

Googling Suicide: Surfing for Suicide Information on the Internet

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Objective: This study examined the types of resources a suicidal person might find through search engines on the Internet. We were especially interested in determining the accessibility of potentially harmful resources, such as pro-suicide forums, as such resources have been implicated in completed suicides and are known to exist on the Web.

Method: Using 5 popular search engines (Google, Yahoo!, Ask.com, Lycos, and Dogpile) and 4 suicide-related search terms (*suicide*, *how to commit suicide*, *suicide methods*, and *how to kill yourself*), we collected quantitative and qualitative data about the search results. The searches were conducted in August and September 2006. Several coraters assigned codes and characterizations to the first 30 Web sites per search term combination (and "sponsored links" on those pages), which were then confirmed by consensus ratings. Search results were classified as being pro-suicide, anti-suicide, suicide-neutral, not a suicide site, or error (i.e., page would not load). Additional information was collected to further characterize the nature of the information on these Web sites.

Results: Suicide-neutral and anti-suicide pages occurred most frequently (of 373 unique Web pages, 115 were coded as suicide-neutral, and 109 were anti-suicide). While pro-suicide resources were less frequent (41 Web pages), they were nonetheless easily accessible. Detailed how-to instructions for unusual and lethal suicide methods were likewise easily located through the searches.

Conclusion: Mental health professionals should ask patients about their Internet use. Depressed, suicidal, or potentially suicidal patients who use the Internet may be especially at risk. Clinicians may wish to assist patients in locating helpful, supportive resources online so that patients' Internet use may be more therapeutic than harmful.

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For many lonely or disconnected individuals, the Internet provides respite and relief. Nearly every type of concern has at least 1 support group online where strangers may wander in and quickly find a community of supportive and encouraging cyber-acquaintances. The Internet also offers a plethora of information on all topics: prescription medicines, health and wellness, and even advice and e-therapy services.¹ The Internet also features numerous resources for the suicidal person, ranging broadly from support groups or crisis intervention sites discouraging individuals from committing suicide to pro-suicide groups and how-to suicide instructions that would not otherwise be easily accessible to the average suicidal person.

In 1999, Susan Thompson² wrote of the danger the Internet can pose for suicidal and vulnerable persons. She noted the existence of groups such as the Church of Euthanasia (COE),³ which promotes suicide and provides links to detailed information about suicide methods, and the alt.suicide.holiday newsgroup (ASH), in which members share, among other subjects, thoughts on pros and cons of various suicide methods. In 2001, Prasad and Owens⁴ conducted a World Wide Web search for the term *how to commit suicide* and, despite finding 75 results, found no Web sites providing instructions on how to commit suicide. Criticizing their research, Thompson⁵ argued that harmful information remains easily accessible online, as evidenced by case reports in which individuals have attempted or completed suicide with methods learned online. In December 2005, just a few years later, a search by the authors of the present article for this same term (*how to commit suicide*) on the same Internet search

TAKE-HOME POINTS

- ◆ Web sites advocating suicide and providing how-to suicide instructions are readily accessible through Internet search engines.
- ◆ Helpful, supportive resources for suicidal persons are also readily accessible on the Web.
- ◆ Clinicians can help potentially suicidal patients to connect with helpful, rather than harmful, resources on the Internet.

engine (metacrawler.com) produced such instructions: the seventh “hit” (result) directed the Web surfer to the COE’s lengthy pro-suicide guide, “A Practical Guide to Suicide” (<http://www.satanservice.org/coe/suicide/guide>), which includes detailed instructions for various suicide methods. Articles in recent years have reported stories of individuals who learned suicide methods from this Web site and subsequently completed suicide using instructions downloaded from the site.^{6,7}

Because the Internet has changed dramatically since the time of Prasad and Owens’⁴ study in 2001, an update on cybersuicide information may help physicians and therapists to better understand the potentially harmful information their patients may encounter online. This article provides background information regarding harmful resources for suicidal individuals online and reports the results of a preliminary survey of suicide information accessible through popular Internet search engines.

Suicide Forums

Baume et al.⁸ studied postings by 3 suicidal individuals on the ASH Internet newsgroup in 1996. This newsgroup, whose postings are archived online and accessible through search-engine-based Web surfing, is devoted to the discussion of suicide, including detailed suicide methods. Of the 3 individuals in Baume and colleagues’ study, 2 subsequently completed suicide, and 1 reported back to the group following a failed suicide attempt. These individuals indicated their intentions to kill themselves on the bulletin board through a series of interactive suicide notes. One indicated his ambivalence and concerns about killing himself with a firearm but subsequently did commit suicide with this method after receiving encouragement from other newsgroup members; his death was confirmed by close acquaintances. Another sought advice on a lethal dosage of medication and promised the group, “I’m gonna do it any day now really I promise.” Posts from this person eventually ceased. A third individual narrated a failed suicide attempt, warning other members that his chosen method was not advisable. As Becker and Schmidt⁹ note, pro-suicide attitudes endorsed by groups in chat rooms or online suicide forums may lead vulnerable individuals ambivalent about suicide to decide to attempt suicide rather than to seek help.

