Singles Seeking a Relationship and Spam E-mail for Romantic Relationships or Matchmaking

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Abstract
Spam e-mail on the topic of romantic relationships or matchmaking often arrives. We surveyed college students (n=200) who were single and seeking a relationship and those who were not single and seeking a relationship about if they received, opened/read, or purchased products from romantic relationships or matchmaking spam e-mail. Opening/reading was significantly associated with being single and seeking a relationship and non-white status. Purchasing was significantly associated with being single and seeking a relationship and increasing age. No association existed for psychological variables of self-esteem and perceived stress. Spam e-mail has an interested consumer audience among those single and seeking a relationship. Ethical e-mail marketing and advertising of online dating products can appeal to college students.

Keywords: Internet; electronic mail; marketing; advertising; consumer behavior; e-commerce
**Introduction**

The use of online dating websites is increasingly a very popular way to contact prospective individuals to meet and date. According to the Pew Internet and American Life Project, 37% of the Internet users from the United States who are single and looking for a romantic partner viewed an online dating website (Madden & Lenhart, 2006). According to Hitwise, there are approximately 1,400 dating websites in North America (Scott, 2009). According to Forrester Research, in 2008, dating websites were the third highest source of online revenue at $957 million dollars (Datingsitesreviews.com, 2009).

Commercial online dating websites are an extension of the older form of classified advertisements in print media such as those in newspapers. The online dating websites allow for much more than just brief text content. Features include lengthy descriptions, search abilities for specific criteria (e.g., height, body type), pictures, and the ability to contact by e-mail (Hardey, 2004; Whitty, 2008). There are also Internet matchmaking or marriage agencies which typically have women interested in marriage from developing or lower income nations on their rosters. These women are interested in marriage and also the greater economic opportunities of living a married life to a man in a Western European or North American country. One country of interest to men from Western European or North American countries consists of those women from Russia who participate in these marriage agency websites (Luehrmann, 2004; Sahib, Konig, & van Witteloostuijn, 2006; Vartti, 2001).

Although many Internet marriage agencies are genuine, there are Internet scams where typically a woman or the marriage agency will e-mail men with no intent of marriage and only with the intent of obtaining money from the men with whom the women corresponds (Agencyscams.com, 2009). Spam e-mail can be a source of both genuine and scam dating and matchmaking websites. A survey from the Japan Computer Communications Association reported that 78% of spam e-mail in 2004 and 90% of spam e-mail in 2005 were on matchmaking and dating topics (Imaizuni, 2006). Figure 1 shows two different real spam e-mail messages received by the first author on the topic of romantic relationships and matchmaking.
### Figure 1
Spam E-mail Messages on Romantic Relationships and Matchmaking

<table>
<thead>
<tr>
<th>Message 1</th>
</tr>
</thead>
</table>
| My best wishes to you!  
I am Julia, 22 y.o.,  
I am looking for man to have a strong family.  
And you?  
I am online now, let’s chat?  
My profile and new photos are HERE |
| Note! New free services! Check info at the site!  
To unsubscribe - reply with “delete” |
| kisses, Administrator Natalia |

<table>
<thead>
<tr>
<th>Message 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Browse 1000s of profiles of black singles in your area. Join FREE! – Click Here</td>
</tr>
</tbody>
</table>

College students are a market segment potentially interested in online dating. One survey of college students and their use of the Internet to find a mate found that over 40% had a primary goal of friendship and not looking for romance or a mate (Knox, Daniels, Sturdivant, & Zusman, 2001). Another study found differences between undergraduate and graduate students where there was greater interest among graduate students for both thinking about and also for taking specific steps toward using the Internet to meet a potential mate. Also, undergraduate students had greater trust concerns than graduate students about using the Internet to form relationships (Donn & Sherman 2002). There are mixed findings with regard to anxiety levels among college students and formation of online relationships. One study reports that anxiety reduction was a major reason for use of the Internet to attempt to form relationships (Knox et al., 2001). However, another more recent study did not find any relationship for either social anxiety levels or dating anxiety levels with regard to use of the Internet to form relationships (Stevens &
Morris, 2007). The differences in these findings for anxiety may be due to the growing use of the Internet for social purposes and also the shift of Internet dating to become mainstream practice (Valkenburg & Peter, 2007). We are not aware of any studies on the role of spam e-mail with regard to facilitating interest in romantic relationships or matchmaking.

