1	1
Countries of Residence		Canada (31), U.S. (25), U.K. (5), Australia (5), India (2), Hong Kong (1), Malaysia (1), South Africa (1), United Arab Emirates (1), Unknown (7)	U.S. (21), Canada (16), U.K (3), Australia (2), Hong Kong (1), India (1), Malaysia (1), South Africa (1), Unknown (5)	Canada (18), U.S. (17), U.K. (4), Australia (2), India (2), Hong Kong (1), United Arab Emi (1), Unknown (3)

Table 9: Descriptive Statistics for Number of Instances of Support Request and Provision

Support Category/Sub Category		Instances of Explicit Request of Support	Instances of Implicit Request of Support	Instances of Support Provided (Provided by Health Educator)	Total Instances of Support
Informational Support		29	3	91 (17)	123
Emotional	Understanding	24	4	109 (7)	137

Support	Encouragement	24	104	140 (47)	268
	Affirmation	20	69	258 (124)	347
Coaching Support	Psychological	25	3	157 (72)	185
	Physical	2	2	10 (5)	14
	Socio-Economical	19	2	55 (25)	76
Companionship	Chat	5	2	70 (5)	77
	Group Cohesion	1	0	4 (2)	5
Spiritual Support		0	0	3 (0)	3
Instrumental Support		0	1	2 (0)	3
Technical Support		2	3	4 (4)	9
Total		**151**	**193**	**903**	**1247**

Table 10.1 : List of the Contents of the Posts Containing Explicit Request for Informational Support

Theme	Content of the Posts	Number of Instances
Treatment - Medication	Side effects of specific anti-depressants (Effexor, Paxil, Pristiq, & Amitriptyline)	6
	Long-term effectiveness of specific medications (Effexor, SSRIs, & Sertraline)	3
	General experience of taking Effexor	1
	Availability of any “generic form” of Lexapro	1
	Availability of medication that can alleviate severe mood swings	1
	Experience & methods of cutting down the amount of medication	1
	Possible impacts of taking multiple medications	1

Treatment – CBT	How to complete a thought record in CBT	1
Treatment - ECT	Effectiveness & side effects of ECT treatment	1
Treatment - Other	General experience with Astrazeneca Treatment Program	2
	Art therapy and its impact on negative core beliefs	1
Places – Clinic & Hospital	Quality of care at the mental health unit of the emergency department of a hospital	1
	Typical wait time to see a doctor or therapist at the hospital and clinic.	1
Information Materials- Books	Reading experience of a book called "I Don't Want to Talk About it: Overcoming the Secret Legacy of Male Depression"	1
	Mediterranean diet and its impact on depression	1
Other	Knitting as a way to manage depression during the winter	2
	Impact of smoking cessation on depression and anxiety	1
	Availability of telephone support line	1
	Time preference for exercise	1

Table 10. 2: List of the Contents of the Posts Containing Explicit Request for Emotional Support (Understanding)

Theme	Content of the Posts	Number of Instances
Difficulty in managing depressive symptoms	Memory loss possibly due to depression	1
	Irritation caused by short-temper and the problems of damaging items and self	1
	Anger and frustration due to "fruitless" efforts and feeling hopeless about job, life and future	1
Difficulty in managing both	Multiple health problems: Increased depressive symptoms caused by medication change due to high blood pressure	1

depression & other life challenges	Multiple health problems: anxiety caused by date-setting	1
Receiving formal treatments	Medication change suggested by health insurance carrier	1
	Losing access to Effexor caused by some changes of health insurance coverage	1
	Unpleasantness of staying in the mental health unit in a hospital	1
Work and depression	Decrease in the quality of work, debating between decreasing the amount of work or continue the same amount for a long-term benefit	1
	Work experience adding more stress, contemplating changing the job	1
	Feeling guilty for taking days off due to depression	1
	Lack of concentration and procrastination after going back to work	1
	Anxiety and panic attacks after going back to work	1
Setbacks	Severe mood swing and setback	2
Boyfriend/ Girlfriend	Breaking up with boyfriend	1
	Difficulty getting married due to stigma associated with mental illness	1
Other People	Others' lack of understanding about depression	1
	Tendency to think that "others do not like me"	1
	Tendency to establish self-confidence based on others' perceptions	1
	Discomfort caused by others' finding out about depression by accident	1
	Conflicting desire to hide depression and to stop being "fake" by disclosing it to others	1
Grief	Loss of someone important and how to manage it	2

Table 10. 3: List of the Contents of the Posts Containing Explicit Request for Emotional Support (Encouragement)