Becker and colleagues¹⁰ published a case study of a teenage girl who was treated for a suicide attempt following Internet research and activity concerning suicide. The girl had visited an unmoderated suicide forum online and sought assistance from an unknown stranger in the forum to obtain lethal means to commit suicide. This individual provided her with the diazepam she used for her suicide attempt. In one highly publicized story, a young woman who participated in the ASH newsgroup completed suicide using potassium cyanide, which members of the group allegedly assisted her to obtain.^{11,12} Members had advised her to pose as a jeweler in order to purchase cyanide online, adding other chemicals to her order so as not to arouse suspicion. The ASH group counts at least 14 other suicides of former group members as its “success stories.”¹²

While lonely and disconnected persons may find that support groups help them to seek therapeutic interventions and to find help for their struggles, others may surf onto pro-suicide or “pro-choice” suicide forums that not only avoid discouraging them from suicide, but sometimes go so far as to provide them with step-by-step suicide instructions or with the necessary means and encouragement to carry out a suicide attempt. Becker and colleagues¹³ found that many of the users of suicide forums and suicide chat rooms are adolescents.

In addition to generally pro-suicide forums online, Web surfers may also find Web sites and discussion forums for advocacy groups supporting physician-assisted suicide or voluntary euthanasia for individuals with terminal illness or other debilitating and incurable illnesses.¹⁴ Groups such as the Euthanasia Research and Guidance Organization, formerly the Hemlock Society, have a significant Web presence.

Suicide Methods Online

Also easily located are Web sites that detail and discuss various suicide methods. These sites often describe unusual but highly lethal suicide methods that would not be known to the general population, such as gas asphyxiation or other methods that contribute to the higher rates of completed suicides among medical professionals armed with such knowledge. While in former years, laypersons would have had to research such subjects extensively in medical textbooks and reference guides in order to plan

successful attempts, in recent years, several individuals have committed suicide with unusual methods that they learned online.

In May 1999, a Welsh computer programmer committed suicide using a recipe for neat nicotine he had obtained from the Internet.¹⁵ Another individual attempted suicide by ingesting the roots of a highly poisonous plant and injecting lighter fuel into her arm.¹⁶ A case report appearing in the *American Journal of Psychiatry* describes a patient who attempted suicide by overdosing on codeine he had learned (on the Internet) to distill from an acetaminophen-based drug; the patient also purchased equipment to asphyxiate himself with helium, another method he had learned about online.¹⁷ Internet-learned helium asphyxiation was responsible for the deaths of a young woman⁶ and a middle-aged woman¹⁸ who had read about the method at the COE Web site. Another individual committed suicide by fatal ether inhalation using a plastic-bag-assisted method he had read about online (again, from the COE) and in a magazine.⁷ A letter published in the *American Journal of Psychiatry* in 1999 described patients who attempted suicide by consumption of castor oil beans or excessive quantities of water; these patients had learned the methods online but refused to provide their treatment teams with information about the Web sites they had used.¹⁹ Other individuals have completed suicide by hanging methods they learned online.^{18,20} Pro-suicide online forums and Web sites have been implicated in several suicides reported in the news media, prompting controversy over whether pro-suicide and how-to suicide Web sites should be banned.²¹

Internet Suicide Pacts

Suicide pacts are traditionally formed between people who have a close relationship. Recent years, however, have shown an increase in a new type of suicide pact: pacts between strangers who become acquainted on the Internet, sometimes solely for the purpose of committing suicide together.^{22,23} In 2000, 2 Korean men were arrested in connection with a contract murder and a suicide pact arranged on the Internet.²⁴ One of the men met 2 individuals online and was with them before they drank poison. The other suspect stabbed to death a man whom he had met on the Internet, who allegedly paid him money to kill him. In 2004, 2 Welsh girls (ages 13 and 14) who had met on the Internet attempted suicide together by overdosing on drugs; 1 died, and 1 survived but went on to make additional suicide attempts with drug overdoses.²⁵

Numerous suicides in Japan, Hong Kong, and Korea in recent years have been traced to suicide pacts formed online and carried out with the aid of carbon monoxide poisoning from burning charcoal grills inside vehicles or small, sealed rooms.^{26–29} An Australian investigative journalist reported locating several Japanese suicide chat rooms, including one called “Suicide Chat Room for

Young People,” which had suicidal participants as young as 12 years old seeking assistance in suicide pacts from others who had access to lethal means.³⁰ In February 2005, police arrested an Oregon man who was believed to have been involved in organizing a mass-suicide pact through the Internet with 32 individuals.³¹

“No Prescription Needed!”: Internet Pharmacies

Internet pharmacies may play an important role in completed and attempted suicides by Web-savvy consumers. Not only do they market and sell numerous prescription medicines and controlled substances which might be used for suicide attempts, but they also appear among the search results for suicide-related queries on Internet search engines. Sometimes called “rogue” pharmacies for dubious prescribing and dispensing practices, these pharmaceutical clearinghouses advertise readily available drugs for those who are willing to pay. A preliminary search by the authors on the search engine Google for the term *Oxycontin* “no prescription needed” (December 20, 2005) produced numerous sites advertising easy access to schedule III and IV controlled substances without a prior prescription. Patients can, and sometimes do, obtain potentially lethal doses of medicines and drugs through these online pharmacies. Patients may receive tips from suicide forums or suicide Web sites about how to obtain these drugs through the Internet. Banberry and West³² report an incident in which a patient attempted suicide with an overdose of medication (phenytoin and chlorthalidopoxide) purchased through the Internet. Beatson and colleagues³³ treated a patient who overdosed on clomipramine obtained without a valid prescription from an overseas pharmacy on the Internet. Following the patient’s discharge from the hospital, the patient again obtained clomipramine from the same source and completed suicide by fatal overdose.

