

## **EMERGENCE OF VIRTUAL COMMUNITIES AS MEANS OF COMMUNICATION: A Case Study On Virtual Health Care Communities**

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### **ABSTRACT**

Like in all areas, virtual communities make their presence felt in the area of healthcare too. Virtual communities play an important role in healthcare in terms of gathering information on healthcare, sharing of personal interests and providing social support. Virtual communities provide a way for a group of peers to communicate with each other. In the health context, they may also be referred to as electronic support groups. They include forums, discussion boards on websites, mailing lists, chat rooms, or newsgroups. This paper provides an overview and discussion of virtual communities in health care. In this paper the state of marketing implications in virtual communities in the health care sector is reviewed. The case study method was used. Data were collected from a web site about health care, as content analysis. CRM, customization, marketing research and database, e-word of mouth, e-services and promotions as marketing tools were used in the virtual community. The findings indicate that members of the reviewed web site used forums heavily as a means of interactivity and gathering of health related and social based information.

**Keywords:** Internet, Communities, Virtual Communities, Health Care.

### **INTRODUCTION**

Today, like in all areas, the Internet has had an important effect in the area of health as well. With the development of the Internet many new and different applications have developed and one of the most important of these are probably virtual communities. Virtual communities, which are used as a tool for providing information and word of mouth communication, have become a widely used marketing tool in the area of healthcare services in recent years.

A virtual community is a group that does not depend on space and time to maintain ties or participation in the group whose members share the same interest and to maintain closeness, that is based on internet communications and whose membership is based on free will. In these kinds of communities whose services are provided on a membership basis, health services of various kinds are offered to the members. In virtual communities, virtual interactive communications established between the members can be an important determining factor when choosing a product, service or doctor.

Just like in traditional word of mouth communications, the advice given by the members of virtual communities can have a significant effect on other members, since the advice givers are experienced about the product they communicate on for a length of time. Due to this characteristic of theirs, virtual communities have begun to make their presence felt more and more in the marketing of healthcare services (Argan and Tokay-Argan, 2007).

Many people use the Internet regularly to stay healthy or to gather information about their health problems. These kinds of information used to be provided by healthcare professionals and only when they were needed. This situation began to change at the end of the 1990s and digital healthcare information started to become widespread. The biggest power behind the prevalence of digital healthcare information has been the Internet (Homewood, 2004). Even though the Internet, and especially the World Wide Web, is an important source of information about health and illnesses, the quality of the information available is still being argued today (Wallace, 1997).

Demanding more information than they were being offered, consumers of healthcare services started to use interactive mediums. Virtual communities attract attention as the most important tool that provides interactivity. Consumers who interact on a web site obtain information about health through three methods. These are; published online information sources, informal information obtained from other members of the virtual community, and information obtained as a result of interactions with healthcare professionals. For example, in Great Britain MedicDirect (medicdirect.co.uk) offers an interactive health service to its members. The visitors of the web site ask questions to expert healthcare professionals via e-mails and toll free telephone numbers, and get answers to their questions.

#### **THE CONCEPT OF VIRTUAL COMMUNITY**

Virtual communities are especially prevalent in terms of convincing communications among people who engage in similar activities. Being interested in certain activities; the concept of sharing feelings, opinions and information are among the most distinctive characteristics of virtual communities. Present practices are shaped around the basis of establishing a web site and people becoming members of this site to share their thoughts, opinions and experiences. As virtual communities have started to become popular, different disciplines have started to analyze these areas in detail and obtain administrative inferences from them (Lee, Vogel and Limayem, 2003).

Traditionally the concept of community is thought of as a closed system. With the development of information technologies, the concept of community has also undergone some changes and the concept of community that used to be a closed system has begun to be transformed into an open system. It is possible to come across numerous definitions of virtual communities. However, the elements that these definitions manifest share similarities with each other.

Real communities are based on place and membership is shaped according to norms. But in virtual communities there are no place and time limitations and status is determined in accordance with ideas and duties. Virtual communities are formed on the basis of needs (Johnson, 2001). Virtual communities exist due to inclinations, shared interests, the general practices of a professional discipline and values.