Theme	Content of the Posts	Number of Instances

Managing Depressive Symptoms	Deep despair, "feeling like a loser" due to lack of energy and motivation and negative self-talk	1
	Self-hatred, confusion about own identity due to a long history of depression	1
	Feeling defeated by crying due to the social expectation that men don't cry	1
	Negative impact of winter and loss of motivation and productivity	1
	Loss of appetite, frustration for reduced productivity	1
	Sadness for the loss of the better past (ability to cope with difficulties)	1
Difficulty in managing both depression & other life challenges	Overwhelmed by depression, work, relationship problems and health problems of family members	2
	Tired of repeating trying and failing in depression, Schizophrenia, and relationship problems	1
	Frustration caused by depression and other health problems (rash, Meneire's disease)	1
Receiving formal treatments	Difficulty finding a "right" medication among all options that seem to have negative side effects	1
	Difficulty in coping with depressive symptoms while waiting for medications to become effective	1
	Difficulty in lowering expectations as a psychologist suggested	1
Managing work and depression	Difficulty finding a job after attending a college, feeling hopeless for life and future	1
	Difficulty in being productive at work due to lack of concentration.	1
	Overwhelmed by workloads, experiencing panic & anxiety attacks	1
Setback	Frustration and hopeless feelings for mood swings without apparent "triggers"	2
Marriage	Feeling insecure and hopeless due to the experience of being cheated by husband	1
Boyfriend/ Girlfriend	Difficulty in being a good couple when both individuals have mental health problems	1
	Huge sense of loss and loneliness for a change of status from "something	1

	special" to friendship	
Other People	Fear of others' finding out about depression	1
Grief	Deep pain due to loss of someone important	1

Table 10. 4: List of the Contents of the Posts Containing Explicit Request for Emotional Support (Affirmation)

Theme	Content of the Posts	Number of Instances
Managing Depressive Symptoms	Confusion & hopelessness caused by mood change without clear "trigger", feeling that efforts to cope with depression is fruitless	3
	Uncertainty about the repeated attempts to stop "impromptu crying"	2
	Uncertainty about lowering expectation when there is no hope in life	1
	Confusion about repeated unsuccessful attempts to manage depressive conditions and life	1
	Uncertainty about self identity due to a long history of depression	1
	Uncertainty about if depressed or not, pondering the possibility of losing the awareness due to long history of depression	1
Receiving formal treatments	Nervousness about the effects of new medications	1
	Confusion about the theory behind CBT, guilt for skipping work	1
	Uncertainty about the value of mental health unit in the hospital	1
Managing work and depression	Frustration over slow progress of home renovation, magnifying depressive mood	1
	Uncertainty about changing and staying in the current job, uncertainty about "what I'm looking for"	1
	Feeling that "I should" go back to work, unsure about "if I'm really ill or not"	1
Marriage	Uncertainty about the current relationship with the marriage partner	1
Boyfriend/ Girlfriend	Difficulty in understanding and embracing "love"	1
	Confusion about what to learn from the loss of a close relationship	1

Other People	Conflicting desire to disclose and not to disclose depression	1
	Wondering if high frequency of posts is annoying anyone	1

Table 10. 5: List of the Contents of the Posts Containing Explicit Request for Coaching Support (Coping Psychological Symptoms)

Theme	Content of the Posts	Number of Instances
Managing Depressive Symptoms	Seeking advice on how to regulate mood swings and anger	2
	How to stop "impromptu" crying	1
	Whether men should hide when they cry	1
	How to manage frustration caused by short temper effectively	1
	How to "do things regularly" (e.g. exercise, sleeping patterns)	2
	How to eliminate depressive symptoms when there is no apparent "triggers" (when the outside world seems to have nothing to do with depression)	1
Difficulty in managing both depression & other life challenges	How to set goals and deadlines without causing anxiety (living with both depression and anxiety)	1
	How to organize house, financial problems, and life with only little energy left	1
	How to cope with financial problems, family problems and health problems that are constantly bringing self down	1
	How to cope with multiple health issues (weight issue, memory loss) and diminishing self-esteem caused by repeated marriage rejections	1
Receiving formal treatments	Whether seeing a doctor with honest communication or trying to overcome the situation without medication	1
	How to keep self motivated and energized to adhere to depression program when there is lack of interest in anything	1
	How to adhere to depression treatment when I'm feeling good	1
	How to break down a big goal of "becoming assertive" into smaller chunks	1

	How to lower expectation as a psychologist suggested, when there is no hope in life	1
Managing work and depression	How to get back to work when depressive symptoms are still present (lack of concentration, feeling overwhelmed)	1
	Seeking advice on the dilemma of changing job to get healthier vs. continuing the current job to keep the stable income	1
Marriage	Advice on how to realize what I want (ending or continuing a marriage)	1
Boyfriend/ Girlfriend	How to choose between avoiding or embracing "love" from a person	1
	Advice on what to learn from a relationship lost	1
	How to cope with a recent break-up and huge sense of loss	1
	How not to let a break-up affect mental health problems and move forward	1
Other People	How to manage the perception that "others don't like me"	1

Table 10. 6: List of the Contents of the Posts Containing Explicit Request for Coaching Support (Coping Physical Symptoms)