Another concern for suicidal or depressed persons on the Internet is the possibility that Web surfing will yield links to online pharmacies or companies marketing or selling drugs or nutraceuticals that purport to treat depression. The U.S. Food and Drug Administration has cautioned consumers not to buy medicines online due to evidence that drugs bought online are often poorly labeled, sometimes not sold legally in the United States, or even counterfeit or tainted.³⁴ Furthermore, some drugs used in the treatment of suicidality, such as lithium, require careful monitoring by a physician for potentially harmful side effects or drug-drug interactions.

Baiting on the Internet

In early 2003, a young man took a lethal overdose of prescription drugs to an entertained audience of chat buddies who watched him on his webcam and encouraged him to continue taking more drugs.³⁵ While the young man apparently did not intend to commit suicide,³⁶ the be-

havior of those in the chat room indicated that many were aware of the dangers of his taking such large quantities of medications and nevertheless persisted in encouraging him to take more. In early 2007, a depressed, 42-year-old father, who had been participating in an insult chat room, broadcast his own suicide over his webcam, hanging himself while chat-room participants watched; a participant alerted police, but the man was found already dead.^{37,38}

Such disinhibited social behavior on the Internet has been termed the *online disinhibition effect*.³⁹ Whereas a suicide threat in a public setting such as a shopping mall might prompt passersby to call security and to attempt to talk the person down, expressions of suicidal ideation in chat rooms or in newsgroups are frequently met with scorn, derision, or apathy. While conducting research for this topic, the authors located a message board post, several years old, in which a young girl had indicated her desire to kill herself; replies to her post ranged from supportive and encouraging of getting help to baiting comments urging her to go through with it.

The Internet as a Source of Help or Support

Despite its potentially harmful aspects, the Internet has numerous positive, even therapeutic, resources to help vulnerable individuals. Many disconnected, depressed individuals who log onto the Internet (perhaps the vast majority) find support and help through confiding in others or by finding crisis intervention services online. Some commentators have noted that the Internet may have helped several individuals to receive crisis intervention services when their suicidal intentions or actions were noticed by others online and reported to authorities or rescue services.⁴⁰ When a woman disclosed to an Internet chat partner that she was suicidal, her chat partner called the police and kept her engaged in conversation until rescue personnel arrived.⁴¹ In conversations with psychiatric inpatients who use the Internet, we learned of numerous peer support networks for individuals with depression or other mental illnesses. Some patients even felt that the support and encouragement they had found online had significantly improved their quality of life. One patient credited an Internet message board with giving her the insight and support she needed in order to seek treatment for her substance abuse.

Barak⁴² has developed a suicide prevention project that uses the Internet to deliver crisis intervention services, including rescues of individuals in the process of attempting suicide. Additionally, the Samaritans report receiving e-mails at a rate of over 1750 per week⁴³ and 100,000 per year⁴⁴; these numbers appear to be growing. Young people using the service reported that the e-mail capability helped them to feel more secure about control and confidentiality than telephone contacts.⁴⁵ Furthermore, e-mail contacts indicated suicidal ideation 51% of the time, while telephone contacts indicated suicidal ideation only

23% of the time.⁴⁶ Additional helpful resources are available online, such as spirituality sites, anti-suicide homepages by laypersons, and even Internet-based therapy providers.

METHOD

To determine what types of materials a suicidal person might find on the World Wide Web through Internet browsers, we designed a brief survey of Internet Web sites accessible through suicide-related search terms. In August and September 2006, searches were conducted using 5 popular search engines (Google, Yahoo!, Ask.com, Lycos, and Dogpile) and 4 suicide-related search terms (*suicide*, *how to commit suicide*, *suicide methods*, and *how to kill yourself*). We classified the first 30 Web sites or "hits" per search combination, as well as any "sponsored links" that appeared in those pages. We selected these search engines because 3 (Google, Yahoo!, and Ask) were ranked among the 5 most popular at the time of the study (Google was first, Yahoo! second, and Ask fourth, but steadily growing in popularity).⁴⁷ We added Lycos, as it is less popular, to obtain a more diverse set of results. We included Dogpile to represent a popular meta search engine⁴⁸; meta search engines cull results from multiple search engines. While there is necessarily some overlap in Dogpile with Google and Yahoo! (2 of the engines it uses), first-page search results overlap in Dogpile was found to be less than 1%.⁴⁸ Search terms were derived from common sense as well as patient feedback and search terms reported in the literature. Conversations with patients and college students during an earlier pilot study helped us to affirm our selection of both search engines and search terms as likely to obtain a balanced sample of what the average suicidal Web surfer might find.

