

## How Does Interactive Social Support in Healthcare Communities Promote Customer Well-Being?

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**Abstract**—This study developed the kinds of social support patients actually obtain on Internet. With data collected from published posts in online health care communities, the authors identify three kinds of support (emotional support, informational support, and companionship) that underlie online social support in health care. Theoretically, the authors constructed a conceptual model of the relationship between online social support and individual's quality of life. The model illustrated that informational, emotional and companionship support affect patients' quality of life in descending order of importance. In particular, online social support as a whole should be encouraged and received by users in online health care communities as they tend to be associated with higher patient's quality of life.

**Keywords**—online; quality of life; social support; healthcare

### I. INTRODUCTION

China has made great achievements in many aspects including health care system reform. There have been problems, however, in the past economic development, the major problems are inadequate state investment, imbalance in the distribution of medical resources, and variant quality of medical service. Those have become hot issues in China's medical service sector and even the whole nation. The existing health care service cannot fundamentally meet people's needs, and even disputes often occur due to the poor quality of health care service. In short, there are prominent contradictions between contemporary Chinese health care level and economic and social development, and between Chinese health care level and satisfying the needs of people's health management.

In China today, cardiopathy, cancer, cerebra vessels disease and other chronic diseases present the trend of multiple and high incidence. These diseases present the characteristics of long treatment cycle, slow effect, and long-term medication therapy, resulting in patients' negative emotions of varying degrees, and even losing confidence and

courage in future life. In addition, a number of patients with AIDS, hepatitis B, tuberculosis, leprosy and other infectious diseases cannot be adequately treated subject to unsatisfactory health care conditions and technical means. Moreover, patients with infectious diseases in reality are rejected and excluded by the society for different reasons, in different ways, to varying degrees because of prejudice and misunderstanding.

Patients who suffered from social exclusion may have negative feelings and behavior; however, it is one of the basic human needs to maintain a stable and good relationship with others, since Chinese culture emphasizes interdependence more than western culture. Psychological needs of the patients, however, cannot be satisfied due to social exclusion of the public in reality, Internet has become one of significant platforms for them to get social support. Internet will not substitute other communication tools but in combination of them and extends the scope of social networks [1]. Rheingold explored the network communication, and found that social coalition online might establish feelings among people, which formed the interpersonal relationship network in the virtual space [2].

In recent years, with the rapid development of Internet in China, many patients have established their own online communities, which are mainly used to ask for social support. Particularly, Internet has been changing the way people learn about health and illness [3]. Internet presents characteristics as convenience, accessibility, anonymity, without interference, and interaction, so virtual community has great potential as a safer platform for disease sufferers to engage in nonthreatening and supportive communication [4]. Patients who meet online could develop friendly and comforting relations and provide each other with various forms of social support. The resulting trust generally increases an individual's willingness to disclose details of his or her disease and experiences [5].

This article is organized as follows: First, we review theory relevant to the social support. Next, we discuss the

findings of our empirical study of online social support by employing the method of content analysis and initially understand quality of life as the outcome of online social support. Finally, we then develop a model to in-depth describe interrelations between online social support and quality of life.

## II. THEORETICAL REVIEW AND HYPOTHESIS

### A. Social Support

The influence of social relations on well-being has long been a subject of study across disciplines [6]. Specifically in health care sector, social support can reduce patients' depression, helplessness, anxiety and negative thoughts about themselves and further influence patient well-being and life satisfaction, since patient health conditions are closely related to emotions [7-14]. A direct positive relationship between social support and people's health has been recognized in the research history. There are published reviews on social support in coronary heart disease, stroke, cancer or diabetes, spinal cord injury [15-19]. From conceptual aspect, explained that the belief of supportive interactions among people is protective against the health consequences of life stress in his well-known Presidential Address and resulting article [20]. Following Cobb's (1976) findings, researchers across disciplines have been studying the social support of individuals from different perspectives.

### B. Quality of Life

In recent years, health-related quality of life is viewed as a vital indicator of health care service performance not only by service marketers but also by medical experts. First, service marketers find that quality of life as a social marketing concept is important to business success [21]. In recent years, service performance is increasingly being measured in terms of social as well as financial outcomes [22-24]. Quality of life does not compete with the more traditional financial and growth-oriented objectives of marketing; rather, it enhances our understanding of the potential of marketing activities. In this case, such understanding is through increased knowledge of the impact that service provision has on customer well-being and, by extension, on societal well-being. Marketers can, therefore, positively influence the lives of consumers through the quality-of-life concept [25-26]. Second, quality of life is an important aspect of medical experts' approach to treatment. The European Organization for Research and Treatment of Cancer (EORTC) stated its aim as "to conduct, develop, coordinate, and stimulate laboratory and clinical research in Europe to improve the management of cancer and related problems by increasing not only the survival rate, but also patients' quality of life." Therefore, medical experts developed different versions of quality life scales to measure health care service performance.

