

# A Comparative Study of Online Suicide-Related Information in Chinese and English

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**Objective:** This study analyzed the online suicide-related contents of Chinese-language Web sites compared with contents observed in an American study that considered English-language Web sites, so as to examine what differences there might be between Chinese online information and its English counterpart.

**Method:** Online contents were generated by entering 4 suicide-related search queries into 5 popular search engines (Google China, Yahoo! China, Live search, Baidu, and Sogou) in mainland China in September 2008. The search queries were simplified Chinese translations of terms used in a 2008 American study that used similar methodology: *Zi Sha* (suicide), *Ru He Zi Sha* (how to commit suicide), *Zen Yang Zi Sha* (how to kill yourself), and *Zi Sha Fang Fa* (suicide method). Three coders from mainland China reviewed the first 3 pages of results from each search and rated their contents in terms of the attitude toward suicide reflected therein (pro-suicide, anti-suicide, neutral, not a suicide site, or error [page would not load]). Other characteristics of the Web sites were analyzed. The results were then compared with those of the earlier study of English-language Web sites.

**Results:** Of the Chinese Web sites, a smaller proportion carried pro-suicide information compared with the corresponding results obtained from the study of English-language Web sites (4.2% vs 11.7%), whereas the proportion of anti-suicide Web sites in both languages was almost the same (32.3% vs 34.9%). Anti-suicide Web sites in Chinese, however, provided less information on seeking help, and there were fewer government or professional mental health Web sites in Chinese (1.3% vs 13.3%). The pro-suicide information on Chinese Web sites was mostly found in personal blogs or online forums.

**Conclusion:** Psychiatrists and public health researchers dealing with suicide prevention in China should be aware of the differences between online suicide-related information in the Chinese and English languages.

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Publication of suicide notes and methods online and other Internet-related suicide cases have been reported in the People's Republic of China. The most recent case was a Sichuan earthquake survivor who hanged himself after publishing a suicide note on his blog in the early morning of April 20, 2009.<sup>1</sup>

Suicide is the fifth leading cause of death in China<sup>2</sup> and the leading cause of death of Chinese people between the ages of 15 and 34 years,<sup>3</sup> who constitute the majority of Internet users in China.<sup>4,5</sup> During the last decade, China has experienced rapid development in the Internet market and now has the largest number of users in the world. The Internet penetration rate in China reached 22.6% by the end of 2008 and is higher than the global average rate of 21.9%.<sup>4</sup> Due to rapid urbanization in China and the ambitious target set by the government, that half of the national population (approximately 650 million people) will live in urban regions by 2010,<sup>6</sup> the increasing trend of Internet penetration is expected to continue.

Researchers in the United States,<sup>7</sup> Britain,<sup>8</sup> and Sweden<sup>9</sup> have employed a similar research strategy to examine suicide-related information online, specifically, searching suicide-related information through popular search engines in their countries and then conducting content analysis. A significant portion of the online contents has been found to contain messages encouraging people to commit suicide.

So far, however, no study has examined what online suicide-related information the huge number of Chinese Internet users are able to access. Therefore, whether the results obtained from Western studies are applicable to China remains unclear.

There are 2 main factors that may lead to content variation between Chinese Web sites and those from English-language countries. The first is government censorship of the Internet.<sup>10</sup> Every Internet service provider (ISP) or Internet content provider (ICP) in China must apply for a government license before its launch, and the government will continuously monitor the contents of the Web site in order to censor illegal or inappropriate information. Recently, the Chinese government has strengthened its Internet censorship by encouraging Internet users to report illegal and harmful information.<sup>11</sup>

The second factor is Chinese culture, especially the belief that suicide is more of a social or family problem than a health problem.<sup>12,13</sup> Women's suicidal behavior, for example, is often interpreted as a symptom of individual psychopathology in the United States, whereas it is often considered a normal response to serious family conflict and/or abuse in China.<sup>14</sup>