Theme	Content of the Posts	Number of Instances
Managing depressive symptoms	Seeking advice on how to get up in the morning and get back on "normal" schedule	1
	How to manage housework and financing with limited energy available	1

Table 10. 7: List of the Contents of the Posts Containing Explicit Request for Coaching Support (Coping Socio-Economic Problems)

Theme	Content of the Posts	Number of Instances
Difficulty in managing both depression & other life	How to cope with financial problems, health problems, and family problems that constantly bring me down	1
	Advice on balancing life as a single mother with multiple jobs, relationship	1

challenges	problems and health problems of other family members	
	Advice on how to manage financial issues and life	1
	How to manage health problems of multiple family members and conflicts within the family	1
Managing work and depression	Advice on balancing health and finance (changing job vs. staying the same)	2
	Seeking advice from business owners on the dilemma between taking breaks and less workloads vs. continue working for a long-term benefits	1
	How to stay positive and find a job when feeling hopeless in life and future	1
Marriage	Advice on how to cope with marriage rejections due to stigma associated with depression	1
Boyfriend/ Girlfriend	How to manage depression/anxiety and begin a romantic relationship at the same time	1
	How to manage relationship, especially during break-up, while depressed	1
	How to work on both self and partner when both have mental health issues	1
	To what extent I should disclose myself to an old friend on Facebook	1
Friends	How to develop and maintain friendship	1
Friends/Families	How to avoid friends and families finding out about depression, how to deal it if it happens	1
	How to repair relationship with step-daughter with Asperger Syndrome	1
Other People	Advice on how to handle people's lack of understanding about depression and their advice or suggestion that create more frustration	1
	How to deal with people finding out about depression	1

Table 10. 8: List of the Contents of the Posts Containing Explicit Request for Companionship (Chat)

Theme	Content of the Posts	Number of Instances
Chat	How other users choose an avatar and what they think of the relationship between self and the avatar of their choice	1

	Seeking opinion about what an authentic description for “normal” is	1
	Asking others’ plan on Valentine’s Day	1
	Asking when in a day other users like to do exercise	1
	Asking if anyone is interested in taking a pledge	1

Table 10. 9: List of the Contents of the Posts Containing Explicit Request for Companionship (Group Cohesion)

Theme	Content of the Posts	Number of Instances
Group Cohesion	Asking whether or not other users are annoyed by the frequency of my post	1

Table 10. 10: List of the Contents of the Posts Containing Explicit Request for Technical Support

Theme	Content of the Posts	Number of Instances
Technical problem	How to upload photos to the Forum	2

Table 10. 11: List of the Contents of the Posts Containing Implicit Request for Informational Support

Theme	Content of the Posts	Number of Instances
Information Material - Book	Seeking information about a book called "Feeling Good" by David Burn	1
Other- Nutrition	Seeking information about the benefit of cutting dairy products and drinking soymilk in reducing depressive symptoms	1
Other - Phone help line	Seeking information about phone number for support line for people in Greater Toronto Area	1

Table 10. 12: List of the Contents of the Posts Containing Implicit Request for Emotional Support (Understanding)

Theme	Content of the Posts	Number of Instances
Managing depressive symptoms	Clarifying the original question about memory loss and disturbed feelings	1
Setback	Feeling alone in the Forum in the process of sinking into a downward spiral	1
Family	Explosion of anger about inattentive, neglectful father	1
Other People	The perception that "I don't deserve to have relationships with others"	1

Table 10. 13: List of the Contents of the Posts Containing Implicit Request for Emotional Support (Encouragement)

Theme	Content of the Posts	Number of Instances
Difficulty in managing depressive symptoms	Overwhelmed by negative thoughts and/or crying, lack of concentration	3
	Disturbed by memory loss, potentially due to depression	1
	Difficulty in managing loneliness and fatigue	1
	Disturbed by memory loss potentially due to depression	1
	Frustration for not knowing what is causing depression	1
	Being desperate to find cure for depression, trying "everything"	1
	Inability to control tears in front of others, avoiding conversations at work	1
	Lack of motivation for improving the situation or things that need to be done (e.g. exercise, home renovation)	3
	Difficulty in managing mood swings	2
	Difficulty in controlling "illogical" anxiety	1
	Feeling hopeless and out of control	1