Web sites were coded by 3 separate raters, and consensus codes were determined for each unique URL. Each Web page was assigned 1 of 5 possible bias or category codes according to the raters' overall perception of the site. If 2 or more raters could not load the page, the site received a code of ERR (error loading the page). If the page content was not really about suicide per se (for example, a shopping Web site featuring a book or CD with the word "suicide" in the title, but not books or CDs *about* suicide), the site was coded NSS (not a suicide site). All other sites were coded PRO (pro-suicide bias or slant), ANTI (anti-suicide, or suicide-prevention, bias or slant), or NEU (neutral to suicide, unclear if any bias, or containing a balance of both pro- and anti-suicide material).

Sites receiving a code of ERR did not receive any other codes. Sites coded NSS were originally expected to receive no other codes, but we revised our coding system after data collection so that NSS sites that nonetheless contained potentially harmful information could be represented in the results.

Table 1. Bias/Category Codes of the 373 Reviewed Web Pages^a

| Code | N | % | Description |
|------|-----|------|---|
| NEU | 115 | 30.8 | Site appears to be neutral to suicide or contains both pro- and anti-suicide material |
| ANTI | 109 | 29.2 | Site appears to have an anti-suicide or suicide prevention bias or slant |
| NSS | 74 | 19.8 | Not a suicide site (eg, rock band's homepage, movie or novel with suicide in the title) |
| PRO | 41 | 11.0 | Site appears to have a pro-suicide bias or slant |
| ERR | 34 | 9.1 | Site would not load |

^aEach Web page received exactly 1 of the codes.

Table 2. Bias/Category Codes of the 616 Total Hits (including repeat listings)

| Code | N | % |
|------|-----|------|
| ANTI | 215 | 34.9 |
| NEU | 180 | 29.2 |
| NSS | 99 | 16.1 |
| PRO | 72 | 11.7 |
| ERR | 50 | 8.1 |

RESULTS

Numerous repeat listings appeared, for a total of 373 unique URLs (of 616 total results). Table 1 illustrates the number and percentage of sites (of the 373 unique pages) receiving each of the 5 bias/category codes. Table 2 presents the data for the total sample of 616 hits, including repeat listings. Each site received exactly 1 of these codes. The most commonly used codes were NEU (N = 115 unique Web pages) and ANTI (N = 109 unique Web pages). Table 3 displays the total number of hits per search, and Table 4 shows the numbers per search of pro-suicide sites, sites with how-to suicide instructions, sites linking to pro-suicide sites, and sites linking or referring to crisis intervention resources. Table 5 gives descriptions of the 8 Web pages that appeared most frequently in search results.

Sites coded NEU, ANTI, or PRO were also reviewed for more specific information as detailed in Table 6. Rules followed to prevent conflicting characterizations are shown in the description column in Table 6. Raters used a coding system similar to that employed for Table 1, but sites in the Table 6 analysis could receive as many codes as were applicable. ERR sites were not reviewed for Table 6, but percentages shown are nonetheless percentages of the total sites (N = 373), to accurately reflect what percentage of unique search hits contained a particular type of information. Initially, we believed that NSS sites would not need any additional characterization. However, in the course of reviewing the Web sites, we learned that 8 of the 74 NSS sites referred or linked the user to online pharmacy Web sites where one might conceivably purchase drugs to abuse, to self-medicate, or to use in a suicide attempt. Consequently, we re-reviewed all non-ERR Web sites to determine the frequency of pharmacy-type Web sites among all PRO, ANTI, NEU,

and NSS sites. Table 7 shows the characteristics of the 616 total results, including repeat listings.

To approximate the search methods that we believe are likely to be employed by a Web-savvy, suicidal person, we also conducted exploratory qualitative research on the home pages and other pages attached to a root directory associated with each Web page in our results. We also followed prominent suicide-related links available on a Web page to determine whether the site directed the user to pro-suicide or how-to, or to crisis-intervention resources. For example, for the URL <http://www.nimh.nih.gov/suicideprevention/index.cfm>, we also visited the root directory, <http://www.nimh.nih.gov>, to obtain more information about the nature of the Web site. We used this information to help generate consensus ratings if 2 raters' codes disagreed.

In this survey, we found 2 types of pro-suicide material. The first type, general pro-suicide Web sites, appeared to encourage suicide or freedom to commit suicide for all persons regardless of medical status. The second type, "death with dignity" sites, appeared to support suicide only in limited circumstances (e.g., physician-assisted suicide for individuals with terminal or intractable debilitating illness). General pro-suicide sites were far more likely to provide detailed descriptions of suicide methods. "Death with dignity" Web sites were more likely to contain information about legislative advocacy, although some did contain information about specific suicide methods, such as gas asphyxiation, which—although aimed at the terminally ill—could nonetheless be used by persons with treatable major depression. "Death with dignity" sites in our survey included pages associated with the Euthanasia Research and Guidance Organization and its members.