Chinese culture is complicated and continuously evolving, but Confucianism, Buddhism, and Taoism can be seen to form certain elements of traditional Chinese cultural values. Confucianism discourages people from giving up their lives to show their fortitude, but it also suggests that people should die with dignity for those whom they serve or for what they believe in.<sup>15</sup> Buddhism and Taoism also hold a flexible attitude toward suicide and do not consider it to be as sinful as Christianity does.<sup>16</sup> Since the establishment of the People's Republic of China in 1949, Chinese views of suicide have altered in parallel with a series of political campaigns. For example, suicide was stated to be a betrayal of the nation and the Communist Party during the Cultural Revolution.<sup>17</sup> Since 1978, when the Reform and Opening-up era began, romanticized ideas of love and affection conveyed by the mass media, especially on television, have strengthened people's sympathy for and acceptance of suicides related to affection issues.<sup>18</sup> Although media coverage of the suicides of government officers is still politically sensitive in China, news of the suicides of pop stars like Leslie Cheung (a male pop singer and actor from Hong Kong) and Lee Eun-ju (a female actress from South Korea)<sup>19</sup> is featured prominently on Web sites. These media stories on the suicides of entertainment celebrities are often romanticized and sensationalized and could lead people with similar experiences or demographic backgrounds to attempt suicide.<sup>19,20</sup>

Given this Chinese context, the objectives of this study were to examine the attitudes toward suicide that are portrayed online in mainland China and to consider whether these are different from those presented on English-language Web sites.

## METHOD

To allow comparison with previous findings, this study adopted a similar methodology to that used by Recupero et al<sup>7</sup> ("Recupero" hereafter). Recupero searched the Web by inputting 4 search queries—*suicide*, *how to commit suicide*, *how to kill yourself*, and *suicide methods*—into 5 popular search engines in the United States, located the suicide-related Web sites from the search results, and analyzed their content.

In the present study, the English search queries were translated into simplified Chinese as *Zi Sha* (suicide), *Ru He Zi Sha* (how to commit suicide), *Zen Yang Zi Sha* (how to kill yourself), and *Zi Sha Fang Fa* (suicide method). We chose 5 popular search engines in mainland China: Google China (<http://www.google.cn/>), a version of Google for mainland China), Yahoo! China (<http://www.yahoo.cn/>), a version of Yahoo! for mainland China), Live search (<http://www.live.com/?mkt=zh-cn>), Microsoft's default search engine for MSN China), and 2 local search engines, Baidu (<http://www.baidu.com>) and Sogou (<http://www.sogou.com>). Baidu, Google China, Sogou, and Yahoo! China are ranked as the 4 most popular search engines in China.<sup>21</sup>

After inputting the 4 queries into the 5 search engines during September 24–25, 2008, in Shenzhen, People's Republic of China, the first author collected the first 3 pages

of search results, or "hits," for each search term. The choice of using the first 3 pages of search results was made on the basis of a previous finding that Internet users appear to have a low tolerance for wading through more than 3 pages of results.<sup>22</sup> Sponsored links on the first 3 pages were also collected in the same manner as in Recupero.

In October 2008, 3 local Chinese coders visited each hit separately and assigned each a code from 5 options: PRO (pro-suicide), for sites encouraging suicide; ANTI (anti-suicide), for sites discouraging suicide or preventing suicide; NEU (suicide-neutral), for sites that contained a balance of both anti-suicide and pro-suicide content, or in which bias was unclear; NSS (not a suicide site), for sites that were not really about suicide (eg, using "suicide" out of context, like "political suicide," "smoking is a way of killing yourself slowly"); and ERR (error), for sites that could not be loaded. Sites that contained both pro-suicide and anti-suicide messages were rated as neutral, according to the protocol used by Recupero. If 2 or 3 coders gave the same code for a hit, the majority decision was final. Otherwise, the coders discussed with each other in order to reach consensus.

The first author, located in Hong Kong, also collected additional characteristics from these identified Web pages. Recupero summarized 19 characteristics of the English Web sites, which were further categorized by the present study into 2 categories, "details about Web site contents" and "details about Web site types," in order to conduct further analyses.

