

Time for a Change: College Students' Preference for In-Person versus Technology Mediated  
Help for Emotional Distress

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**Abstract**

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**Background:** Even with recent advances in psychological treatment and internet technology, online computerized therapy is not popular. The college population with almost universal access to both computers and the internet and a high rate of psychological distress could be an important area for the dissemination of evidence-based online computerized therapy.

**Introduction:** This survey evaluated the current trends among college students in terms of help seeking behaviors, availability of technological devices, and willingness to share personal information online.

**Materials and Methods:** An online survey was distributed to 572 university students to assess a variety of issues pertaining to means and willingness to seek treatment. This survey included ownership/plans for ownership of technological devices, likelihood of seeking face-to-face or online help from a variety of devices, willingness to disclose information online compared to face-to-face, and interest in playing computer games designed to work as psychotherapy. In addition, the Mental Health Inventory was included as an index of mental health.

**Results:** Over 98% of participants reported ownership of mobile technology. No relationship between severity of mental health problems and avenue of help seeking was found. Asian

Americans were more likely to be non-treatment seekers and were less likely to seek face-to-face only help relative to other ethnicities. In terms of information disclosure 35.7% of participants were more likely to disclose equal or more information online compared to face-to-face treatment. The majority of participants indicated high interest for playing serious games for emotional distress. Implications for avenues for technological mental health dissemination are discussed.

**Discussion/Conclusion:** Our results suggest that college students on average perceive online modalities of emotional help seeking to be just as potentially beneficial as more traditional, face-to-face professional help settings suggesting a need for EBTs to be adapted into online interventions. Furthermore, college students seem to be opened to creative ways of receiving help for emotional problems, with most of them being willing to even try games designed to help them handle emotional distress.

**Keywords:** college student survey research; help seeking; preference for technology versus face to face emotional help;

## **Introduction**

Mental health disorders are responsible for a large proportion of the overall US disease burden with as many as half of Americans meeting diagnostic criteria for at least one mental health disorder during their lifetime (1), according to the DSM-IV (2). Over the last few decades significant progress has been made in creating and evaluating efficacious psychological interventions and treatments for a wide range of mental disorders. However, dissemination of evidence-based treatments (EBTs) remains a great challenge in the field (3;4), with the majority of US adults who meet criteria for mental disorders not receiving mental health care (5). Barriers to wide-scale dissemination include: dearth of practitioners trained in EBTs, the high cost of face-to-face therapy, and mental health stigma that keeps people away from seeking professional help (6;7).

The college student population represents no exception to this general trend with almost half of college students meeting diagnosis for a mental disorder but only 25% receiving treatment during the past year (8). Finding ways to disseminate mental health treatment to college students is particularly important for several reasons. Many mental health disorders have an early onset, with half of all lifetime disorders starting by before age 15 by the age of 24 (1). Furthermore, experiencing mental health problems early in life are associated with negative academic and social outcomes (9-16). Although receiving help through treatment early on is considered a protective factor, many adolescents and youth don't seek professional help for mental health problems, even when such treatment is provided for free (17). Disparities are also present in help seeking for mental health problems with some ethnic groups among college students such as Asian or Pacific Islander being found to be less likely to pursue treatment (17).

These trends suggest that trying to reach youth and college students in particular via traditional avenues of offering mental health treatment might not be a sufficiently effective strategy to deliver to students needing help. Recent technological advances both in terms of devices (e.g. smartphones, tablets, laptops) and applications (e.g. Facebook, Twitter, online chats) provide new opportunities to deliver mental health care in ways that appeal to youth in general and college students in particular. In this study, we examined the potential of engaging college students in treatment for mental health/emotional problems through interventions delivered through technology. It is encouraging that college students are already using technology to seek help to some extent by researching health information online (18).

Computerized mental health treatments have gained momentum in the past decade with a plethora of research emerging to support their efficacy in addressing many disorders including depression (19;20), anxiety (21), and substance abuse (22). Existent meta-analyses (23-25) comparing computerized to face-to-face treatments found no significant differences in effect sizes. Similarly, meta-analyses (19;25) found no significant differences in drop-out rates between face-to-face and computerized therapies. Acceptability measured through adherence to treatment and satisfaction was also found to be high in meta-analyses of computerized treatments (19;26) with a median of 80% of participants who begin interventions completing them and a median of 86% reporting being satisfied or very satisfied with treatment (25;26). Most computerized treatments however target largely the same population as traditional therapies do: mental health treatment seekers, a feature that does not characterize college students.

One possibility for engaging college students more in seeking and receiving help for mental health problems is to intervene via technology, channels of communication, and applications that they are already using and are excited about. Mobile devices connected to the

internet for example significantly change the type of interventions that could be delivered to support individuals during emotional challenges. Interventions delivered via mobile devices are increasingly prevalent in addressing general health problems (27). Similarly online social networking applications like Facebook, Twitter, Reddit, etc. are highly frequented by students and could represent virtual places to meet needs for emotional support. "Serious" games use effective engagement strategies from games for developing novel learning and behavioral change avenues (28-31). Considering the high popularity of games in college age samples, serious games could provide a potentially effective avenue for reaching and engaging students in skills building for better coping with their emotional problems.