Much of the pro-suicide and how-to suicide information obtained in our search was associated with either the COE or the ASH group. These groups share some members, and exploratory research revealed that members' personal sites were among the results that appeared in our survey. COE (<http://www.churchofeuthanasia.org/>) is an organization whose motto is, "Save the planet—kill yourself," and the group openly advocates suicide. One resource that came up frequently in this survey was the ASH "Methods File," a detailed listing of various suicide methods, their pros and cons, and various risks associated with

Table 3. Total Number of Results per Search

| Search Query | Google | Yahoo! | Ask.com | Lycos | Dogpile |
|-------------------------|------------|------------|------------|-----------|---------|
| "Suicide" | 16,600,000 | 74,800,000 | 15,430,000 | 9,702,216 | 95 |
| "How to commit suicide" | 16,600,000 | 34,200,000 | 8,600 | 5,830 | 73 |
| "Suicide methods" | 57,900 | 35,500 | 8,260 | 7,658 | 74 |
| "How to kill yourself" | 23,700 | 20,200 | 5,460 | 3,520 | 73 |

Table 4. Numbers of Pro-Suicide Sites, How-To Suicide Sites, Sites Linking to Pro-Suicide Sites, and Sites With Contact Information for Crisis Intervention/Suicide Prevention Resources

| Search Query | Google | Yahoo! | Ask.com | Lycos | Dogpile |
|--|--------|--------|---------|-------|---------|
| Pro-suicide sites per search | | | | | |
| "Suicide" | 1 | 0 | 2 | 0 | 1 |
| "How to commit suicide" | 2 | 2 | 3 | 1 | 1 |
| "Suicide methods" | 8 | 6 | 8 | 6 | 9 |
| "How to kill yourself" | 2 | 4 | 6 | 5 | 5 |
| How-to suicide sites per search | | | | | |
| "Suicide" | 3 | 1 | 1 | 1 | 2 |
| "How to commit suicide" | 3 | 4 | 3 | 1 | 3 |
| "Suicide methods" | 11 | 7 | 12 | 10 | 13 |
| "How to kill yourself" | 4 | 6 | 7 | 5 | 5 |
| Sites linking to pro-suicide sites per search | | | | | |
| "Suicide" | 4 | 4 | 2 | 1 | 2 |
| "How to commit suicide" | 3 | 1 | 4 | 2 | 2 |
| "Suicide methods" | 13 | 11 | 16 | 13 | 16 |
| "How to kill yourself" | 1 | 4 | 4 | 2 | 3 |
| Sites providing contact information for crisis-intervention or suicide-prevention resources ^a | | | | | |
| "Suicide" | 26 | 20 | 21 | 24 | 20 |
| "How to commit suicide" | 9 | 7 | 5 | 7 | 10 |
| "Suicide methods" | 11 | 14 | 5 | 17 | 16 |
| "How to kill yourself" | 2 | 5 | 6 | 3 | 6 |

^aLinks, phone numbers, or other contact information (e.g., suicide hotline phone numbers).

them. As discussed earlier in this article, investigations have revealed that both the COE and the ASH group have facilitated several completed suicides and may have played a role in innumerable others.

Some Web sites that were classified as NSS (not a suicide site) instead contained hyperlinks or marketing materials for pharmaceuticals or online pharmacies. For example, one such site had a URL containing the phrase "how to commit suicide with sleeping pills" and a hyperlink to an Internet pharmacy that sells sleeping aids and other drugs. Other sites marketed prescription medicines such as clonazepam and alprazolam. Another site marketed an herbal supplement that purports to treat depression.

One site that contained detailed information about suicide methods (but was classified as a neutral site) appeared to be a Web site for children's science fair project ideas. During the course of our study, 1 Web site appeared to have been removed for violating a network's Terms of Service for having contained potentially harmful information about suicide. One result was a Web site on which lawyers were soliciting plaintiffs for an atomoxetine suicide lawsuit. Another Web site purported to aim to dissuade people from committing suicide by describing the

adverse consequences of suicide attempts through various detailed methods. This Web site was classified as neutral because 1 rater believed it to be a pro-suicide suite, while another classified it as being anti-suicide. We agreed that the information on the Web site could be received in either way by a suicidal person.

While suicide-neutral and anti-suicide Web pages predominated, pro-suicide and how-to suicide resources were easily located and accounted for 2 of the 8 most frequently repeated Web pages. Eighteen of the 20 searches yielded at least 1 pro-suicide site. Two searches for the term *suicide methods* each produced 16 pro-suicide hits out of a total of 30 hits per search. In 4 searches, pro-suicide sites claimed the #1 spot for rank. In 9 searches, how-to instructions were the #1 result. For all 5 search engines, *suicide methods* generated the largest percentage of pro-suicide and how-to suicide sites.