The "details about Web site contents" category relates to the content that a Web page provides, including the following 15 characteristics summarized by Recupero: provides links, phone numbers, or other contact information for crisis-intervention or suicide-prevention resources; a crisis-intervention or suicide-prevention site; professional or government mental health site or mental health area of a health site; contains or links to information about a celebrity's suicide or suicide attempt; provides detailed descriptions of suicide methods or how to commit suicide recipes or instructions; deals with suicide humorously or sarcastically; contains or links to suicide statistics; posts or links to images of completed or attempted suicides; contains or links to an interactive self-quiz (eg, "Are you suicidal? Take this quiz to find out"); markets something that pertains to suicide or mental health (eg, self-help books, e-therapy, books about suicide methods; exclude novels, CDs, movies, etc); contains, posts, or links to actual suicide notes from known completed or attempted suicides; contains academic research on suicide; religious proselytizing site; links to online pharmacy/pharmacies or markets drugs or nutraceuticals; and provides links to pro-suicide or how-to suicide resources, such as other pro-suicide or how-to Web sites, books, or videos.

The "details about Web site types" category refers to the type of Web site, including 4 characteristics that Recupero summarized: news article about suicide or related news items (exclude sites that merely link to news stories), contains a suicide-related message board or blog, has a suicide-related newsgroup or archived postings from a suicide-related

newsgroup (or links to these), and is an individual's homepage or layperson's Web page about suicide. For further analysis, we also made use of the concept of Web 2.0<sup>23</sup> to classify all types of Web sites that permit users to generate contents interactively; for example, blogs, online forums, video-sharing sites, wikis, and original fiction-sharing sites were classified as Web 2.0 sites. Traditional Web sites that do not permit interactive activities were categorized as Web 1.0 sites. For those search results that were linked to articles, posts, or videos tagged with "suicide" within a Web site or an online forum, we rated the Web sites by which these materials were hosted. Following Recupero, we did not review the characteristics of the ERR sites.

Ethical approval for this study was obtained from the Human Research Ethics Committee for Non-Clinical Faculties of the University of Hong Kong.

All data were analyzed using SPSS 13.0 (SPSS Inc, Chicago, Illinois). The results of this study were compared with those reported in Recupero, as well as the UK study conducted by Biddle and colleagues<sup>8</sup> ("Biddle" hereafter). These 2 studies from English-language countries have only slight differences in Web search procedures and the coding protocol. If we aggregate separate items from the Biddle study such as "pro-suicide; encourage, promote, or facilitate" and "portray suicide in fashionable terms" as pro-suicide sites and combine "against suicide sites," "prevention or support sites," and "academic or policy sites" as anti-suicide sites, then both of the Western studies show that more than 30% of their total search results are anti-suicide Web sites, and around 9% of their search results are pro-suicide sites. In addition, both studies found that less than a tenth of their search results came from chat rooms, online forums, or discussion boards.

## RESULTS

By entering 4 search queries into each of the 5 search engines, 600 hits in total were collected from the first 3 pages of results (4 queries × 5 engines × 3 pages × 10 results per page = 600 hits). We also found 22 additional hits in the first 3 pages of our search results, including 15 sponsored links, 4 sublinks of the regular search results from Google China, and 3 blogs from Yahoo! China. Recupero collected 616 hits in total, including sponsored links.

When repeat hits (those with exactly the same URL) were not counted, 472 unique URLs (75.9%) remained, whereas Recupero reported the percentage of unique URLs out of the total hits was 60.6% (373/616).

### Attitude Toward Suicide

The 3 Chinese coders agreed on 96.8% of the coding for unique URLs. Recupero did not report the percentage of coder agreement. As shown in Table 1, there were almost 3 times fewer pro-suicide Chinese-language Web sites (4.2%) in percentage terms than the number reported by Recupero (11.7%) and more than 2 times fewer in percentage terms than the number reported by Biddle (9%).