Difficulty in managing both depression & other life challenges	Difficulty in managing multiple health problems other than depression	7
	Difficulty in managing multiple health problems other than depression and financial problem	1
	Difficulty in managing multiple health problems other than depression, family issues, and dissatisfaction at work	1
	Difficulty in managing loneliness and financial problem	2
Receiving formal treatments	Nervous/Terrified before seeing a psychologist for the first time	1
	Frustration/anger caused by unproductive, dissatisfactory appointments with doctor	5
	Distress for not being able to make an appointment when needed	2
	Inability to be honest with a doctor due to the fear of being locked-up	1
	Distress caused by increased cost of medication	1
	Distress caused my withdrawal symptoms of medication	1
Managing work and depression	Inability to go back to work due to lack of energy and/or concentration and/or indecisiveness	5
	Fear of being overwhelmed with accumulated workloads caused by break taken due to depression	3
	Immediate stress caused by the loss of important papers, fear of losing job	1
	Fear of losing job caused by negative self-talk & self-doubt about one's ability	3
	Distress from setback caused by working too hard	3
	Distress caused by decreased income, regret for resigning/changing job	2
	Exhaustion due to the amount of work done, more work to do	3
Setbacks	Distress caused by setback (or "downward spiral")	10
	Fear of "going back to the square one" (going back to the original conditions)	3
	Negative impact of winter, causing poor eating habit	1
	Frustration caused by negative impacts of winter: poor eating habits	1

Marriage	Sadness caused by marriage falling apart due to depression and complications of the relationship	14
Boyfriend/ Girlfriend	Distress caused by developing feelings for someone and getting rejected during depression and job seeking	4
	Pain caused by ending an affair during depression	1
	Fear of losing boyfriend and of feeling alone	2
	Pain for not being able to comfort partner while depressed	1
Family	Empty feelings caused by the lack of care from family members	1
	Pain caused by family members' lack of interest in learning about depression	1
Family/Others	Uncomfortable experience of being called "weird" by others (including own family)	1
Friendship	Difficulty in mending relationship with a close friend	1
	Difficulty in developing close relationships potentially due to depression, shyness, introversion	1
Other People	Angry/self-conscious about perceptions of others	1
Grief	Distress caused by loss of family member/relative	3
	Loneliness and sadness for not being able to afford a good ceremony	1
	Feeling isolated due to difficulty in sharing grief with others	1
	Struggling in moving on and re-starting life	1

Table 10. 14: List of the Contents of the Posts Containing Implicit Request for Emotional Support (Affirmation)

Theme	Content of the Posts	Number of Instances
Managing depressive symptoms	Determined to work on mental health problems, yet uncertain about how to make a plan, which to work on (depression or anxiety) , if it is possible to adhere to the plan	2
	Difficulty in breaking negative thinking patterns (e.g. people don't like me)	3

	Difficulty in managing an anxiety provoking situation	2
	Confusion due to memory loss potentially due to depression but trying think of it positively and move on	1
	Unsure about reading a book being suggested, may not be able to finish reading	1
	Determined to travel, uncertain what the consequence is	1
	Determined to make a to-do list every day, trying to complete all tasks but not always successful	9
Success & sacrifice in managing multiple life challenges	Home renovation in progress, yet suffering from a severe setback of depression and other health problems (anxiety, Meniere's disease)	1
	Being successful at work & maintaining good relationship with family, yet strong frustration for not being successful in a romantic relationship	1
	Managing own depression, family member's health problems, and changing jobs, yet burst of tears and exhaustion at the end of the day	1
	Decided to sacrifice work and income for health and more time and care for children	1
Receiving formal treatments	Mixed feelings after seeing a doctor due to recent suicidal thoughts & not being able to communicate with the doctor honestly	1
	Uncertainty about the effectiveness of medications in treating multiple health problems in addition to depression, many mood swings	5
	Decision to quit taking anti-depressant without consulting a doctor, due to its side effects	1
	Took wb-dat test yet uncertain about next steps due to negative experience with medications	1
	Anxious for missing a call from a physician regarding a referral needed to see a specialist	1
	Unsure about carrying anti-depressants: convenient but concerned about the police finding it out while driving and getting arrested	1
Managing depression and work: Before going	Took a job placement test, bit confused about the results (need for CBT due to introverted nature, in particular)	1
	Uncertainty caused by indecisiveness	1

back to work	Hesitation caused by difficulty controlling tears & managing social interactions	1
	Desire against going back to work due to severe depressive symptoms	1
	Hesitation to go back to work, because of limited amount of energy	1
	Determined to receive formal treatments but not being able to decide whether or not to disclose it to a new boss	1
Managing depression and work: After going back to work	Uncertainty about the appropriateness of the speed & quality of progress both at work and in managing depression	2
	Difficulty managing self-defeating negative thoughts	2
	Glad for having been able to work all day without being overwhelmed by anxiety yet frustrated for not making progress in home renovation	1
	Uncertainty about the speed & quality of progress due to many mood swings and setback	3
Setback	Difficulty and doubt in adhering to the current treatment plan	1
	Hesitation to disclose others & families about depression	1
Marriage	Difficulty in fixing marriage in trouble while seeking help for depression	14
	Difficulty in breaking negative thinking patterns due to unhelpful response from marriage partner	1
Boyfriend/ Girlfriend	Confusion about "love", difficulty in embracing it	1
Friendship	Unsuccessful attempt to fix friendship after depression	1
Families	Dissatisfaction with an attempt to have families understand depression	1
	Confusion about the lack of emotion for dying father, unsure what to do	2
	Satisfaction and dissatisfaction with the mixed results of sharing inner struggles with parents	1