DISCUSSION

While pro-suicide and how-to suicide resources do not constitute the majority of results in a Web search for suicide-related terms, they are nonetheless easily accessible, particularly to those who are Web-savvy and feeling des-

Table 5. Web Pages (URLs) Recurring Most Often (≥ 6 times) in the Study

| No. of Occurrences | Description |
|--------------------|--|
| 9 | Layperson's Web page attempting to dissuade the viewer from committing suicide. Provides links or information about various resources, including crisis intervention services. Markets books about suicide that have an anti-suicide bias. Classified as anti-suicide |
| 9 | The COE's "A Practical Guide to Suicide." Openly advocates suicide. Provides detailed instructions for various suicide methods. COE Web site links to suicide-related newsgroups, suicide notes, images related to suicide, other pro-suicide resources, and crisis intervention services. Classified as pro-suicide |
| 8 | Layperson's homepage, addresses suicide in a sarcastic, humorous manner; classified as neutral to suicide |
| 7 | Wikipedia entry on suicide. Provides some instructions, images, information about celebrities' suicides, statistics, and links to pro-suicide Web sites. Classified as neutral to suicide |
| 7 | Another page on the COE Web site. Openly advocates suicide. Provides detailed instructions for various suicide methods. COE Web site links to suicide-related newsgroups, suicide notes, images related to suicide, other pro-suicide resources, and crisis intervention services. Classified as pro-suicide |
| 6 | Christian proselytizing site. Provides links to crisis-intervention services. Classified as anti-suicide |
| 6 | Christian proselytizing site. Provides links to crisis-intervention services. Classified as anti-suicide |
| 6 | National Institute of Mental Health page. Professional mental health organization; provides statistics as well as links to crisis-intervention services. Classified as anti-suicide |

Abbreviation: COE = Church of Euthanasia.

Table 6. Characteristics of 339 Reviewed Web Pages^a

| Description | N | % |
|--|-----|------|
| Provides links, phone numbers, or other contact information for crisis-intervention or suicide-prevention resources (eg, suicide hotline phone numbers) | 109 | 29.2 |
| Contains or links to suicide statistics | 80 | 21.4 |
| Provides links to pro-suicide or how-to suicide resources, such as other pro-suicide or how-to Web sites, books, videos | 59 | 15.8 |
| Provides detailed suicide methods or how-to suicide recipes or instructions (exclude humorous or sarcastic descriptions, such as, "Eat fast food every morning, have a heart attack"; exclude statistical reports of suicide rates by method [epidemiologic data]; exclude sociological/historical information about suicide (eg, seppuku in Japan) in the context of cultural research/education; exclude brief, undescriptive lists [eg, "Hang yourself, overdose, slit your wrists"]) | 52 | 13.9 |
| Contains a suicide-related message board or blog | 50 | 13.4 |
| Professional or government mental health site or mental health area of a health site (eg, American Psychiatric Association, Dr. Doe's Clinic) | 44 | 11.8 |
| Markets something that pertains to suicide or mental health (eg, self-help books, e-therapy, book about suicide methods) (exclude novels, CDs, movies, etc) | 40 | 10.7 |
| Individual's homepage or layperson's Web page about suicide | 38 | 10.2 |
| Crisis-intervention/suicide-prevention site (eg, Samaritans, American Foundation for Suicide Prevention) | 37 | 9.9 |
| Deals with suicide humorously or sarcastically (eg, cartoon character contemplating suicide) | 33 | 8.8 |
| News article about suicide or related news item (exclude sites that merely link to news stories) | 23 | 6.2 |
| Academic research on suicide (eg, published journal article about suicide) | 23 | 6.2 |
| Posts (or links to) images of completed or attempted suicides (photos of suicide victims, etc) | 22 | 5.9 |
| Religious proselytizing site (exclude sites that do not proselytize) | 21 | 5.6 |
| Has a suicide-related newsgroup or archived postings from a suicide-related newsgroup (or links to these) | 19 | 5.1 |
| Contains, posts, or links to actual suicide notes from known completed or attempted suicides (exclude "I'm feeling suicidal" message board posts) | 17 | 4.6 |
| Links to online pharmacy/pharmacies or markets drugs or nutraceuticals | 10 | 2.7 |
| Contains or links to information about a celebrity's suicide or suicide attempt (eg, Kurt Cobain fan page) | 9 | 2.4 |
| Contains or links to an interactive self-quiz (eg, "Are you suicidal? Take this quiz to find out") | 4 | 1.1 |

^aSites receiving the code ERR (error) were not included in this analysis, so the total number of sites in this analysis is 339. To accurately reflect the frequency of these characteristics in a sample of unique URLs, however, the third column reflects the percentage of the total sites (% of 373), not the percentage of the reviewable sites (% of 339). Categories are arranged in descending order by frequency.

perate. While our rating system is not wholly objective, we erred on the side of "no bias" (NEU) if there was a question as to whether a site was pro- or anti-suicide. Suicide-neutral sites may have different influences depending on the individual reviewing the Web site. It is telling that some of the neutral sites were rated as pro-suicide by one reviewer and anti-suicide by another. The impact of these sites is likely to vary depending upon

what the seeker hopes to find. A number of the neutral sites contained some pro-suicide information. Furthermore, many of the pro-suicide and neutral sites contained links to other pro-suicide information. A determined suicidal person online can easily find pro-suicide communities and groups such as the COE and ASH, as well as how-to suicide instructions or Internet pharmacies selling drugs that might be used in a suicide attempt. Conversely,