Cyber communities such as web based forums and mailing lists reveal themselves via social interaction, natural sharing of thoughts and feelings, membership and friendship, commitment and attachment (Nguyen et al., 2006).

According to Ericson (1997) virtual community is defined as a long-term computer aided discussion environment between large groups. Carver (1999) defines virtual community as people coming together and interacting by sharing real thoughts in an environment shaped by trust. Virtual community can be defined as a group of people coming together at an independent place and time because of a general interest, problem or duty and interacting with each other (Leimeister, Daum and Krcmar, 2002). This definition puts a stress on the limitlessness of virtual communities in terms of time and place. So virtual communities allow their members to interact at any time and at any place.

In the light of these explanations it is possible to list the characteristics shared by virtual communities under the following headings regardless of their purpose, subject or location (Bagozzi and Holakia, 2002; Odabasi, 2005):

- Most virtual communities organize around a different area of interest.
- Just like in real social communities, the members of virtual communities have a sense of closeness and maintain truly deep feelings towards the other members.
- Most virtual communities create shared rules and a communication language and put them into use.
- In contrast with individuals who passively consume the content offered by communication tools, in virtual communities the content is created with the active contribution of the members.
- Because most virtual communities use web based chat rooms, newsgroups, bulletin boards or e-mail lists, communication mostly happens through written texts.

Howard (1993) stresses that to be able to talk about a virtual community, three factors need to exist. These are:

- web or cyber space,
- public discussion and
- personal relationships.

Web or cyber space indicate more the internet or a web site, as different from real communities, public discussion indicates the sharing of experience, interests, opinions and information in a virtual environment, and personal relationship means the members of contributors build and develop relationships between themselves. Virtual communities are classified in various forms. The most widely used classification is the one developed by Hagel and Armstrong (1997). This classification is shaped on the basis of needs and is divided into four groups: interest, relationship, fantasy and procedure. The need for interest indicates the coming together of a group of people who share an interest and experience in a special subject. The need for relationship is about experience that provides the opportunity to build meaningful personal relationships and to get together with other people. The need for fantasy symbolizes the discovery of a new world of fantasy and fun by people who have come together. And the need for procedure indicates getting together as a result of the exchange of information between participants (Lee, Vogel and Limayem, 2003). According to the classification made by Carver (1999), a distinction is made in terms of interest, relationship, fun and commerce.

And Jones and Rafaeli (2000) have made a detailed classification in the context of purpose of use, social structure and technological basis and have classified virtual communities as it was put forward by Hagel and Armstrong (1997).

## **VIRTUAL HEALTHCARE COMMUNITIES**

Nowadays it is possible to see that in the area of healthcare services too interest and attention is given to internet based communications studies. And in terms of practice many virtual communities that are emphasized and that have the characteristic of being the first have emerged in the area of health. The forum called Cancerforum is one of the most popular forums in the literature (Hagel and Armstrong, 1997). Professionals operating in the area of public health have seen the advantages provided by the Internet in terms of the sharing of information and the presentation of services and have started to use it extensively. Health statistics and data about illnesses are convenient information sources for both healthcare professionals and for the general public. In this sense, virtual communities are an important Internet medium used by healthcare institutions and establishments to reach their target audience (Cassel, Jackson and Cheuvront, 1998).

The area of interactive health communications is an area that has shown an important growth in recent years and also contains virtual communities. Interactive health communications that are founded on Internet based technologies reach new levels with virtual communities. Virtual communities that also have the function of informing and guiding patients and the function of being a sociological and psychological support tool, also offer unique opportunities to organizations in terms of management and marketing. Interactive health communications have more potential advantages when compared with traditional face-to-face communications.