Table 10. 15: List of the Contents of the Posts Containing Implicit Request for Coaching Support (Coping Psychological Symptoms)

Theme	Content of the Posts	Number of

		Instances
Managing depressive symptoms	Ready to work very hard but not sure how to organize a plan to accomplish goals	1
	Problem of having short temper, desire to manage the problem	1
Managing multiple health problems	Ready to work hard but not sure which mental health issue to work on first, depression or anxiety problem	1

Table 10. 16: List of the Contents of the Posts Containing Implicit Request for Coaching Support (Coping Physical Symptoms)

Theme	Content of the Posts	Number of Instances
Managing depressive symptoms	My mind knows what I should do, but my body can't find energy to do so	2

Table 10. 17: List of the Contents of the Posts Containing Implicit Request for Coaching Support (Coping Socio-Economic Problems)

Theme	Content of the Posts	Number of Instances
Managing depressive symptoms	Not being able to deliver at work for 2 months, need to attend a business meeting today but need help to do so. Unsure what kind of help/how to find it	1
	Not being able to deliver at work, reputation suffering, need to know if I should "rebuild everything" or change job	1

Table 10. 18: List of the Contents of the Posts Containing Implicit Request for Companionship (Chat)

Theme	Content of the Posts	Number of Instances
Updates on everyday life	Health problems of a family member, adopting a dog, problems caused by electronic fixture	1

	Taking a dog to a beauty salon, changes in shifts at work	1

Table 10. 19: List of the Contents of the Posts Containing Implicit Request for Technical Support

Theme	Content of the Posts	Number of Instances
Technical difficulty	Not being able to see new posts due to some technical difficulty	1
	Not being able to upload photos	1
	Not being able to make a post to the Forum	1

Appendix A: Search Strategy Used for a Systematic Review of Literature on Depression Online Support Groups

The search strategies that were used for the Determination of Research Readiness served as the foundational search strategy for the systematic literature review of the thesis. The initial search was conducted in December 2009. In case that additional papers were published after the original searches, the same searches were conducted in February 2011.

Focus of Review: Online support groups for people living with depression

Database:
Medline

Inclusion and Exclusion Criteria:
Those studies reporting qualitative or quantitative data on a depression support group on the Internet were included. Studies were excluded if their main focus is not specific to depression.

Search Descriptions:

a) Internet related terms AND social support related terms (.mp.)
b) Online social support related terms (.mp.)
c) Web 2.0 related terms (.mp.)
d) (a) or (b) or (c)

Medline Search Terms and History:

#	Searches	Results
1	Internet:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	39384
2	e-mail:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	2770
3	email:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	1010
4	(information adj2 highway:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	94
5	electronic mail:.mp. [mp=title, original title, abstract, name of substance word,	1588

	subject heading word, unique identifier]	
6	world wide web:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	2368
7	www.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	1149
8	cyber:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	3507
9	web page:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	813
10	webpage:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	89
11	web bas:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	6401
12	webbas:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	17
13	exp Internet/	32151
14	exp electronic mail/	1125
15	web site:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	3983
16	website:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	4469
17	exp computer communication networks/	43187
18	or/1-17	60841
19	exp support groups/	7573

20	support group:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	3335
21	self-help:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	11684
22	selfhelp:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	13
23	discuss: group:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	915
24	peer to peer:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	216
25	peer support:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	823
26	forum:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	6357
27	p2p:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	95
28	social support:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	42627
29	exp social networks/	37071
30	(communit: adj2 (Internet: or world wide web: or e-mail: or email: or electronic mail: or web page: or webpage: or web site: or website: or web base: or www or cyber:)).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	132
31	or/19-30	62532
32	discussion list:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	69

33	listserv:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	174
34	list serv:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	67
35	chat room:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	141
36	chatroom:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	24
37	chat group:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	17
38	chatgroup:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	0
39	chat technolog:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	2
40	e-bulletin board:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	0
41	ebulletin board:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	0
42	newsgroup:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	102
43	news group:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	23
44	instant messag:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	63
45	mailing list:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	331

46	irc:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	862
47	inter: relay:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	56
48	virtual support:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	12
49	electronic support:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	29
50	Internet group:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	47
51	(Internet adj2 group:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	205
52	(Internet adj2 support:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	167
53	(Internet adj2 communit:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	66
54	(online adj2 group:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	166
55	(online adj2 support:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	203
56	(online adj2 communit:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	98
57	(web adj2 group:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	82
58	(web adj2 support:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	120

59	(web adj2 communit:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	69
60	(virtual adj2 support:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	60
61	(virtual adj2 group:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	72
62	(virtual adj2 communit:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	95
63	newsgroup:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	102
64	news group:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	23
65	usenet:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	21
66	bulletin board system:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	26
67	mailbox:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	52
68	mail box:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	12
69	electronic group:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	14
70	(electronic adj2 group:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	126
71	e-communit:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	10