**Table 1. Hits for Each Classification Code of Web Site Content, as a Percentage of Total Hits, in the Present Study Compared With the Recupero et al<sup>7</sup> Study**

Code	Present Study (N = 622)	Recupero et al (N = 616)
ANTI (anti-suicide)	32.3	34.9
NEU (suicide-neutral)	31.4	29.2
NSS (not a suicide site)	23.5	16.1
PRO (pro-suicide)	4.2	11.7
ERR (error)	8.7	8.1

However, the proportion of anti-suicide Chinese-language Web sites (32.3%) was very close to the figure reported by Recupero (34.9%) and also close to the one reported by Biddle (40%). Accordingly, there were slightly more suicide-neutral Chinese-language sites, of which 41.5% (81/195) were collected from online forums. The proportion of "not a suicide site" (NSS) Chinese Web sites was higher than that found in Recupero. Most of the NSS Chinese sites utilized the search terms in relation to jokes or used the word *suicide* out of context, for example, "Smoking is a way to kill oneself slowly." All sponsored links were found to be online advertisements relating to depression treatments or bargain sales, for example, offering discounted "suicide prices," and thus were all rated as NSS.

Of the 45 unique Chinese-language URLs that were rated as ERR when access from mainland China was attempted, we found that 4 of the Web sites were actually accessible through the Hong Kong service provider. One of them was a professional suicide-prevention Web site sponsored by the Taiwanese government. Another 2 were Buddhist Web sites from Taiwan that were rated as anti-suicide. The last one was a Hong Kong-based personal blog in which pro-suicide content could be found. Another 12 ERR sites were online forums that were accessible but showed a statement on the page that "the post was deleted by the administrator." The remaining 29 ERR sites could not be accessed in Hong Kong, either.

### Details About Web Site Contents

Further analysis shows that most of the anti-suicide sites carried expressions of anti-suicide attitudes from a Confucian point of view, that is, the belief that an individual should not hurt their body because it was given to them by their parents. Only a few sites provided information from professional psychiatrists.

There were about 5 times fewer Chinese-language Web sites (in percentage terms) providing contact information for suicide-prevention or crisis-intervention resources (6.1% of total unique URLs, 7.9% of total hits) than those reported in Recupero (29.2% of total unique URLs, 38.6% of total hits). Of the total 622 Chinese Web site hits, only 23 were classified as suicide-prevention or crisis-intervention sites (3.7% of the Chinese sites as against 12.7% in Recupero). A further 8 were categorized as professional or government mental health sites (1.3% as against 13.3% in Recupero), 1 of which was a newspaper article considering how to report suicides in the mass media. The proportion of academic

research on suicide featured in Chinese Web sites (1.3% of total unique URLs, 1.4% of total hits) was 4 to 5 times fewer, and the proportion of suicide statistics in Chinese Web sites (9.1% of total unique URLs, 11.9% of total hits) was about half of the findings of Recupero (21.4% of total unique URLs, 23.7% of total hits). The contents of the academic research and statistics in Chinese were often duplicated.

Chinese sites featuring religious proselytizing were rare (0.6% of total unique URLs, 0.8% of total hits) compared to their counterparts in Recupero (5.6% of total unique URLs, 7.1% of total hits). Interestingly, Chinese sites containing or linking to an interactive self-assessment of suicidal risk (eg, "Are you suicidal? Take the quiz to find out") were seen more often than in Recupero (1.7% of total unique Chinese URLs and 4.0% of total Chinese hits compared to 1.1% of total unique URLs and 0.8% of total hits in Recupero).

The percentage of Chinese Web sites that presented suicide in a humorous tone (14.6% of total unique URLs, 17.4% of total hits) was almost double the number found in Recupero (8.8 of total unique URLs, 8.0% of total hits). *The Book of Bunny Suicides* (a series of cartoons showing 1 or more white rabbits trying to end their lives in various bizarre ways) and Chinese versions were widespread on the Chinese Web sites. While the original version of *The Book of Bunny Suicides* portrays suicide in many ridiculous and fantastic ways—such as a bunny hiding in a toaster or sunning itself under a magnifying glass—the Chinese version involves more real social problems, like poisoned food and pirated DVDs, as materials to satirize reality.