One of the most important of these is the financial efficiency brought about by using Internet based technology. Interactive technology allows millions of people to reach health materials, practices and information at the same time. The other important advantages are the openness of the communications and access speed. Instant interaction, the opportunity of personalization and the extremely low distribution cost can also be given as other important advantages. Interactive health communications offers flexible and extensive options in terms of preventive healthcare services. Due to these technologies, the consulting services between doctors and related parties will also be affected. Thanks to online interactive sites healthcare professionals will be able to serve even more members of the general public (Fotheringham et al., 2000). One of the most important effects of the use of electronic environments in the distribution of healthcare services has been the electronic prevalence of P2P (Peer to Peer) communities and virtual communities. People use healthcare related virtual communities in accordance with their personal interests to share their experiences, to ask questions, to obtain or provide emotional support and to obtain useful information that will help those (Eysenbach et al., 2004).

A virtual community in the area of healthcare services means a group formed as a result of the getting together of people for the purpose of obtaining activities about health care and education (a collectively formed social structure).

The activities in the virtual community include the distribution of health services, the education of patients or staff, a platform that provides support, health and treatment related discussions between the members about certain subjects and problems, the sharing of documents and information, the continuation of relationships beyond face to face events and the consultation of experts. (Demiris, 2006).

Today there are many virtual communities within the health care services industry. For example in Germany there are virtual communities about more than 60 kinds of cancer (Dannecker and Lechner, 2004). Everyday 12.5 million health related searches are being made on the World Wide Web. By 2004 Yahoo Groups had 25.000 electronic support groups listed in the area of health (Eysenbach et al., 2004). 40-50% of patients access medical information via the Internet and the information they obtain effect their choice of treatment (Meric et al., 2002). Electronic health professionals provide medical databases to patients but patients also want to obtain information about their treatment and problems by taking other patients as a reference. In terms of the concept of interaction, which is a priority in virtual communities, of the 268 Web sites scanned in Germany, only 18% offer cancer patients the opportunity of interaction (Arnold, Daum and Krcmar, 2004). In recent years the amount of research about the studies of patients getting support has started to increase. Studies have been conducted about the benefits obtained by people participating in Patients' online Communities (POC) (Ferguson, 2000) and the process of obtaining personalized support (Finn, 1999). Other studies in this area have focused on the quality of medical information (Eysenbach and Diepgen, 1999) and the transformation of the role of the patient as a result of online participation (Hardey, 2001).

Virtual communities that only cover patients and family members contain people who are getting the same treatment or who have been diagnosed with the same illness. In a study conducted by Finn (1999), it has been shown that virtual groups that help themselves implement most of the process of getting face-to-face help. The most striking aspects of these kinds of communities are mutual problem solving, information sharing, expressing of feelings and the creation of mutual support and empathy. Virtual communities that contain both health care providers and patients contain practices that enable alternative communication methods between providers and patients and enhance illness management. Lastly, virtual communities that are open to the general public contain education services, discussion forums and other activities that do not require an official diagnosis or the necessity of a treatment to provide health care services. Technologies related to virtual communities include online message boards, automatic mailing lists for asynchronous communication, video conference systems, internet relay chat, groups, special chat rooms for synchronous communication. While some virtual communities have a moderator, others may not. The messages sent by the members of the virtual communities have to fit the norms of the virtual community and the normative processes of the group are mostly based on informal rules (Demiris, 2006).

Interactive health communication that uses Internet technologies has an important effect on the mediation options in preventive health services. These kinds of technologies can have an important effect on the consulting services of doctors and other practitioners and for large numbers of the general public proactive mass access strategies are becoming new options. These developments create both new opportunities and challenges. It is possible to talk about a number of advantages provided by Internet based technologies. These advantages are characteristics such as the convenience and ease of access of computer aided communications, flexibility, interactivity and automatic processing (Fortheringham et al., 2000).

Among the virtual communities in the area of health the largest in number are communities about chronic illnesses. Since the progress of chronic illnesses takes a long time and they require interaction, chronic illnesses have a more suitable structure for getting together electronically. Thus chronic illnesses differ from other health-related communities in terms of long term relationships and being continuously face to face with patients.