Demographics

There are a number of demographic factors that can potentially be related to online dating and interest in spam e-mail about online dating. Age is associated with both the frequency of visiting a dating website and also of posting a profile on a dating website. One study reported incremental increases in use of online dating websites by age group where those from the age group of 18 to 29 had the greatest use, followed by those ages 30 to 49, and followed by those ages 50 and older (Madden & Lenhart, 2006). Another study reported that those from the age groups of 30 to 40 and also 40 to 50 are more active users of online dating websites than those from the age groups of 18 to 29 and 51 to 60 (Valkenburg & Peter, 2007). Another study from a sample of those ages 18 to 64 found that increasing age was associated with responding to an online personal ad, posting an online personal ad, meeting someone face-to-face when the initial contact was online, increasing scores in an online dating activities participation index, and using the Internet to seek marital and sexual partners (Stephure, Boon, MacKinnon, & Deveau, 2009). Among college students, graduate students who were older in age than undergraduate students had greater interest in using the Internet to meet a potential mate (Donn & Sherman, 2002).

Besides age, gender can be related to online dating and interest in spam e-mail about online dating. One study reports that men visit online dating websites at a greater frequency than women (Valkenburg & Peter, 2007). However, another study reports that there are similar percentages for both men and women who use online dating websites (Madden & Lenhart, 2006). Also, men with online dating profiles are almost five times more likely than women to prefer to date those with thin body type (Glasser, Robnett, & Feliciano, 2009). However, another study did not find any differences between men and women with online dating profiles for preference of attributes for someone to date. These preferences included weight and personality type (Whitty, 2008).

In addition to gender, race/ethnicity can be related to use of online dating and interest in spam e-mail about online dating. Among participants of online dating websites, white men were significantly more likely than all groups of non-white men (African American, Latino, and
Asian) to prefer to date women with thin body type. There was no such pattern for women (Glasser et al., 2009). Among African American participants of an online dating website, the willingness of these African American men to date those of another race/ethnicity ranged from 64% for Native Americans to 83% for Hispanics. The willingness of African American women to date those of another race/ethnicity ranged from 38% for Asians to 61% for Hispanics (Wilson, McIntosh, & Insana, 2007).

In addition to personal demographics, Internet related characteristics can be related to use of online dating and interest in spam e-mail about online dating. Participants spend more than three hours weekly participating in online dating websites (Stephure et al., 2009). Also, increased number of hours of Internet use is associated with increased favorable beliefs about online romantic relationships (Anderson, 2005).

**Psychological Concerns**

Self-esteem can potentially be related to online dating and interest in spam e-mail about online dating. Among college students, lower self-esteem levels are associated with increased romantic communication on the MySpace social networking website (Dong, Urista, & Gundrum, 2008). For those with low involvement in romantic relationships, low self-esteem is associated with greater use of online dating services than those with high self-esteem. This pattern also occurred among those high in sociability. Also, among those who are high in sociability, for those with high involvement in romantic relationships, high self-esteem is associated with greater use of online dating services than for those with low self-esteem (Kim, Kwon, & Lee, 2009). However, physical self-esteem was not associated with seeking casual sexual partners online (Peter & Valkenburg, 2007).

Also, as stress has been studied with regard to its impact on romantic relationships, it can potentially be related to online dating and interest in spam e-mail about online dating. Both attachment type of a partner and relationship conflict are associated with stress among college students. Men who had an insecurely attached girlfriend had the highest stress levels while men with a securely attached girlfriend had the lowest stress levels (Powers, Pietromonaco, Gunlicks, & Sayer, 2006). Also, among college students in romantic relationships, there was a significant relationship of dating relationship satisfaction with decreased dating relationship stress (Tolpin, Cohen, Gunthert, & Farrehi, 2006).