However there is little research conducted in assessing college students' ownership and willingness to use novel technological devices and online applications for accessing help for emotional problems. Furthermore there is little information available comparing college students' likelihood of seeking help through traditional face-to-face versus online sources. Another important question is the extent to which college students are willing to disclose personal information to gain emotional support via online application versus to face-to-face professionals. Having a better understanding of college students' willingness to use online resources for emotional support could inform development of such applications within the school system, military, and other systems.

Our study had several goals. First we wanted to find out what technology and devices college students have access to. Then we were interested in how open they would be to using online versus face-to-face sources of support for emotional problems and what devices they were likely to use in accessing online help. We wanted to examine whether severity of mental health/emotional problems predicted likelihood of help seeking via online versus face-to-face

methods. We did not have any hypotheses linking severity with preference for treatment through online versus face-to-face methods. Traditionally some ethnic groups (such as Asians (17)) have been less likely to seek treatment for mental health problems. We were interested to know if this ethnic group was also less likely to seek help via online methods. Furthermore, we wanted to know the extent to which college students were open to disclose personal information in online settings compared to disclosure of information in face-to-face encounters. Last we were interested in evaluating participants' willingness to try serious games for learning how to better navigate emotional difficulties.

## **Method**

### **Participants**

.A sample of 572 students (203 men, 368 women, 1 unidentified) answered the survey. Participants had to be over 18 years of age to consent to participate in the study. All study procedures were approved by the local IRB. The study was advertised through the psychology subject pool between October 2012 and December 2012.**Measures**

We created an 18-item anonymous online survey to assess: brief demographic information, ownership and plans for ownership of technological devices (desktop computers, laptop computers, tablets and smartphones), likelihood of seeking help for emotional problems (defined as anxiety, depression, difficulties in interpersonal relationships, etc.) either *face-to-face* or *online* from a variety of devices and sources (Facebook, Reddit, Twitter, chatrooms, forums/bulleting boards, instant messaging, online psychotherapy, online self-help apps, and online education), extent of likelihood to disclose information online compared to face-to-face, and interest in playing computer games designed to improve skillfulness in coping with emotional difficulties. We used the following scale to assess likelihood of help seeking: very

unlikely, quite unlikely, likely, quite likely, and very likely. We used the Mental Health Inventory (MHI) to measure general emotional functioning. The MHI is a 38-item self-report questionnaire using 6-point Likert scale (0 *not at all* to 6 *all the time*) to measure mental health issues like anxiety, depression, behavioral control, positive affect and general distress (32). The MHI has been studied extensively in large samples and has a reported Chronbach's alpha of .93.

----- Table 1: Description of survey items -----

### **Statistical Analyses**

Statistical analyses were conducted in SPSS 16 (33). We classified participants according to preference for online versus face-to-face help seeking into four groups: individuals unlikely to seek help either online or face-to-face (“None”); individuals likely to seek help online only (“Online Only”); individuals likely to seek help face-to-face only (“Face-to-Face Only”); and individuals likely to seek help both online and face-to-face (“Either”). To investigate whether severity of emotional problems, as measured through the MHI scale was associated with help seeking preference, we conducted a Multinomial Logistic Regression using MHI total score, MHI depression subscale score, MHI anxiety subscale, and gender as predictors and help seeking group (the groups defined above) as the outcome variable.

## **Results**

### **Sample Characteristics**

The average age was 18.7 years, most were Asian American (59.2%), female (64.3%) and freshmen in college (65.5%). Most responders had not yet decided on a major (74.8%). Of theof the students who had decided on their major, they were in the areas of social sciences (23.25%), pre-medicine (18.18%), or natural sciences (16.9%).

-----Table 2. Demographic information -----

## **Ownership of Technological Devices**

To assess participants' potential of seeking help for emotional problems via online sources, we first examined questions on ownership of devices that can be used online. A device's mobility is a key aspect that influences how and when it can be used to get help. Also, smaller devices can potentially be easier to carry around and use in a fairly confidential way. Hence, we were particularly interested in ownership of laptops, tablet devices, and smartphones. The vast majority of participants had laptop computers (98.6%), while only a minority had desktops (28.6%) suggesting that internet access is highly available to students on the go. Also, the vast majority of students already had a smartphone (84.9%) with the majority of those not owning a smartphone planning to buy one (59.3%). A sizable portion of our responders also owned a tablet device (25.8%) with a large segment of non-owners having plans to buy one (28%).

-----Table 3. Ownership and plans of ownerships for technological devices -----

## **Preference for Face-to-Face and Online Help for Emotional Problems**

Figures 1 and 2 depict the percentage of participants that endorsed overall being *likely* (likely, quite likely, or very likely) to seek help either face-to-face (Figure 1) or online (Figure 2). In terms of seeking help in a face-to-face setting, most participants endorsed approaching a family doctor (43.5%) followed by a school counselor (38%). Overall almost two thirds of participants endorsed they were likely to seek help from at least one professional face-to-face.