72	messageboard:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	0
73	message board:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	49
74	or/32-73	3246
75	18 and 31	2238
76	74 or 75	4901
77	bliki:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	0
78	blog:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	202
79	bookmarklet:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	1
80	collaborationwar:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	1
81	connotea:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	3
82	del icio us.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	0
83	flickr.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	4
84	facebook:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	36
85	folksonom:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	4

86	friendster.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	2
87	google chat:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	0
88	google talk:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	0
89	(google adj2 collabor:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	1
90	ipod:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	304
91	librarything:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	0
92	mashup:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	12
93	(mp3 adj3 (audio: or player: or record: or device: or technol: or web: or compress:)).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	48
94	(mp4 adj3 (audio: or player: or record: or device: or technol: or web: or compress:)).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	1
95	myspace:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	26
96	news feed:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	6
97	newsfeed:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	0
98	openlaszlo.mp. [mp=title, original title, abstract, name of substance word,	1

	subject heading word, unique identifier]	
99	open source application:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	26
100	(open source adj2 application:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	47
101	(participatory adj2 web:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	2
102	(participatory adj2 Internet:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	1
103	pod cast:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	2
104	podcast:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	77
105	rss feed:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	16
106	really simple syndicat:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	12
107	rich site summar:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	3
108	secondlife.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	1
109	Second Life.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	55
110	semantic web:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	168
111	(social adj2 bookmark:).mp. [mp=title, original title, abstract, name of	8

	substance word, subject heading word, unique identifier]	
112	(social adj2 book-mark:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	0
113	(social adj2 software:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	30
114	(sociable adj2 technolog:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	1
115	(streaming adj2 media:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	10
116	tag cloud:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	1
117	technocrati.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	0
118	videocast:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	2
119	(virtual adj2 collabor:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	46
120	vodcast:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	1
121	web api:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	2
122	(web adj2 syndicat:).mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	5
123	webcast:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	137
124	web cast:.mp. [mp=title, original title, abstract, name of substance word, subject	3

	heading word, unique identifier]	
125	web-log:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	27
126	weblog:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	28
127	web tag:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	1
128	webtag:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	1
129	wikipedia.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	34
130	wiki:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	150
131	youtub:.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	30

132	Statistical Package for Social Sciences.mp. [mp=title, original title, abstract, name of substance word, subject heading word, unique identifier]	147
133	or/77-131	1345
134	133 not 132	1332
135	76 or 134	6129
136	limit 135 to (english language and yr="1990-2010")	**5159**

Total Citation Yield = 5159

Appendix B : Search Strategy Used for a Systematic Review of Literature on Typology of Support

Focus of Review: Typology of "support" and "help"

Search Terms: (typolog* OR taxonom*) AND (support* OR help*)

Source: Scholar's Portal

Timeline: n/a

Limit: English, journal article, must include key word(s) in title

Hits: 163

Relevant: 12

Inclusion/Exclusion Criteria: relevance

Results:

Agneessens, F., Waege, H., & Lievens, J. (2006). Diversity in social support by role relations: A typology. *Social Networks, 28*, (4), 427 - 441.

Amato, P. R. (1983). Helping behaviour in urban and rural environments: Field studies based on a taxonomic organization of helping episodes. *Journal of Personality and Social Psychology, 45* (3), 571 - 586.

Boyce, W. T, Kay, M. & Uitti, C. (1988). The taxonomy of social support: an ethnographic analysis among adolescent mothers. *Social Science & Medicine, 26* (11), 1079 - 1085.

Braithwaite, D., Waldron, V., & Finn, J. (1999). Communication of social support in computer-mediated groups for people with disabilities. *Health Communication, 11*, 123-151.

Brescia, W. (2003). A Support Taxonomy for Developing Online Discussions. *Journal of Public Affairs Education, 9* (4), 289 - 298.

Finn, J. (1999). An exploration of helping process in an online self-help group focusing on issues of disability. *Health and Social Work, 24*, 220-231.

Fitch, M. (2000). Supportive care for cancer patients. *Hospital Quarterly, 3* (4), 39-46.

Kerr, L.M. J., Harrison, M. B., Medves, J., Tranmer, J. E., & Fitch, M. I. (2007). Understanding the supportive care needs of parents of children with cancer: An approach to local needs

assessment. *Journal of Pediatric Oncology Nursing, 24* (5), 279-293.