At the same time, most of the pro-suicide Chinese Web sites expressed solely an attitude toward encouraging others to die, but did not provide detailed suicide methods. Among the 622 total hits, only 54 hits mentioned suicide methods, and only 12 hits (1.9%) provided detailed descriptions of suicide methods. In contrast, Recupero found 102 hits (16.6% of the total 612 hits) that provided detailed description of suicide methods. Very few Chinese Web sites (0.4% of total unique URLs, 0.5% of total hits) provided pharmaceutical information, although the proportion of this kind of site in Recupero was also low (2.7% of total unique URLs, 1.8% of total hits). No Chinese Web sites linked to other pro-suicide Web sites, compared to 15.8% of total unique URLs and 17.5% of total hits in Recupero.

Comparison of Chinese Web sites to their English counterparts revealed that there were fewer suicide notes (2.1% of total unique Chinese URLs and 2.3% of total Chinese hits, compared to 4.6% of total unique URLs and 7.6% of total hits in Recupero) and images of suicide victims (3.4% of total unique Chinese URLs and 5.8% of total Chinese hits, as against 5.9% of unique URLs and 10.4% of total hits in Recupero). However, some of these suicide notes and images were found on suicide prevention Web sites, including the official site of the Nanjing Volunteers Association and Nanjing Volunteer Rescue Center for Psychological Crisis Intervention, which had the highest number of repeat hits. Notably, the number of Chinese sites relating to the suicide or suicide attempt of a celebrity (10.4% of total unique URLs,

11.3% of total hits) was much higher than in Recupero (2.4% of total unique URLs, 4.4% of total hits).

### Details of the Types of the Web Sites

Classification of the types of Web sites revealed that 47.0% (292/622) of the total hits and 46.8% (221/472) of total unique Chinese-language URLs were Web 2.0 sites. The proportion of blogs and message boards in Chinese (13.8% of total unique URLs, 14.8% of total hits) was more or less the same as the one reported in Recupero (13.4% of total unique URLs, 9.9% of total hits), while the proportion of individual Web sites in Chinese (0.2% of total unique URLs, 0.8% of total hits) was smaller than that found by Recupero (5.1% of total unique URLs, 7.3% of total hits). In fact, there were only 5 individual Chinese Web sites found with unique URLs, of which 4 were anti-suicide and 1 was pro-euthanasia.

The percentage of the news articles about suicide or related items was 3 times higher in Chinese sites (19.7% of total unique URLs, 17.5% of total hits) than that in Recupero (6.2% of total unique URLs, 4.9% of total hits). Many news articles in Chinese were written about the suicides or attempted suicides of celebrities, and particularly about those of entertainers.

Fewer suicide-related newsgroups were found in the Chinese language (0.2% of total unique URLs, 0.8% of total hits) than were found by Recupero (5.1% of total unique URLs, 7.3% of total hits). This may be because newsgroups are not particularly popular in China.

It is notable that the majority of pro-suicide Chinese Web sites (92.3%, 24/26) were personal blogs or online forums. Of the Chinese Web sites containing detailed suicide methods, 91.7% (11/12) were online forums. Of the total 622 hits, 7 were online posts in which instant messaging QQ numbers (QQ is a popular instant messaging software in China) were left as a contact number to recruit people to join suicide groups (this represented 5 of the 478 unique URLs).

## DISCUSSION

The major findings of this study of Chinese Web sites are that a smaller proportion of sites conveyed a pro-suicide attitude and fewer sites contained professional suicide prevention information when compared with observations in both American and British studies.

### Why Is Pro-Suicide Information Spread Online in China?

The relatively small amount of pro-suicide information available online in China may be encouraging to many clinicians and suicide prevention practitioners. However, this condition might be attributable to the strict censorship of the Internet by the Chinese government.