Online education was the preferred method of seeking support via an online avenue with almost half of the participants endorsing it (49.8%), a larger percentage than the highest ranked face-to-face option (43.5% family doctor). Facebook was the next preferred approach (35%) followed by Instant Messenger (29%) and online self-help apps (22%). Only a small minority of

students would seek help through online psychotherapy (16.7%). Although at a glance the likelihood of seeking help from some of the online methods queried (Reddit, Twitter, chatrooms) is lower than that for face-to-face professionals, *overall more participants would seek help through an online resource (75.4%) than through a face-to-face resource (63.3%).*

----- Figure 1: Likelihood of seeking help through face-to-face methods -----

----- Figure 2: Likelihood of seeking help through online methods -----

We were also interested to compare the proportion of students who were likely to seek help for emotional problems via face-to-face methods only, online methods only, none, or both methods.

Figure 3 depicts this information. A small percent of participants (13.6%) indicated they were unlikely to seek help through either face-to-help or online avenues. Almost a quarter of participants (23.1%) indicated they were likely to seek help online but were unlikely to seek help from face-to-face professionals. The smallest group of participants (11%) indicated that they would only seek face-to-face professional support. The majority (52.3%) were likely to seek help through both online and face-to-face sources. It is interesting to highlight that there are more participants likely to seek help via online avenues only than via face-to-face professionals only.

----- Figure 3: Likelihood of seeking help through face-to-face and online methods -----

### **Relationship Between Help Seeking and Emotional Problems**

Our next question was whether there was a relationship between severity of emotional problems experienced and avenue of help seeking. We ran a Multinomial Logistic Regression model with centered variables on MHI total score and gender as predictor variable and help seeking group (None, Face-to-Face Only, Online Only, Either) as outcome variable. Given the model fit, we rejected the null hypothesis ( $-2 \text{ Log Likelihood} = 677.55$ ;  $\text{Chi-Square} = 13.42$ ;  $\text{Sig.} < 0.05$ ). In other words, the model explained a statistically significant proportion of variance. We

set the reference group as individuals likely to seek help only through face-to-face sources (the Face-to-Face Only group). For the individuals unlikely to seek help regardless of how it was offered (None), none of our predictors were statistically significant ( $Exp(B)$  MHI total = 0.97,  $Sig.=0.47$ ;  $Exp(B)$  gender = 0.64,  $Sig.=0.2$ ). Similarly, we obtained no statistically significant predictors in our model for individuals likely to seek help only online (Online Only) ( $Exp(B)$  MHI total = 1.02,  $Sig.=0.45$ ;  $Exp(B)$  gender = 1.49,  $Sig.=0.21$ ) or in our model for both online and face-to-face means ( $Exp(B)$  MHI total = 0.98,  $Sig.=0.065$ ;  $Exp(B)$  gender = 1.05,  $Sig.=0.84$ ). In other words, it was no more likely for a participant to belong to one of the four groups based on severity as measured on the MHI or gender.

We were also interested in ethnicity as it might impact likelihood of help seeking through online versus face-to-face means. For this analysis we only considered individuals who endorsed either an Asian or White race/ethnicity since other ethnic groups had low representation in our sample. We again ran a Multinomial Logistic Regression model with centered variables on MHI total score, gender, and ethnicity as predictor variable and help seeking group (None, Face-to-Face Only, Online Only, Either) as outcome variable. Given the model fit ( $-2 \text{ Log Likelihood} = 777.53$ ;  $Chi-Square = 29.39$ ;  $Sig. <0.05$ ) we rejected the null hypothesis. As for the prior analysis we set the reference group as that formed of individuals likely to seek help only through face-to-face sources (the Face-to-Face Only group). Ethnicity was a significant predictor of the model. More specifically, compared to Whites the Asians was more likely to be in the no treatment seeking group (NoOnline\_NoFF,  $Exp(B)$  ethnicity = 3.41,  $Sig.=0.002$ ), in the online only group (Online Only,  $Exp(B)$  ethnicity = 2.24,  $Sig.=0.02$ ), or in the treatment seeking through both means group (Either,  $Exp(B)$  ethnicity = 3.13,  $Sig.<0.001$ ). In other words for the same level of emotional problems, as measured through the MHI total score, Asians were less

likely to endorse seeking help through only face-to-face means and were more likely to seek help through online only methods or both online and face-to-face methods.

### **Information Disclosure in Seeking Online versus Face-to-face Help for Emotional Support**

We were also interested in the extent to which college students think they can disclose personal information if they were to seek online help for emotional problems. Indeed willingness to seek help online might be insufficient to effectively address emotional problems through that avenue if it is accompanied by mistrust or reluctance to disclose information. Figure 4 presents the percentage of participants, overall, who endorse being likely to disclose less information or equal or more information about themselves and their problems through online avenues compared to in a face-to-face communication. Overall, Facebook is the online avenue through which more than a third of participants (35.7%) are likely to disclose equal or more information online compared to face-to-face communication. Figure 5 presents similar information for the group of participants who endorse they are likely to seek help both online and via face-to-face avenues (the Either group, which constitutes the majority of participants 52.2%). Interestingly a sizable portion, 42.5% of participants in this group endorse they would disclose the same amount of information or more via Facebook compared to in a face to face communication.