Most chronic patients join virtual communities to satisfy the need for information. For this reason, patients tend to prefer virtual communities where they can access expert information. At least 40% of Americans have a chronic disease, two thirds of all medical spending is on chronic diseases and about 20% of these are made on twenty special illnesses (Winkelman and Choo, 2003). One-third of patients hospitalized in Turkey are hospitalized for chronic illnesses and the top three causes of death are chronic diseases (Onal, 2001). The information needs of a chronic patient include detailed information about his/her illness, the side effects of treatment, treatment plans, professional relationships, communicating with other groups that have the same illness and supportive subjects for family and friends (Winkelman and Choo, 2003). Since chronic patients are exposed to all levels (drugs, treatment, side effects etc.) of the illness for a long period of time, they constitute a real reference group. Chronic patients within the social web use virtual webs to fulfill their needs and the needs of health care providers, therapists, health organizations and other patients with the same disease. While it is easier for healthy people to become a reference group in physical environments, those with a certain disease do not go out into physical environments much and so they present their experiences through different tools like virtual communities. About 39% of cancer patients use the Internet and 2.3 million cancer patients interact online (Eysenbach, 2003).

## **RESEARCH OBJECTIVES AND METHOD**

The objective of this study is the case study of a frequently visited virtual community about babies in Turkey. For this purpose the case study method has been used. In this study the case of a virtual community in the area of health in Turkey has been analyzed. Case studies can be said to be the observation of uncontrolled real life situations. The aim of a case study understands present and complicated social phenomena. The questions asked by case studies are "how" and "what." Case studies use a combination of qualitative and quantitative evidence. Also, multiple evidence sources are used within the frame of method triangulation. The reasons behind the choice of site to be analyzed as a case study are these: Because it is in the area of health, because of its popularity, because of the high level of awareness, because the information perceived and the site's image is comprehensive and good, because of the number of members and the categories of the site and their scope. When choosing the site to be analyzed within the context of virtual communities, it has been aimed to take as basis sites that mothers are inclined to visit, and for this purpose after interviewing 14 mothers who use the Internet, [www.bebekkokusu.com](http://www.bebekkokusu.com) was chosen. The number of members of the site chosen to be analyzed was 58.965 (Argan and Tokay-Argan, 2007) at 15 May 2007, by 3 November 2007 this number had become 64.363 and the average number of visitors per day is 450-500. The number of messages sent one week ago (27 October 2007) was 15.788, and the number of people becoming members was 231.

The purpose of this case study is to put forth a descriptive analysis of virtual communities in the area of health and by doing so to shed light on quantitative and qualitative studies that might be undertaken in the future. It was aimed to carry out a descriptive content analysis in the virtual community chosen on the level of theme in relation to the level of knowledge, marketing practices, the establishment of forums, and the messages posted in the forums. For this purpose the web site called [www.bebekkokusu.com](http://www.bebekkokusu.com) was subjected to a content analysis within the context of virtual communities. The methods used were site analysis, descriptive content analysis and metrics about the forums within the context of a case study. The basic aim of content analysis is to identify notions and relations that would define the collected data (Yıldırım and Simsek, 2006; Argan et al, 2006).

For this reason, the content analysis starts with the coding of data. In our study, the coding scheme includes fourteen measurement themes.

These themes aimed to put forth the services and practices at the web site. The themes of measurement used in the content analysis included information services, personalization, interaction services, marketing practices, the number of messages and subjects at the main forums, the number of messages and subjects and the content of the sub-forums connected with the four main forums (doctor, just us, from me to you and top secret) and the most read and answered messages and themes.

Two ways of coding could be employed in content analysis: traditional coding and interpretive coding. While the coding themes in this study were mostly suitable for traditional coding, for the evaluation of the 25 most read messages in related forums, interpretive coding was used.

In the coding stage, two coder groups were formed and there was one person in each coder group.

For maintaining the accuracy of coding, the results of coding for each measurement theme were negotiated. After the negotiations, a pilot coding study was realized on the web site. Each coder group coded the measurement themes independently.

Then a consensus on the disagreed coding was achieved and the reliability of the themes was calculated. The analyses were based on the final coding scheme.