In service literatures, McGill version of quality of life attracted scholar's attention due to its parsimony and convenience. Comparing with SF-36's eight dimensions, McGill version of quality of life only comprises four domains: physical, psychological, existential, and support

[27]. The physical domain concerns the individual's most problematic physical symptoms, such as fatigue, pain, and weakness. The psychological domain concerns feelings regarding being depressed, nervous or worried, sadness, and fear of the future. The existential domain concerns an individual's belief about their life, including the belief that life is meaningful and worthwhile, and that goals are achievable, how they feel about themselves, and whether they have a sense of control over life. Support is concerned about feeling supported and cared for. This study selects McGill version of quality of life as the final indicator to measure online social support service performance. However, support dimension is erased from the original scale in present study since it is conceptually close to social support, the antecedent which we are interested in. According to the analysis above, thus we propose the following hypothesis:

H1a: Emotional social support will positively influence patient's physical quality of life.

H1b: Emotional social support will positively influence patient's psychological quality of life.

H1c: Emotional social support will positively influence patient's existential quality of life.

H2a: Informational social support will positively influence patient's physical quality of life.

H2b: Informational social support will positively influence patient's psychological quality of life.

H2c: Informational social support will positively influence patient's existential quality of life.

H3a: Companionship social support will positively influence patient's physical quality of life.

H3b: Companionship social support will positively influence patient's psychological quality of life.

H3c: Companionship social support will positively influence patient's existential quality of life.

## III. METHODOLOGIES

To address the research questions, we investigated a large number of online health care communities on the Internet. Hepatitis B is selected as the research setting due to the following reasons: (1) Hepatitis B is a common pandemic infectious disease in China. According to the statistics of World Health Organization, there are about 350 million hepatitis B virus (HBV) carriers all over the world, and that Mainland China is a high incidence area of HBV infection. The survey in the scope of China also demonstrated that about 60% of the total population had infected with HBV, of which 80% are generally asymptomatic with normal liver function. Therefore, all the people with HBV but no symptoms could only be called the carriers, who perhaps account for nearly 93 million in Mainland China, namely one carrier among every 14 Chinese people [28]; (2) HBV patients also face social discrimination and they had to tackle a broad range of social exclusions in employment, day-to-day living, romantic relations and other aspects of life and work. HBV patients have become typical representatives of vulnerable members because of the disease; (3) Anti-Hepatitis B Forum is one of the most popular and most active online forums as it has the largest number of members and published posts among all Chinese online health care

communities (see Table 2). Consequently, in order to investigate online social support among Chinese patients, it's appropriate to take Anti-Hepatitis B Forum as the research setting.

First of all, we captured posts published by online health care community members in the relevant sectors of Anti-Hepatitis B Forum as samples. Based on the statistics concluded by Anti-Hepatitis B Forum itself, there were over 65,000 themes including numerous posts in total shown in more than 1,300 website pages with an average of around 50 themes in each page. Hereby, we adopt the method of equidistant sample to collect data, namely from the first page to the end, the total of 25 pages including 1,400 themes as samples were extracted at 50-page intervals. Finally, 1,368 themes were finally obtained with 32 invalid themes eliminated.

Then first, four authors read the posts independently at least 2 times and coded all data into a number of categories according to the traditional social support theoretical literatures [29-30]. These categories are (1) emotional support, (2) informational support and (3) companionship (Tichon and Shapiro 2003). When there was disagreement among coders, discussion took place until agreement was reached. It needs specially to note that although instrumental support as provision of material or financial aid, or services was identified one component of social support discussed in the traditional literatures [31-32], it is debatable whether it should be measured in research that focuses on online communities (Bambina 2007) and there are no examples available of this type from our online samples, as it requires individual to reveal his or her real-life identity. Therefore, four authors unanimously agree to eliminate this domain from the categories of online social support in our research.