----- Figure 4: Likelihood of disclosing information online versus face to face for all participants.-----

----- Figure 5: Likelihood of disclosing information online versus face to face for participants endorsing seeking help both online and face to face.-----

### **Willingness to Play Computer Games Designed to Increase Skillfulness in Handling Emotional Difficulties**

Figure 6 presents participants' willingness to try playing computer games specifically designed to help people become more skilled in how they handle emotional difficulties. The data is presented both as an average across all participants (leftmost column) but also per the groups we identified based on willingness to seek help online or face-to-face. Interestingly, only 12.6% of all participants endorse being not at all interested in trying such games and that number drops to 9% for the group interested in support both through face to face and online forms (the Either group). Overall the vast majority of participants (87.4%) are interested at least a little bit in trying such games and for the Either group 71.6% are interested in such games between moderately and very much.

----- Figure 6: Willingness to play computer games designed to teach management of emotional difficulties.-----

### **Discussion**

College is a time of great potential for emotional turmoil. Mental health problems such as depression, anxiety, suicidal ideation, and self-injury are highly prevalent within the college student population (34). Therefore, college students are an important group to look at in terms of mental health treatment and prevention. This fact, coupled with the increased competition on people's time makes the potential for individual stress high, and willingness to seek help for that stress low. Treatment and prevention strategies for emotional problems can look toward technological strategies of dissemination in order to accommodate the needs for this population. At the same time, constructing online-ready disseminable treatment and prevention efforts are costly. Evidence that they would be used is essential for justifying their creation. The purpose of this investigation was to examine the landscape of attitudes of college students toward emotional help seeking, comparing face to face with online modalities.

Our results suggest that college students on average perceive online modalities of emotional help seeking to be just as potentially beneficial as more traditional, face-to-face professional help settings. This is in line with the idea that a mobile-ready, internet technology-mediated help seeking option would appeal to a modern college student's life; a time in one's life where there are multiple competing priorities, and where scheduling time for professional face to face help might not otherwise be prioritized. With almost one in four college students unwilling to seek face-to-face help but willing to seek help over online modalities, technology-mediated options have great potential for reaching these non-treatment seekers.

The majority of willing emotional help seekers fell in the category of those willing to seek both online and face-to-face emotional help (52.3%). This is in line with the idea that college consumers of psychological care perceive more options to be good, and flexibility of care through implementation at multiple modalities is important. Students willing to seek emotional help only through professional face-to-face contact were in the minority (11%). Further understanding of this group and the reasons behind their hesitation to seek help online despite ease of access to technological help could provide important insight into barriers of care and perception of online intervention.

Knowing there is interest in online help for emotional problems the next question becomes should these help modalities be put in place, would college students be able to access them if they were available? Our results strongly suggest an affirmative answer. Almost all (98.6%) of students in our sample owned laptop computers and 84.96% owned a smartphone, suggesting that internet connectivity is almost ubiquitously available in a metropolitan area and would be available in a just-in-time fashion for dealing with emotional problems. This also potentiates novel application of technology mediation, such as round-the-clock checking of

psychological well-being, experience sampling of emotional experiences, physiological monitoring, access to interactive psychoeducation, alert-type habit reinforcement, and serious gaming. Keeping track of emotional health indices such as levels of depression, anxiety, and subjective units of distress (SUDs) longitudinally in real time is a very attractive application of technology.

We had no prior hypotheses on whether extent of emotional distress predicted the kinds of help people were willing to seek. We found that level of emotional distress did not predict whether students were willing to choose one modality over another. The good news is that online help is a potential option for those experiencing both mild and severe emotional distress. Conversely, there is a group of individuals unwilling to seek help even for high level of emotional problems even when such help is available to them through technology and face-to-face interventions. Our current analysis did not examine the reasons of why that may be the case. Follow up studies on these individual differences such as personality variables, emotion regulatory variables, attitude variables, and stigma variables are needed to unpack the reasons that non-help seekers, even in the context of available online help.

One reason for the possibility of non-utilization of emotional health services, both online and face-to-face, may lie in cultural factors. An extant body of literature indicates that Asian Americans typically underutilize mental health services. Asian American college students use formal mental health services less than the general population (35). In previous studies, adherence to Asian values were found to be inversely proportional to positive attitudes about using formal mental health services (36). Similarly, attitudes of Asian American college students toward online psychological services were more negative compared to attitudes toward traditional psychological services (37). Consistent with this literature, our analysis confirmed