## **FINDINGS AND RESULTS**

### **Reliability of the Coding**

Before presenting the findings of the research, reliability of the coding stage of the content analysis should be put forth.

In studies using content analysis as a methodological approach, coding reliability is an important issue (Argan et al, 2006). Like it is in the movies and television films, it is important to achieve inter-coder reliability in the coding of separate coder groups on specific themes about the health based virtual community (Kassarjian, 1977; Argan et al, 2006).

It could be said that most of the coding themes are nominal variables, and therefore agreement measures are employed for calculating the reliability of nominal variables (Avery and Ferraro, 2000).

For any specific theme, the agreement ratio for nominal variables is determined according to 0.80 acceptance level (Lerman and Callow, 2004). For the fourteen pre-determined measurement themes 326 coding were made and 92.8% agreement was achieved for the overall coding process.

It was calculated that the agreement ratio of for all the fourteen themes was above 95.3% which is above the minimum acceptance level of 0.80. Kappa (agreement measure) and correlation analysis are also used in determining the inter-coder reliability as supportive tools.

The calculations showed that Kappa and correlation values proved significant relations for all themes at .01 significance levels (See Table: 1).

**Table: 1.  
Inter-coder Reliability Results**

Coding Themes	% of Agreement	Kappa (p)	Correlation (p)
Information Services	87.6	.000**	.000**
Customization Services	86.8	.000**	.000**
Interactivity Services	94.9	.000**	.000**
Marketing Applications	98.6	.000**	.000**
Forums and Numbers of Message and Subjects	100	.000**	.000**
Numbers of Message and Subjects of Doctor Forums	100	.000**	.000**
Message Contents of Doctor Forums	97.8	.000**	.000**
Numbers of Message and Subjects of Just Us Forums	100	.000**	.000**
Message Contents of Just Us Forums	92.3	.000**	.000**
Numbers of Message and Subjects of From Me to You Forums	100	.000**	.000**
Message Contents of From Me to You Forums	94.6	.000**	.000**
Numbers of Message and Subjects of Top Secret Forums	100	.000**	.000**
Message Contents of Top Secret Forums	87.3	.000**	.000**
The most reading and replaying Message Themes	94.8	.000**	.000**

\*p < .05; \*\* p < .01

### Services Categories

In terms of basic headings, there are a total of 22 subject headings or categories in the home page of the site. 14 (63.6%) of these subjects have sub-subjects or constitute of headings that present the opportunity for information or experience. It can be said that these 14 areas that remain outside subjects like searching the site and contact us can be said to constitute the main building blocks of the site since they constituted the most decisive subjects of the site in relation to subjects like health information, chatting, sharing of experience (Table 2).

**Table: 2.  
Areas in the Web Site About the Sharing of  
Information and Experience**

<i>Information and Experience Areas</i>
Children's health
Psychology
Nutrition
Your selections
Forums
Writers
Disable children
Our other children
Chat rooms
Baby diaries
Birth stories
Playground
Promotion
Quiz

At the end of the site analysis services were dealt with according to the classification put forth by Leimeister, Daum and Krcmar (2002) and were categorized as information services and interactive services. And information services were examined under the two categories of general and personalized.



The site was analyzed as a general information services site and it can be seen that there are informative news items and reports as well as links to other sites. Bulletins and activities are also present at the site that was analyzed as general information services. In terms of personalized information, the name of the member is placed at the right side of the site, and information such as e-mail notification services and the list of other members are being offered. With the settings link members can make the changes they wish to get personalized information and e-mail messages.

Under the category of interactive services there are boards and forums. Also, members are able to chat in the chat rooms and follow developments through the bulletin area. To attract interest in the site, multi player or single player games are used to offer an experience to visitors. Ratings are determined with a scoring system based on stars that represent the quality and trustworthiness of the information being offered. There is the opportunity to interact with members or site administrators via e-mail.

Detailed information is being offered to members and the other participants of the site under five main categories. These main categories are nutrition, children's health, psychology, development and pregnancy and birth.