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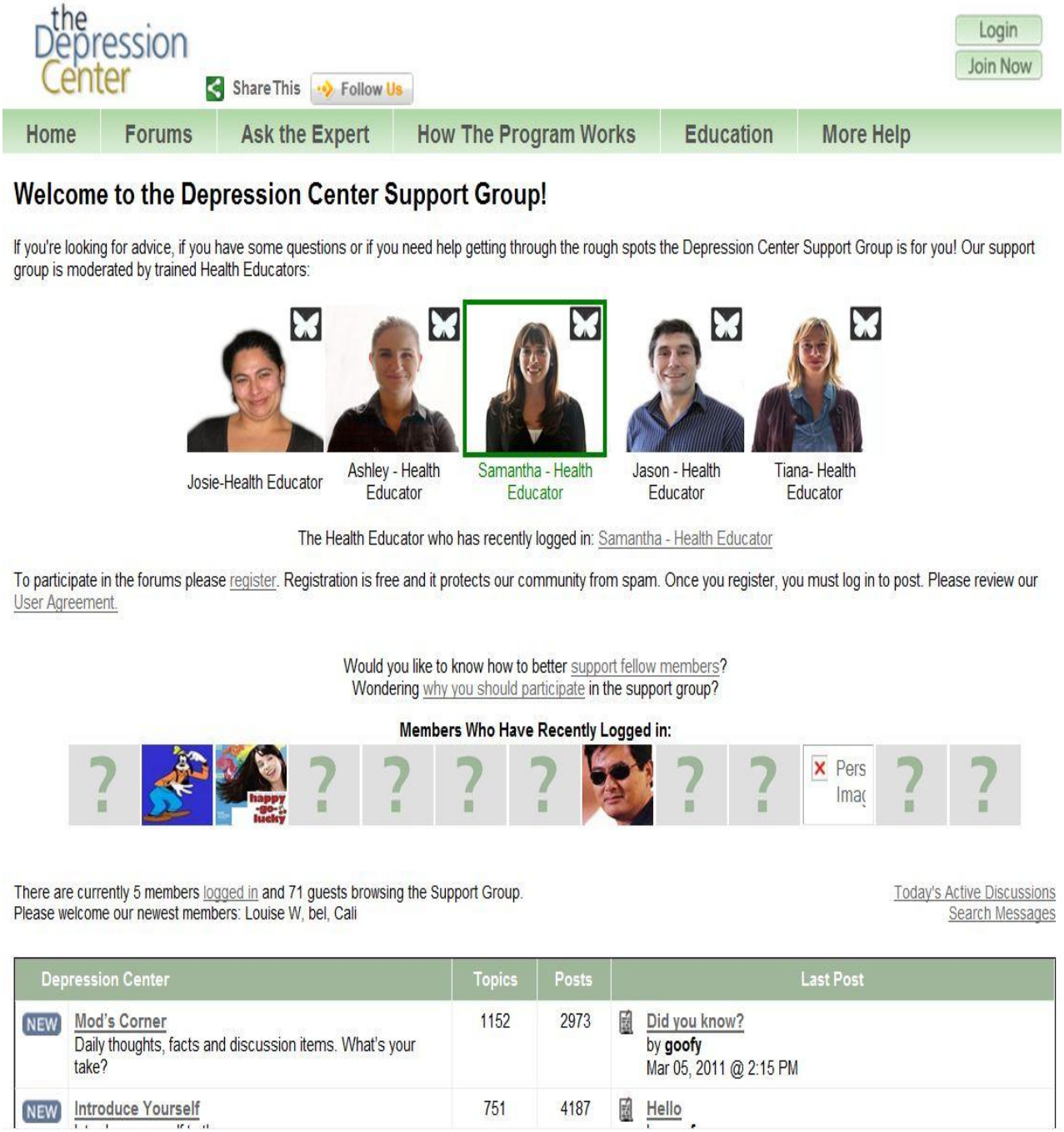
Radin, P. (2000). To me, it's my life: Medical communication, trust, and activism in cyberspace. *Social Science and Medicine, 62*, 591-601