that Asian Americans would more likely fall in the no treatment seeking group and would be less likely to fall in the face-to-face help seeking group relative to Caucasians, regardless of level severity of mental health problems. Possible reasons for this might lie in culturally dependent views of the self and, consequently, the views of one's own emotions. Ethnic Asian Americans are more likely to hold an interdependent self-construal, whereas Western Americans typically hold independent self-construals (38). A salient interdependent value is the value of social harmony, which emphasizes the suppression of emotional display for the goal of minimizing the burden of surrounding others. In an interdependent cultural context, emotional reactivity and consequently, admitting the need for emotional help, can be viewed as an immature situational response. Interestingly enough however, Asian Americans were more likely to fall in the category of online and face to face help seekers or online-only help seekers, which is inconsistent with literature suggesting that Asian American college students view online psychological services negatively and that endorsement of Asian values are inversely proportional to using formal mental health services (36;37). Whether this is a generational shift in attitudes toward mental health services and online psychological services or a change in cultural values as a result of acculturation (i.e., the assimilation of cultural values in a host country) is unclear. Future research should examine cultural variables that might encourage or dissuade college users from potentially using online help for emotional problems. This research would be helpful to lower barriers of entry and facilitate utilization, as well as make designed treatments culturally competent.

What do our results suggest for designing e-health interventions for the college population? Our findings suggest a need for EBTs to be adapted into online interventions. Almost one in four college students want Online help only and the majority was willing to utilize

both online and face to face modalities of emotional help (52.3%). Apps and e-mail reminders and reinforcers to attend therapy and utilize skills in a just-in-time manner, as well as homework distribution and round-the-clock therapeutic access are design components that are likely to result in positive therapeutic outcomes such as reduced dropout, reduced time to treatment completion, and increased symptom reduction. Given the variation of evidence-based psychotherapy today, along with the advances and resources of the web, potential for effective dissemination and utilization is vast.

Trust on the internet accompanied with privacy concerns have stood as a long time barrier to the proliferation of emotional health interventions where the need to disclose highly sensitive personal information is sometimes essential for targeted help. Willingness to seek help may therefore be insufficient to effectively address emotional problems if it is accompanied by mistrust or reluctance to disclose information. Our results suggest that in our sample of participants, Facebook was the online avenue through which college students would most likely disclose sensitive information. Perhaps integrating emotional help with the Facebook platform (via Facebook APIs and apps developed for Facebook) or similar social networking platforms would bring about a sense of legitimacy. More work needs to be done in the ethics of such approaches but the potential for student interest is high. Moreover, by integrating care with a social network platform that is already well integrated into the lives of students, it stands to increase the likelihood of therapeutic use on a regular basis.

Our final analysis involved the willingness to play computer games to increase ones skillfulness in handling emotional difficulties. Our results indicated that the vast majority of survey participants were at least a little willing to play such games. Importantly, for those participants who endorsed willingness to utilize both online and face-to-face emotional help

modalities, a sizable majority (71.6%) endorsed willingness to play such games from “moderate” levels to “very much”. Serious gaming, games that are used for purposes other than entertainment but for learning and other beneficial purposes, is a promising and developing avenue for emotional health and wellness. While it can be time intensive and laborious to learn emotion regulatory skills through traditional therapy sessions and psychoeducation, serious games can utilize the engagement and motivational properties of entertaining games while at the same time act as a psychoeducational agent through which utilizers can learn and apply emotion handling skills. Moreover, gamification, the use of specific game design properties such as points, progress bars, and lists in non-game contexts, have been shown to improve user engagement, timeliness of use, and learning. These mechanics might increase engagement of college students in getting help for emotional problems yet they have not been implemented in online psychotherapeutic contexts.

Some weaknesses of this study should be highlighted. There are the obvious limitations of self-report indices (39). All responses were obtained at a single public university in the Pacific Northwest. Given this population’s high rate of technological ownership, it is not known whether our results will generalize to other areas where internet-ready device ownership is less common. However, given trends in device ownership, it is likely that ownership in areas where device ownership is less common will increase rather than decrease. Follow up questions that should be addressed in subsequent studies include what factors preclude someone with emotional help problems to seek either online or face to face help? How might we leverage our understanding of cultural variables and specific cultural populations that would facilitate greater use of online interventions? What are the specific reasons some college students are unwilling to seek face-to-

face help and would prefer online help? What are the specific reasons why some college students are not inclined to seek emotional help at all?

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### **Conflicts of Interest**

None.

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Table 1. Description of survey items

Question
Demographics (gender, age, year in college, major)
Do you have a desktop computer, laptop computer, tablet device, or smartphone?
If you don't have a desktop computer, laptop computer, tablet device, or smartphone do you plan to purchase one and when (next month, next 6 months, next year, after next year)?
How likely are you to seek face to face help for general emotional problems (anxiety, depression, difficulties in interpersonal relationships, etc.) from the following sources: friends and/or family, psychotherapists, professors, community counselors, school counselors, family doctors?
How likely are you to seek online help for general emotional problems (anxiety, depression, difficulties in interpersonal relationships, etc.) from the following sources: Facebook, Reddit, Twitter, chat rooms, forums/bulletin boards, instant messenger, online psychotherapy, self-help applications (e.g. Moodgym), online education (e.g. articles)
How likely are you to seek ONLINE help for general emotional problems (anxiety, depression, difficulties in interpersonal relationships, etc.) via the following resources? Desktop computer, laptop computer, tablet/eBook, smartphone (via apps), regular phone (via text message), gaming device (via games)
Compared to face-to-face communication how much information about yourself and your problems would you be likely to disclose through Facebook, Reddit, Twitter, chat rooms, forums/bulletin boards, instant messenger, online psychotherapy, self-help applications (e.g. Moodgym)
Would you be willing to try playing computer games that were specifically designed to help people become more skilled in how they handle emotional difficulties?