There is detailed sub-categorical information under each main category. For example, under the category of nutrition there are general children's nutrition, the effects of nutrition on the mental development of children, mother's milk and formulas, the nutrition of babies and supplementary foods, vitamins and minerals. The ratings (voting with stars) of the site's participants are noticeable when each information category is clicked.

### Forums

There were four main forums by the date of this study (3 November 2007). These forums are "Doctor Forums" "Just Us Forums", "From Me to You Forums" and "Top Secret Forums." The number of messages sent the number of subjects and the ratios of the forums analyzed within the context of this study have been given in Table 3.

When the ratio of messages sent to the four main forums is analyzed, the number of messages sent to the Just Us forums was 1.318.484 and their ratio is 93.6%. The second one is the top secret forums with a ratio of 2.7%, the third is doctor forums (2.5%). Similarly, in terms of the number of subjects the just we forums have the highest ratio with 64.6% and the doctor forums come second with 30%.

**Table: 3.**  
**The Number of Messages and Subjects in the Main Forums**

Forum Name	Number of Messages	Message %	Number of Subjects	Subject %
Doctor Forums	34.348	2.5	15.133	30,0
Just Us Forums	1.318.484	93.6	32.616	64.6
From Me to You Forums	17.452	1.2	1.023	2.0
Top Secret Forums	38.356	2.7	1.727	3.4
<b>Total</b>	<b>1.408.640</b>	<b>100</b>	<b>50.499</b>	<b>100</b>

### Doctor Forums

The number of messages sent to the sub categories of the "Doctor Forum" and their ratios are extremely important in terms of obtaining information about health because the messages sent here are being answered by the consultant doctors of the site and these answers usually contain medical information. Members interact with 5 sub categories under the Doctor Forum. 80.1% of the messages sent to the forums under the Doctor Forum are about children's health and childcare and 7.5% focus on internal diseases (Table: 4). Five sub forums can be seen under the children's health and childcare forum. These sub forums are child diseases, nutrition, vaccination, approaches to children and other. When we analyze the percentages of the messages sent to the sub forums under the children's health, "children's diseases" come first with 45.4 % and the second one is "nutrition" with 25.4%.

**Table: 4.**  
**The Number of Messages Subjects in the Sub-Forums Under the Doctor Forums**

Forum Name	Number of Messages	% Within the Category	Number of Subjects	% Within the Category
Children's Health and Childcare	27.513	80.1	12.082	79.9
Internal Diseases	2.576	7.5	1.094	7.2
Children's Development and Education	1.368	4.0	560	3.7
Mouth and Dental Health	911	2.6	393	2.6
Women's Health, Pregnancy and Birth	1.980	5.8	1.004	6.6
<b>Total</b>	<b>34.348</b>	<b>100</b>	<b>15.133</b>	<b>100</b>

One of the forums used interactively and actively is the doctor forums. When 25 messages in the sub category where the most messages are sent are analyzed, it can be seen that a total of 12.463 messages were sent to the one called children's health under the category of children's health and childcare. When the last 25 messages sent to the sub category called children's health are analyzed it can be seen that mostly questions aimed to obtain medical information are asked to the doctors.

According to the classification made to see on which subjects the last 25 messages are concentrated, 28% are about colds (7 messages), 16% are about urinary tract infections (4 messages), 12% are about diarrhea (3 messages and the other 44% are about blood, sleeping, heart and tonsils (11 messages). It is also possible to determine how often the messages in the forums are read and answered.

In the analysis to determine this, it was seen that the message about urinary tract infection was the most read message. This message was read 146 times (9.6%) and was answered 6 times (14.7%). It can be easily stated that in terms of the qualitative characteristics of the messages sent to the doctor forum, they have the purpose of obtaining information from an expert who is taken as a reference. As an example of these messages the answer given to a message sent by a mother can be analyzed. The mother who is a member of the site asks a question about her daughter's urinary tract infection and gives her daughter's test results for the doctor to respond. The answer given to this question by the doctor is exactly so:

*"Hi,  
There could be various reasons for the discharge. Even if at first there is no infection, an infection may develop afterwards. The test results look normal. Reproduction and urine tests are not always parallel to each other but the colony number of the reproduction is important. Sincerely yours".*