Appendix C: A Screenshot of the Front Page of the Depression Centre Forum



Appendix D: A Screenshot of the Depression Centre Forum

Depression Center		Topics	Posts	Last Post
NEW	Mod's Corner Daily thoughts, facts and discussion items. What's your take?	1153	2974	Communication Part VI by **Samantha - Health Ed** Mar 06, 2011 @ 7:34 AM
NEW	Introduce Yourself Introduce yourself to the group	752	4198	A little about me by **Jewel** Mar 06, 2011 @ 11:52 PM
	Getting Back to Work Are you out of work? Have you recently gone back to work? Share your getting back to work stories here.	28	299	How to Get Out of Bed (on time!) by **MnicoleS** Feb 28, 2011 @ 5:55 PM
	Group Program Discovery Walkthrough each session of the program as a group	99	659	Session 4 Group Walkthrough by **Ashley, Health Educator** Jan 27, 2011 @ 4:27 PM
	Understanding Major Depressive Disorder A discussion about symptoms and basic information	512	3019	February Ask the Expert - Relationships by **wildwildlife** Feb 12, 2011 @ 10:53 PM
	Medications An exchange of information and experiences (not advice). Share what works and doesn't work for you.	277	1698	5-HTP for depression? by **Flint** Feb 21, 2011 @ 5:03 PM
	Goal Setting and Activity Scheduling hints, tips and support	83	510	Exercising... it really DOES work!!! :) by **Tiana, Health Educator** Feb 06, 2011 @ 8:19 AM
	Challenging Your Negative Thoughts Changing negative thoughts and developing a more optimistic, positive outlook on life.	303	2471	Not sure by **Courage** Feb 24, 2011 @ 4:43 PM
	Core Beliefs and Assumptions help with developing more adaptive core beliefs and assumptions	30	508	a different way to view the same problem by **Tiana, Health Educator** Jan 30, 2011 @ 9:45 AM
NEW	Relationships A discussion about how depression affects relationships and how relationships affect depression.	445	3418	Learning to FEEL loved by **goofy** Mar 06, 2011 @ 12:50 AM
	Lifestyle sleep, diet, exercise, relaxation and meditation	83	669	Sunday night pledge by **Strength18** Dec 19, 2010 @ 7:17 PM
	Coping with Setbacks advice and support	199	2257	Depression Episodes by **MediumMoodSwing** Feb 14, 2011 @ 9:27 PM
	Success Stories post your successes here. Inspire others!	98	826	My little bit of positive .. by **FFirecracker** Dec 11, 2010 @ 8:19 PM

Appendix E: Coding Categories

Support Type		**Definition**	**Example**
Informational Support		Request: Asking for lay knowledge and/or for sharing someone's personal experience with specific medication, psychotherapy, physician, clinics, books, website and other materials related to depression Provision: Giving lay knowledge and/or sharing personal experience with any of above	"Does anyone know anything about this drug called Cymbalta?" "Any book recommendation for understanding the basics of psychotherapy?" "I've been taking Cymbalta for about a year and it's great."
Emotional Support	**Understanding**	Request: Searching for someone who can relate to one's experience, feelings and concerns Provision: Relating to what someone is expressing based on a similar experience	"Has anyone felt this way?" "I know what you mean." "I can totally relate"
	Encouragement	Request: Expressing despair, sorrow, exhaustion, or regret for one's situation and/or need to feel hopeful Provision: Expressing sympathy and/or attempts to inspire hope	"Do I ever get normal?" "Is there any hope in this situation?" "I am here to listen to you and support you" "We are here for you"

	Affirmation	Request: Expressing uncertainty and/or need for positive feedback for what was done Provision: Giving positive evaluation of someone's idea, attitude or action.	"Today I was sitting here all day not knowing what to do. I took a shower though, at the end of the day." "I finally made an appointment to see a therapist." "That's a great news." "You're on the right track." "I'm so happy for you"
Coaching Support	**Psychological**	Request: Asking for advice regarding how to cope with the diagnosis and/or experience of depression Provision: Providing opportunity to learn new coping skills and problem-solving skills regarding issues being presented	"I wonder how others in this community manage the feeling of worthlessness. " "How about writing down your thoughts? Sometimes it helps." "I'd recommend consulting your doctor."
	Physical	Request: Asking for advice regarding how to manage physical symptoms of depression Provision: Providing advice regarding how to cope with physical symptoms	"I've done nothing today but am feeling exhausted. Can't do anything but sitting in front of the computer" "Take just a baby-step at a time"
	Socio-Economical	Request: Asking for advice regarding socio-economic problems that are magnifying the impact of depression, such as financial problems and inter-	"I really need a break from my work but don't know if it's a smart idea in a long-run considering today's economy.... Any tips?"

		personal issues Provision: Providing advice regarding how to manage those problems	"Have you talked to your boss about your situation?"
Companionship	**Chat**	Request: Asking questions about a topic that is not related to depression Provision: Offering a response that is not related to depression	"What part of Canada are you from?" "How are you going to celebrate the Valentine's Day?" "I had a lovely time in Boston."
	Group Cohesion	Request: Asking questions and/permission for an action that are related to the structure of function of the group Provision: Offering answers and/or permission for the action, representing others	"Am I making too many posts? Are they freaking you out, guys?" "As far as I feel, I'm not freaked out at all. I'm actually enjoying your posts"
Spiritual Support		Request: Asking for the meaning of life, a sense of purpose in life, or a relationship with a higher being Provision: Providing one's or others' views on the issues above	"I don't know why the God gave me this experience, depression" "I don't know if you'd agree with me but I think this is a learning experience..."
Instrumental Support		Request: Asking for help with activities of daily living, child care, financial assistance,	"I know it sounds crazy but is there anyone who can possibly give me a ride to the hospital?"

	transportation etc. Provision: Offering help with specific activities of daily living	 "I could, but what time?"
Technical Support	Request: Asking specific technical questions, such as how to make/delete a post. Provision: Offering answer to those questions.	"Can anyone tell me how to retrieve those threads I made in the past?" "Go to the search section of the Depression Centre. There's some instruction"

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