Table 2. Demographic Information

	( <i>n</i> =572)
Demographic Characteristics	
Age, years, M ± SD	18.78 ± 1.19
Male	35.5 (203)
Female	368 (64.3%)
Race (n, (%))	
White	169 (29.5%)
Asian American	339 (59.2%)
Hispanic/Latino	21 (3.6%)
Black	8 (1.39%)
Other	35 (6.11%)
Grade (n, (%))	
Freshmen	375 (65.55%)
Sophomores	122 (21.32%)

Juniors	50 (8.74%)
Seniors	24 (4.19%)
Major	
Social Sciences	133 (23.25%)
Natural Sciences	97 (16.95%)
Humanities	25 (4.37%)
Mathematics	27 (4.72%)
Computer Science	75 (13.11%)
Pre-Medicine	104 (18.18%)
Undecided major	150 (26.22%)
Double Major	78 (13.6%)

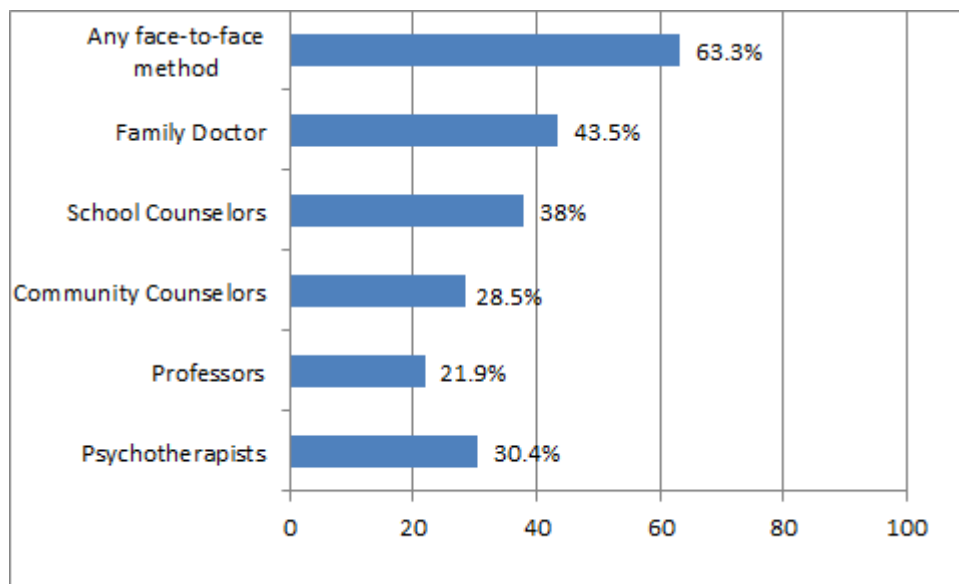
Table 3. Ownership and plans of ownerships for technological devices

	( <i>N</i> = 572)
Own a desktop computer	164 (28.67%)
Own a laptop computer	564 (98.6%)
Own a tablet device	148 (25.87%)
Own a smartphone	486 (84.96%)
Don't own & plan to buy a desktop computer	64 (11.18%, 15.68% of non-owners)
Don't own & plan to buy a desktop within a year	16 (2.79%, 3.92% of non-owners)
Don't own & plan to buy a laptop computer	3 (0.5%, 37.5% of non-owners)
Don't own & plan to buy a laptop within a year	3 (0.5%, 37.5% of non-owners)
Don't own & plan to buy a tablet device	119 (20.80%, 28% of non-owners)
Don't own & plan to buy a tablet within a year	62 (10.83%, 14.6% of non-owners)
Don't own & plan to buy a smartphone	51 (8.91%, 59.3% of non-owners)
Don't own & plan to buy a smartphone within a year	36 (6.29%, 41.86% of non-owners)