Similarly a message sent by a mother under the subject of urgent and the answer given by the doctor are as follows:

*"Mother:  
My 6 year old daughter got chicken pox. I have premature baby who was born on the 33rd week who is 15 days old now. I am scared that the baby will catch the disease please help me what should I do".*

*Doctor:  
"Hi, If the mother is immune to chicken pox it is not expected that 15 days old baby will catch the disease. The preventive that pass from the mother are effective for about 6 months. If your older child had been immunized she would not have caught the disease at all. Best regards"*

### **Just Us Forums**

There are eight sub forums of the just us forums. When the number and ratio of the messages sent to these sub forums are analyzed, the "games-surveys-quotes" forum comes first with 22.8%, and the last one is the forum called "meetings, mutual aid-consumer corner" with a ratio of 2.6%. In terms of the ratio of the number of subjects, the forum called "the experience pool" comes first with 25.4% (Table 5).

**Table: 5.  
The Number of Messages and Subjects in the Sub-Forums of the Just Us Forums**

Forum Name	Number of Messages	% Within the Category	Number of Messages	% Within the Category
Hello Friends	126.535	9.6	2.680	8.2
Experience Pool	142.027	10.8	8.259	25.4
Travels to the Baby	188.420	14.3	3.180	9.8
By the Fountain	232.164	17.6	8.238	25.2
Us and Our Babies	204.379	15.5	2.792	8.6
Meetings-Mutual Aid-Consumer Corner	34.348	2.6	2.613	8.0
Smell of Food	90.019	6.8	2.051	6.2
Games-Surveys-Quotes	300.592	22.8	2.803	8.6
<b>Total</b>	<b>1.318.484</b>	<b>100</b>	<b>32.616</b>	<b>100</b>

A total of 219.629 messages were sent to the "for fun" forums under the "games-surveys-quotes" category within the just us forums. When 25 messages sent to the said forum were analyzed, it was seen that these messages expressed subjects too varied to be categorized.

For example, one of the members of the site asked "what did you last purchase?" and the answers given were Nescafe, syrup, pajamas etc.

Similarly, when the messages sent to this forum were analyzed it was seen that the members of the site do not only send messages about their babies and children or to have fun, but that they also send messages about current events in Turkey in October 2007. Other than these messages, there are messages containing fun subjects and chitchat like games, questions, and riddles. One message sent by a member is as follows:

*"When the water rises the fish eat the ants  
When the water recedes the ants eat the fish  
No one should rely on the dominance and power they have today  
Because who will eat whom is decided by the water's flow..."*

### **From Me to You Forums**

There are two sub forums of the from me to you forums. When the distribution of the percentages of the messages sent to these sub forums is analyzed it is seen that the forum called "from me to you" comes first (81.1%) (Table: 6).

**Table: 6.**  
**The Number of Messages and Subjects in the Sub-Forums of the From Me to You Forums**

Forum Name	Number of Messages	% Within the Category	Number of Subjects	% Within the Category
From Me to You	14.154	81.1	846	82.7
Special Folders	3.298	18.9	177	17.3
Total	17.452	100	1.023	100

A total of 6.991 messages were sent to the sub forum called "from life" under the from me to you forums. When the last 25 messages sent to this category were analyzed, the most read message (10.242) was the message of a mother whose daughter had died.

In this message which is one of the most read and answered messages the mother wrote the following lines:

*"My princess, my dear daughter my Rana  
I put my longing on the clouds  
I flashed my love with lightning  
I rained my tears with rain drops  
I sent little angels to kiss you  
Did they come?"*

In the messages within this category there are those of death and sadness (24%), happy news (24%), sharing of experience (12%), diseases and help (20%) and other subjects (20%).

### **Top Secret Forums**

Lastly, there are two sub forums under the top secret forums. Of these forums, the ratio of the messages sent to the forum called "openly secret" is 96.5% (Table: 7).