Table 7. Characteristics of the 616 Total Hits (including repeat listings)

| Description | N | % of 616 Total Hits |
|--|-----|---------------------|
| Provides links, phone numbers, or other contact information for crisis-intervention or suicide-prevention resources (eg, suicide hotline phone numbers) | 238 | 38.6 |
| Contains or links to suicide statistics | 146 | 23.7 |
| Provides links to pro-suicide or how-to suicide resources, such as other pro-suicide or how-to Web sites, books, videos | 108 | 17.5 |
| Provides detailed suicide methods or how-to suicide recipes or instructions (exclude humorous or sarcastic descriptions, such as, "Eat fast food every morning, have a heart attack"; exclude statistical reports of suicide rates by method [epidemiologic data]; exclude sociological/historical information about suicide [eg, seppuku in Japan] in the context of cultural research/education; exclude brief, uninformative lists [eg, "Hang yourself, overdose, slit your wrists"]) | 102 | 16.6 |
| Professional or government mental health site or mental health area of a health site (eg, American Psychiatric Association, Dr. Doe's Clinic) | 82 | 13.3 |
| Individual's homepage or layperson's Web page about suicide | 79 | 12.8 |
| Crisis-intervention/suicide-prevention site (eg, Samaritans, American Foundation for Suicide Prevention) | 78 | 12.7 |
| Markets something that pertains to suicide or mental health (eg, self-help books, e-therapy, book about suicide methods) (exclude novels, CDs, movies, etc) | 65 | 10.6 |
| Posts (or links to) images of completed or attempted suicides (photos of suicide victims, etc) | 64 | 10.4 |
| Contains a suicide-related message board or blog | 61 | 9.9 |
| Deals with suicide humorously or sarcastically (eg, cartoon character contemplating suicide) | 49 | 8.0 |
| Contains, posts, or links to actual suicide notes from known completed or attempted suicides (exclude "I'm feeling suicidal" message board posts) | 47 | 7.6 |
| Has a suicide-related newsgroup or archived postings from a suicide-related newsgroup (or links to these) | 45 | 7.3 |
| Religious proselytizing site (exclude sites that do not proselytize) | 44 | 7.1 |
| Academic research on suicide (eg, published journal article about suicide) | 37 | 6.0 |
| News article about suicide or related news item (exclude sites that merely link to news stories) | 30 | 4.9 |
| Contains or links to information about a celebrity's suicide or suicide attempt (eg, Kurt Cobain fan page) | 27 | 4.4 |
| Links to online pharmacy/pharmacies or markets drugs or nutraceuticals | 11 | 1.8 |
| Contains or links to an interactive self-quiz (eg, "Are you suicidal? Take this quiz to find out") | 5 | 0.8 |

a desperate person who is open to getting help may easily find links to numerous crisis intervention resources, including hotline telephone numbers and support groups, even on pro-suicide Web sites.

It is important to note several limitations to our study. As the removal of 1 Web site during the course of our study illustrates, the Internet is constantly changing. Search engine results may vary considerably from one day to the next. Search engines employ ranking algorithms to determine the order in which search results will appear. Rankings depend on a variety of factors, including frequent (but not excessive) use of words contained in the query phrase, simplified URLs and content consistent with page titles, and the number and relevance of other Web sites linking to the page. Links from "respected" Web sites, such as universities and popular sites, are weighted more heavily.⁴⁹ Because many Web sites' owners wish to see their sites ranked among the top results, a significant market exists for firms specializing in "search engine optimization," the process of "tinkering" with a Web site's characteristics in order to boost its ranking on search engines.⁵⁰ It is therefore impossible to know exactly how or why the sites in our sample appeared in the first 30 results for each search. Furthermore, rankings may change dramatically over time. Other factors may influence results. Individuals surfing on networks with content filters may be unable to access dubious sites, for example. Finally, not all suicidal individuals will use these search terms or these search engines.

In 2005, the Australian government announced plans to outlaw inciting, promoting, or teaching people how to commit suicide on the Internet.⁵¹ Currently, however, such activity is common on the Web, as evidenced by the popularity of such Web sites in basic search engine queries for the word "suicide." While some have suggested that legislators, Internet service providers, Web site hosting companies, and mental health organizations should do more to remove pro-suicide Web sites from the Web, full censorship of such sites is unlikely in the foreseeable future. Web sites may be created from nearly every country in the world, and there is no universal set of laws governing or regulating content on the Internet. Frequently, as in the case of the ASH "Methods File," content on the Web is posted, copied, and reposted at numerous different URLs. Locating and removing all offending sites is likely to be extremely time-consuming and expensive, if not impossible. There are, however, areas with room for improvement. Professional mental health organizations' Web sites were not well represented among our results. Organizations and professional medical societies might consider developing search engine optimization strategies to improve the likelihood that suicidal or otherwise vulnerable Web surfers may find objective, helpful information and resources from trusted authorities on the Web, even when typing a query like "suicide methods" into a popular search engine.