Censorship in China is evidenced by the fact that some Web sites that were not accessible in mainland China were accessible from Hong Kong. Moreover, some suicide-related online posts were reportedly deleted by the administrators of online forums, which suggests self-censorship by Internet content providers.

Despite these observations, the exact reasons for censoring these Web sites and posts are not clear. The Chinese government has claimed to filter harmful or inappropriate online information in the name of the public interest.<sup>11</sup> Whether or not a message is categorized as inappropriate information is wholly determined by the government, and their decision-making is not transparent. So far, only 1 case in which suicide-related information was banned has been documented, in 2005. *The Complete Suicide Manual* was banned both online and offline by the China Press and Publication Administration because the manual “strongly hurts public morality.”<sup>24</sup>

In Western countries, debate on whether suicide-related information could or should be censored has raised ethical, legal, and practical concerns.<sup>25</sup> Government censorship in China is also facing challenges from domestic and overseas groups over freedom of expression.<sup>26</sup> More importantly, studies have shown that censorship such as banning sites, filtering information, or limiting access is, in practice, ineffective,<sup>27,28</sup> which is also partly supported by our research results. Although there are very few pro-suicide Chinese Web sites of a basic, noninteractive type, or so-called Web 1.0 sites, Internet users can still search out pro-suicide information from some Web 2.0 sites. For example, parts of the banned book, *The Complete Suicide Manual*, were still found in 2 online forums among our search results.

These examples suggest that the Chinese government's censorship is neither truly effective nor reliable in terms of suicide prevention. This might be related to the commonly used methods of Internet control in China, such as filtering information by keywords, banning Web sites, and controlling licenses for ISPs and ICPs.<sup>29,30</sup> Web 1.0 sites, whose contents are mainly published by ICPs, are relatively easy for the government to regulate and often pay more attention to self-censorship. Owners of Web 2.0 sites, like the owners of Web 1.0 sites, have to accept the Chinese government's supervision; however, they permit their users to generate content and are less responsible for their users' contributions. Contributors to Web 2.0 sites are less likely to be found by the government because they do not have to register their real name in order to make their contributions.

Meanwhile, religions and beliefs in China are mixed in their attitudes toward suicide. Whereas Christianity is basically anti-suicide, the traditional Chinese cultural belief, primarily a reflection of Confucianism, Buddhism, and Taoism, appears to be more tolerant of suicide. There was also very little suicide-related religious proselytizing evident in Chinese Web sites. This may be due to the fact that public proselytizing is forbidden by law in China.

### **Why Is There Less Professional or Government Suicide Prevention Information in Chinese?**

Most of the health-related government Web sites in China have been criticized for being disorganized, for lacking ways to determine source and last update of information, for lacking information about authorship, for lacking localized and original information, and for being user-unfriendly.<sup>31,32</sup>

In our search results, we did not find any government crisis intervention or suicide-prevention Web sites. Some suicide-prevention information collected from the Chinese anti-suicide Web sites was simple, outdated, and often duplicated, and much of the information was translated from Western studies without mentioning the original sources.

This suggests that the Chinese government is not cognizant of the importance of public health communications and suicide prevention. In 2003, it was reported that a national suicide prevention program would be launched within 2 years,<sup>33</sup> but the program, as yet, has not materialized. Given this background, it is not surprising that suicide prevention services and academic research are insufficient in China.<sup>33</sup> Consequently, government Web sites about suicide prevention and research are almost nonexistent.

In addition, the Chinese government views the media more like a mouthpiece of the ruling party than an open information and communication channel.<sup>34</sup> This could also be a possible explanation for the quality of government health-related Web sites.

### **Why Are There So Many Suicide-Related Jokes and So Much Information Relating to Celebrity Suicides on Chinese Web Sites?**

Our study showed that there was a higher proportion of Web sites containing news of celebrity suicides in Chinese than in English, and, in fact, many anti-suicide Web sites contained news articles that romanticized the suicides of entertainment celebrities.