Our second task was to quantitatively analyze the relationship between online social support categorical variables and patients' quality of life. The study design employed an online survey approach that collected data from Anti-Hepatitis B Forum. We first contacted the forum administrators to get their help to publish a questionnaire link on the top of the website pages to invite members to participate our survey. To encourage more people to fill out the questionnaire, an online lottery was offered as gift to every participant. Finally, a sample of 265 HBV patients or members from Anti-Hepatitis B Forum was randomly selected over three months to participate in the study. In the questionnaire, two separate scales were used to measure each of the four dimensions of online social support and each of the three dimensions of quality of life respectively. The online social support scale with 18 items was constructed through combining two scales developed by Schwarzer and Schulz and Liang and Wei [33]. The items were modified to fit the specific research context and the purpose of measuring Chinese people's online social support actions in health care communities. Moreover, the quality of life items were adapted from McGill Quality of Life Questionnaire, which consists of 14 items constructing physical, psychological, and existential subscales, and originally has been developed to assess QOL of terminal cancer patients.

#### IV. ANALYSES AND RESULTS

Analysis was based on a partial disaggregation approach, in which scale items were combined into composites to reduce random error, while retaining the multiple indicator approach of structural equation modeling [34]. Where possible, at least three composite indicators were created per latent construct, as is the recommended approach in the literature (e.g., Hau and Marsh 2004). Fit for the structural model was good ( $\chi^2/df=2.183$ ,  $p<.00$ ,  $RMR=0.038$ ,  $CFI=0.947$ ,  $RMSEA=0.048$ ) (see Table 1).

As shown in Table 2, the results indicate that emotional support had a moderate to large influence on physical, psychological, and existential quality of life ( $\beta=0.212$ ,  $\beta=0.335$ ,  $\beta=0.274$ , respectively). Informational support was the dominant direct antecedents of physical, psychological, and existential quality of life ( $\beta=0.569$ ,  $\beta=0.258$ ,  $\beta=0.175$ , respectively). Additionally, companionship also had a large influence on physical, psychological, and existential quality of life ( $\beta=0.268$ ,  $\beta=0.357$ ,  $\beta=0.329$ , respectively). Thus, generally as we supposed, online social support impacted three dimensions of quality of life in moderate to large degree, and all 9 hypothesis have been supported statistically.

TABLE I. MEASUREMENT MODEL RESULTS

$\chi^2/df$	p	RMR	GFI	NFI	IFI	CFI	RMSEA
2.183	0.000	0.038	0.925	0.947	0.949	0.947	0.048

TABLE II. STRUCTURAL PATH ESTIMATES

Relationship	$\beta$	T-value
Emotional support-Physical QOL	0.212	4.345
Emotional support-Psychological QOL	0.335	8.358
Emotional support-Existential QOL	0.274	5.620
Informational support-Physical QOL	0.569	10.256
Informational support-Psychological QOL	0.258	4.386
Informational support-Existential QOL	0.175	3.267
Companionship-Physical QOL	0.268	5.978
Companionship-Psychological QOL	0.357	7.286
Companionship-Existential QOL	0.329	7.107

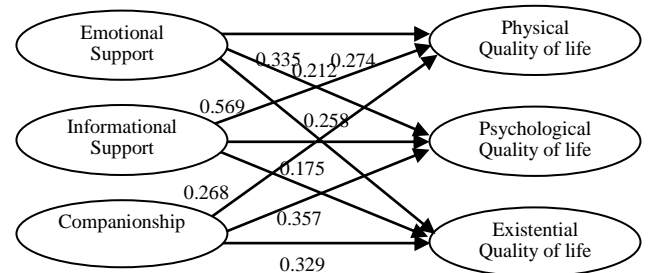


Figure 1. Path Model

#### V. DISCUSSIONS

On the basis of teasing apart online social support categories, we explored their links to patients' quality of life. For instance, we found evidence suggesting high quality of life tended to be associated with individuals who received

different kinds of social support on the health care communities; however, the positive influence impacted by online social support on quality of life varies in degree and frequency across different subcategories. To summarize, the results of the empirical study indicated that the informational support, emotional support and companionship affect patients' quality of life in order of importance respectively. Web administrators should adjust and redesign if necessary the scopes and layouts of online health care communities in order to meet patients' needs to seek assistance, reconstruct interpersonal intercourse, and improve personal health state physically and psychologically. Such conclusions are critical to impelling reform and perfection of Chinese health care system, and producing deep and even new knowledge in health care service research and ultimately to the advancement of service science.

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