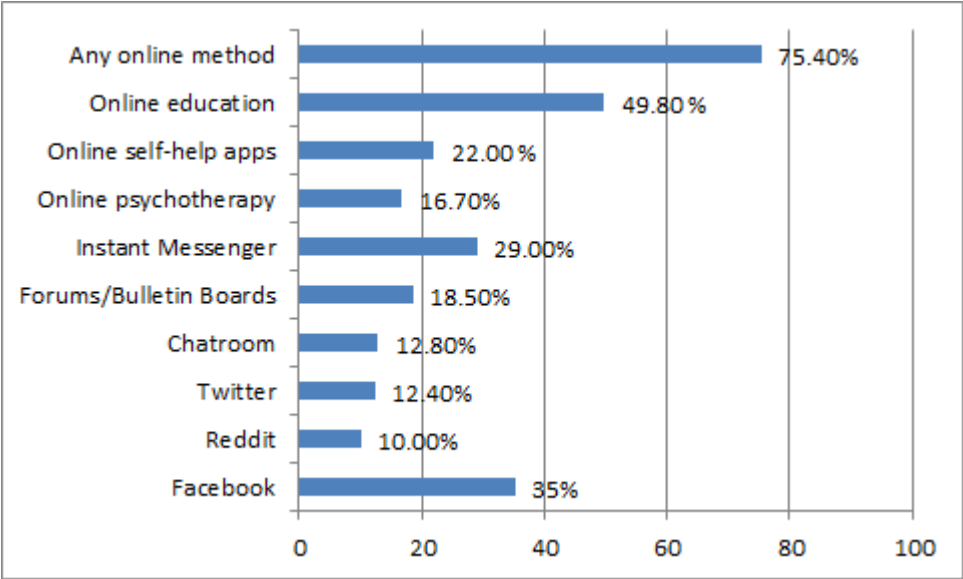
Table 4. Preference for face-to-face and online help seeking

	Mean ± <i>SD</i>
Face-to-face Help	
Friends and/or family	4.28 ± 0.98
Psychotherapists	2.15 ± 1.19
Professors	1.89 ± 1.04
Community counselors	2.04 ± 1.06
School counselors	2.28 ± 1.13
Family doctors	2.39 ± 1.17
Maximum face-to-face help seeking	2.92 ± 1.19

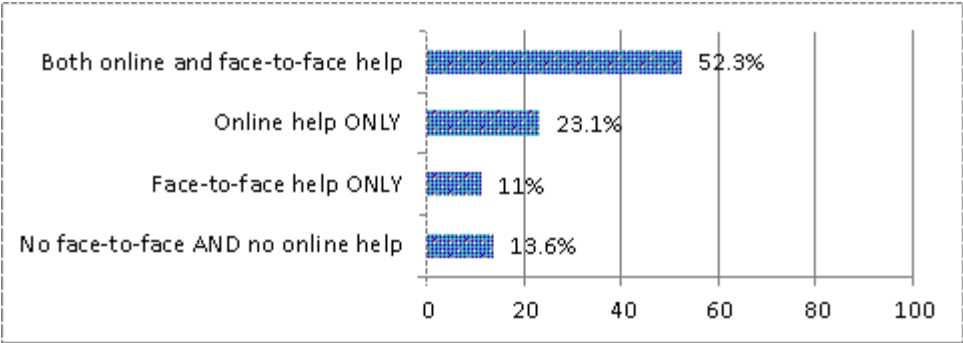
Online Help	
Facebook	2.24 ± 1.33
Reddit	1.41 ± 0.80
Twitter	1.47 ± 0.89
Chat rooms	1.50 ± 0.88
Forums/Bulletin Boards	1.63 ± 0.94
Instant Messenger	1.97 ± 1.26
Online psychotherapy	1.61 ± 0.93
Self-help applications	1.79 ± 1.11
Online education	2.53 ± 1.32
Maximum online help seeking	3.30 ± 1.27



**Figure 1:** Likelihood of seeking help through face-to-face methods



**Figure 2:** Likelihood of seeking help through online methods



**Figure 3:** Likelihood of seeking help through face-to-face and online methods

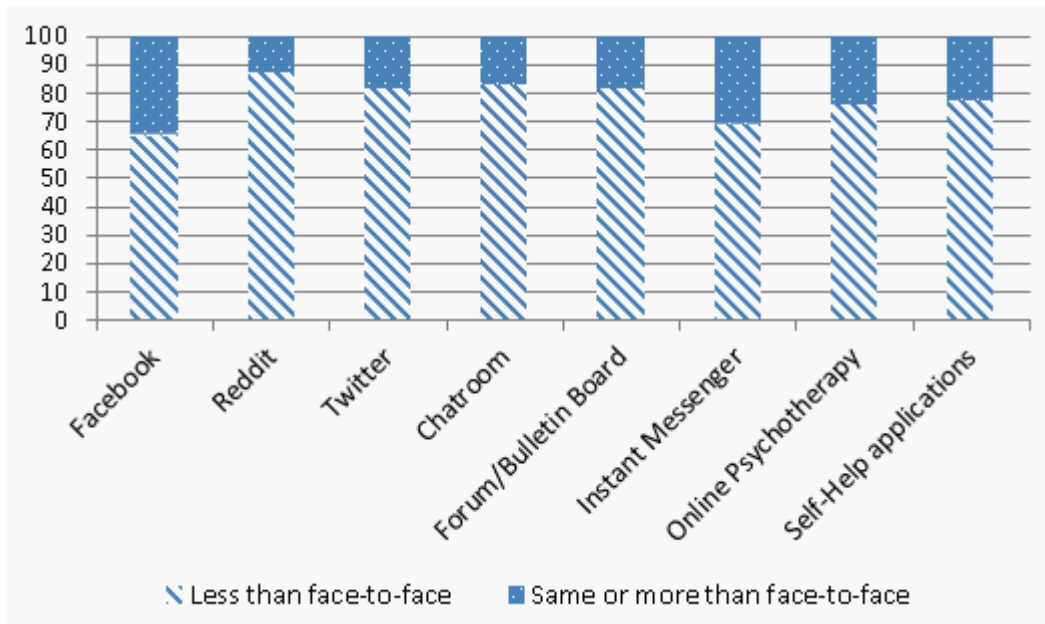


Figure 4: Likelihood of disclosing information online versus face to face for all participants.