A patient's Internet use can have vast implications for treatment, far beyond the question of accessing suicide in-

formation online. The question may be especially pertinent, however, in depressed, impulsive, or suicidal patients. Internet use is ubiquitous among teenagers, children, and young adults (termed the “wired” generation), but growing numbers of older adults are continually discovering the resources available on the Internet. In the course of our research, we learned of 2 middle-aged adult inpatients at our hospital who—prior to arriving at the hospital—had researched how-to suicide information online but had not shared this information with their treatment teams until we urged them to do so. Because such patients often do not tell their treatment teams about their activities online, it is important that clinicians *ask* about their patients’ Internet use. A high level of Internet literacy coupled with social isolation or other suicide risk factors may alert clinicians to the possibility that a patient might use the Internet to access pro-suicide or how-to suicide resources. If a clinician knows his patient uses the Internet, an assessment of Internet-related risk factors may be in order. Rajagopal²² suggests that during the risk assessment, psychiatrists may inquire specifically whether a depressed patient uses or has used the Internet to find information on suicide.

The importance of treatment cannot be overstated. The presence of suicidal ideation, even if manifested only as curious Web surfing (“Googling” the term *suicide*, for example), should be explored. If a patient is suicidal, timing and access to expert psychiatric care can be critical. Treatment must address the underlying illness or problem that might lead the patient to seek out potentially harmful resources online. The patient’s depression, other mental illness, or other psychosocial problems, not merely the Internet use, should remain the primary target of treatment, whether by psychotherapy, pharmacotherapy, or both.

Clinicians should also consider the value of providing supportive education to patients who use the Internet. The Ministerial Council for Suicide Prevention in Western Australia has produced a helpful booklet entitled “Using the Internet for Suicide Prevention: A Guide,” which offers an overview of pertinent issues and suggestions for using the Internet for suicide prevention efforts, including information about Internet-based counseling, informational resources online, and chat rooms.⁵² The psychiatrist or another member of a treatment team might sit down with the patient at the therapist’s office computer and assist the patient in locating and using online support groups, advocacy Web sites, and other forums that would provide safer channels for their Web surfing. If there is no computer or Internet connection in the therapist’s office, a handout listing URLs and descriptions of helpful Web sites may be an option. The handout should include both informational resources (such as government or professional organizations with information about mental health) and social outlets (such as advocacy groups, and support groups online), as well as the Web addresses and

phone numbers for crisis intervention organizations in case the patient has thoughts he or she is not yet comfortable discussing with the therapist. Suicidal patients do not always contact their therapists before attempting suicide, but many do reach out and try to speak to *someone* before making an attempt.

Education can be customized to meet the individual patient’s needs. It may be helpful to have a candid discussion with the patient about the pro-suicide information he or she may encounter online. Some patients may actively seek out such Web sites when feeling extremely hopeless or depressed and may ignore crisis-intervention or anti-suicide sites. Patients may be forewarned that groups like the COE have an agenda and that many suicide methods advocated online carry a high risk of failure with permanent, irreversible injury, including brain damage. Child and adolescent psychiatrists with depressed patients might consider warning parents to more closely monitor their children’s activity online.

For patients already using the Internet in harmful ways, one option for intervention might be to obtain the patient’s consent to install an Internet content filter and/or monitoring software. Such software might enable the psychiatrist to be alerted if the patient’s Internet use becomes problematic, or may even prevent the patient from accessing harmful material when his or her judgment becomes impaired. While we know of no software specifically tailored to this function for psychiatric patients, filters and monitors are used by libraries, businesses, university networks, and parents, and such programs may be customizable. Such a practice may be similar to “safety contracts,” but because filtering and monitoring software carry risks to the patient’s sense of autonomy and privacy, this approach may be appropriate only when less restrictive approaches are likely to fail. Monitoring programs may, however, help to lessen confusion over whether (and when) civil commitment proceedings are necessary to ensure the patient’s safety. When filters or monitoring software are deemed too paternalistic or are otherwise not viable options, therapy sessions may entail helping the patient to form new coping strategies and re-channeling problematic Internet use into more supportive, constructive forums and Web sites. For example, there are online substance abuse recovery groups, abuse and trauma recovery groups, depression or bipolar disorder support groups, personality disorder support groups, mailing lists and chat rooms for disabled persons, religious and spiritual discussion forums, and even peer support forums for people struggling with financial difficulties, legal troubles, and relationships. Forums range from listservs and message boards to chat rooms, live peer support groups, and interactive blog rings. Helping the “wired” patient to connect with supportive resources may be a beneficial adjunct to treatment and may promote more therapeutic uses of the Internet.

Drug names: alprazolam (Xanax, Niravam, and others), atomoxetine (Strattera), chlordiazepoxide (Librium and others), clomipramine (Anafranil and others), clonazepam (Klonopin and others), phenytoin (Dilantin, Phenytek, and others).

Disclosure of off-label usage: The authors have determined that, to the best of their knowledge, no investigational information about pharmaceutical agents that is outside U.S. Food and Drug Administration–approved labeling has been presented in this article.

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