The situation could be explained by the lack of awareness and academic studies on suicide prevention as discussed in the previous section. For example, the World Health Organization (WHO) guidelines on suicide prevention for media professionals have not yet been introduced to mainland China, and there are no local guidelines. Media effects on imitative suicide have not been widely recognized by people in mainland China. The WHO Web page “How to prevent suicide” in Chinese was found only twice in our search results. However, when we accessed the Web site's internal links, most of the information was indeed in English.

For lay persons, a celebrity's suicide or suicide attempts and humorous cartoons about suicide are definitely eye-catching. Although the suicide stories in Chinese newspapers, compared with their counterparts in Hong Kong and Taiwan, appeared less sensational,<sup>34</sup> Internet users in China can easily access online news about the suicides of Hong Kong or other international celebrities.

In addition, the Chinese government may also indirectly highlight this nonpolitical kind of suicide information. The Chinese government's censorship on the Internet, as we described in the introduction, is primarily concerned with politically sensitive issues rather than entertainment topics. The situation may result in more entertainment information being available online than other information, which means that users are more likely to be exposed to entertainment information than other types of content. According to a survey of Chinese Internet users in 2008,<sup>4</sup> the most often-used

Internet application in China was online music, followed by online news, instant messaging, search engines, online videos, online games, and e-mail. The report indicated that the entertainment function of the Internet plays an important role in Chinese Internet users' cyber-lives.

### Clinical Implications

We suggest that clinicians and suicide prevention practitioners should be aware of the cultural difference in attitudes toward suicide between China and English-language countries that has been identified in this study, particularly when a psychiatric patient's online history is a matter of concern.<sup>35</sup>

We also suggest that frontline mental health professionals not only need to be concerned with the Internet usage history of their patients, for example whether the patients have been exposed to pro-suicide information online or have joined discussion groups relating to suicide, but also need to understand a uniquely Chinese social phenomenon that commonly treats suicide as the result of family or social problems.

The lack of information from professional mental health or suicide prevention organizations in the Chinese cyberspace is worrying. Furthermore, psychiatrists in China can play a more active role in contributing localized and up-to-date professional information to Internet users in China in order to promote public awareness of mental illnesses and counterbalance potentially misleading information.

### Limitations of the Study

Some limitations are worth considering here. As Recupero pointed out, the impact of these Web sites is likely to vary depending on what the users hope to find. This argument is supported by an in-depth interview<sup>27</sup> with a 17-year-old girl in Germany who was admitted to a hospital due to her second parasuicide. The girl had previously spent most of her time going out with her boyfriend and friends and only sometimes went on an online forum where she communicated about suicidal thoughts in an anonymous setting. However, since she had ended her relationship with her boyfriend, she had started searching for suicide methods on the online forum and other Web sites. Later, she attempted suicide by overdosing on drugs provided by an online anonymous provider.

Also, as mentioned by Fu and colleagues,<sup>36</sup> some vulnerable Web users may look for details of a specific suicide method that they have in mind instead of searching on a generic term such as *suicide methods*. In future studies, individuals with suicidal thoughts should be interviewed in order to understand their online information-seeking behavior, which might be different from that of nonsuicidal individuals. Nonetheless, these limitations do not challenge the results of the comparison between the present study and Recupero's study.

There is also a timeframe limitation: Recupero's data were collected in 2006 in the United States, Biddle's data were collected in 2007 in the United Kingdom, and our data were collected in 2008 in the People's Republic of China. Online

information is continuously evolving. The study would be more temporally valid if data could be collected in China at the same time as in English-language countries and then comparisons drawn. Further studies can also track the longitudinal record of online information in China or other countries for detailed analysis.

In addition, some suicide-related information required that users log in for access, for example, to some online forums and closed discussion groups. This study, however, could not capture these Web sites because of technical limitations. Such information is worth studying in the future because people may feel more comfortable talking about suicide in more private online settings in a controlled environment.

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