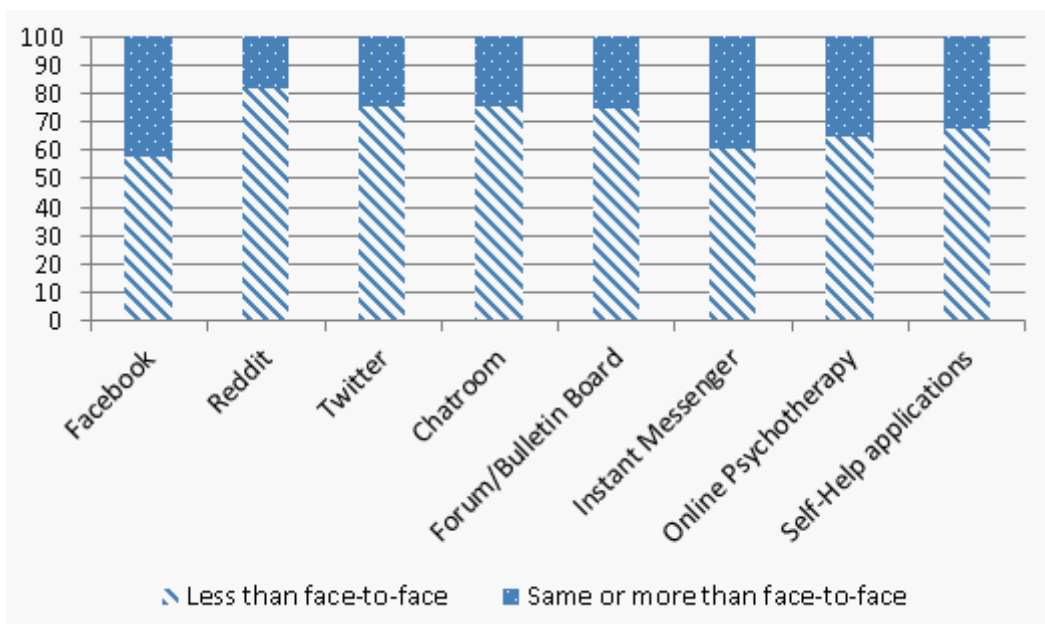


Figure 5: Likelihood of disclosing information online versus face to face for participants endorsing seeking help both online and face to face.

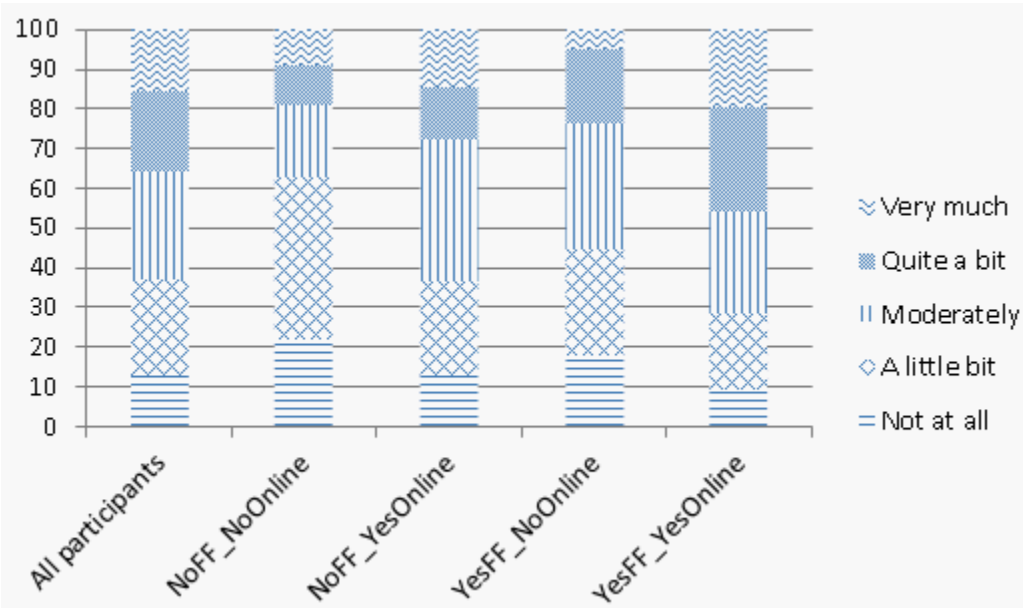


Figure 6: Willingness to play computer games designed to teach management of emotional difficulties.