**Table: 7.**  
**The Number of Messages and Subjects in the Sub Forums of the Openly Secret Forum**

Forum Name	Number of Messages	% Within the Category	Number of Subjects	% Within the Category
Openly Secret	37.032	96.5	1.334	77.2
From the Heart Forums	1.324	3.5	393	22.8
<b>Total</b>	<b>38.356</b>	<b>100</b>	<b>1.727</b>	<b>100</b>

The most messages were sent (36.816) to the forum "about life" under the sub-forum called "openly secret" which is located under the top secret forums. As it can be understood from the name of this forum, members share their special and private information with each other.

When the last 25 messages sent to this forum are analyzed it can be seen that members have sent messages on various subjects from divorce to contraception methods. Since each of the subjects within this form has a different characteristic, they can be said to be very difficult to categorize. The following message contains the sharing of a private problem by a female member with other women:

*"Hello ladies  
 In my problem the jealousy and grumpiness of my husband is very unfavorable to me. For example when I tell him should we go out honey he says what do you want to do outside sit where you are. He breaks my heart... I wonder did he come down from a mountain or something? Also he does it when we're with other people..."*

When the ratio of the number of times the last 25 messages were read and answered is analyzed, the high reading ratio (34.7%) and the high response ratio (23.3%) of the message written by the mother who had lost her child are noticeable. While the message about bronchitis under the doctors' forums which have the purpose of obtaining information was read with a ratio of 9.6%, its response ratio (14.7%) is higher. Ratios about other subjects can be seen in Table: 8.

**Table: 8.**  
**The Most Read and Answered Messages and Their Themes**

Forums Message Themes	Reading %	Response %
Doctors Forums <i>Bronchiti</i>	9.6	14.7
Just Us Forums <i>Information on a Special Site</i>	16.5	14.4
From Me to You Forums <i>The Mother Who Had Lost Her Baby</i>	34.7	23.3
Top Secret Forums <i>About the Member With a Malign Purpose</i>	14.8	14.8

## **DISCUSSION AND IMPLICATIONS**

In the evaluation carried out within the context of the case study being discussed, it is seen that many people use virtual communities extensively to obtain health information, share their experiences and to complete their socialization process. Even though virtual communities about health are established basically to obtain health information, the members of virtual communities used these communities not only to obtain information about health, but also as a part of the socialization process.

It is possible to obtain information in two ways within the context of health-based information. The first of these is to make use of information put on the site and on the database, the other is to interactively ask for the opinion of the experts of the site or community. In the case study examined, it was seen that both methods were used extensively.

Within the context of the analyzed site and in terms of virtual communities related to health in general, it can be stated that the members not only make use of the information given by the site about the general subject it covers, but also the participation of other members to obtain support about private subjects. When the site whose content analysis is made is examined, it was seen that more than obtaining information about health, the members share private subjects and subjects about shopping with each other.

In this sense, virtual communities are seen to reflect an important part of real life. These situations that contradict the idea that the internet isolates people can be evaluated as proof that this tool can play an active role in patients finding social support.

In health based virtual communities most marketing practices (sponsorships, banner ads, e-services, promotions) should be carried out in a conscious manner. One of the most important things to be considered when doing so is the appropriate segmentation of the target audience. For this purpose, a database on the users of the site should be developed and the questions asked during registration should be designed to put forth the profile of the member. Also, special services for members can be offered by making careful personalization arising especially from the characteristics of health services. With all these marketing practices, professionals working in healthcare can use virtual communities as important tools for providing services.

## **LIMITATIONS AND FUTURE RESEARCH**

The number of messages and subjects analyzed in the forums within the context of a thematic analysis are as of the date of this study. The virtual community dealt with in the context of this study is not enough to make a generalization. Extending the scope of this study to include sites containing similar categories would yield more generalized and useful results.

To supplement this thematic study, carrying out ethnographic studies on the messages in the future would yield more useful results. Ethnographic studies connected with the theoretical framework and on themes that will be determined in the context of the subject of analysis would present more detailed information about virtual communities both sociologically and as consumer groups. Comparative cultural studies would also give profound insights about groups that use virtual communities.

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