**Theoretical Model**
The theory of hyperpersonal computer mediated communication (Walther, 1996) was used as the theoretical framework for this study. This theory proposes that certain types of computer mediated communication have higher levels of emotion and affection than face-to-face communication. This hyperpersonal computer mediated communication is proposed to occur when an individual believes that there are things in common with the other party, there is physical separation, and the communication is being done through a limited-cues channel that allows the individual to selectively choose what to display or to edit without having to deal with reality (Walther, 1996). Additional research supporting this theory was done with newly acquainted virtual groups. Short-term groups with photographs displayed had greater levels of affection than those without photographs displayed (Walther, Slovacek, & Tildwell, 2001). We thought that this theory is applicable toward understanding the behavior of an individual responding to a contact from spam e-mail on romantic relationships or matchmaking. An attractive picture may be displayed in this spam e-mail and the individual recipient may believe that there is something in common with the picture of the individual from the spam e-mail. The environment is through physical separation and the communication allows both parties to selectively choose what to display and edit. Short-term affection can occur and this can result in the individual recipient responding to requests from the individual sending the spam e-mail.

Hypotheses

Hypothesis 1: Is spam e-mail a venue for college students to: a) open and read spam e-mail on romantic relationships or matchmaking?, b) purchase from the website provided from the spam e-mail on romantic relationships or matchmaking? We hypothesize that there may be greater interest among those who are “single and seeking a relationship” versus those who are not and we compare those who are single and seeking a relationship to those who are not for behavior with regard to opening/reading and also purchasing from spam e-mail on romantic relationships or matchmaking.

Hypothesis 2: Are demographic factors (age, gender, race/ethnicity, hours of daily Internet use, number of spam e-mails received daily) associated with college student behavior to: a) open and read spam e-mail on romantic relationships or matchmaking?, b) purchase from the website provided from the spam e-mail on romantic relationships or matchmaking? Based upon the literature reviewed above, we believe that each of these
demographic variables may potentially be associated with the spam e-mail on romantic relationships or matchmaking outcomes.

Hypothesis 3: Are psychological factors (self-esteem, perceived stress) associated with college student behavior to: a) open and read spam e-mail on romantic relationships or matchmaking?, b) purchase from the website provided from the spam e-mail on romantic relationships or matchmaking? Based upon the literature reviewed above, we believe that these psychological variables may potentially be associated with the spam e-mail on romantic relationships or matchmaking outcomes.

Method
Participants and Procedures
We surveyed 200 students using convenience sampling from a 4-year undergraduate commuter college located in New York City. The response rate of 94.3% was based upon 200 completed surveys from the 212 students approached. Participants were approached and asked to complete an anonymous survey in the cafeteria, classrooms, library, and other public places at the college. Informed consent was obtained. The survey was exempt from Institutional Board Review and was conducted in accordance with the ethical principles of the Declaration of Helsinki. All data collection occurred during May 2007.

Measures
Demographics
Demographic variables included age measured in years, sex, race/ethnicity categorized as white versus non-white, hours of Internet use each day, and number of spam e-mails received each day.

Single and Seeking a Relationship Item
Participants were asked, “Are you single and seeking a relationship?” with choices of “yes” or “no.”

Spam E-mail Items
These items were: 1) Did you receive spam e-mail on romantic relationships/matchmaking in the past year?, 2) If yes, did you open and read the e-mail?, and 3) If you opened and read the e-mail, did you purchase anything from the website provided?
Psychological Questionnaires

Rosenberg Self-esteem Scale

The Rosenberg Self-esteem Scale includes 10 items measured on a Likert-style scale ranging from 1=strongly disagree to 4=strongly agree. Five items are reverse coded. Higher scores indicate greater self-esteem. A sample item is, “I take a positive attitude toward myself.” It is a reliable and valid measure and has Cronbach alpha reliability ranging from 0.77 to 0.88 (Rosenberg, 1986). Cronbach alpha reliability in this sample was 0.87.

Perceived Stress Scale

The Perceived Stress Scale includes 10 items measured on a Likert-style scale ranging from 0=never to 4=very often. Four items are reverse coded. Higher scores indicate greater perceived stress. A sample item is, “In the last month, how often have you felt nervous and "stressed"?” It is a reliable and valid measure and has Cronbach alpha reliability ranging from 0.80 to 0.86 (Cohen & Williamson, 1988). Cronbach alpha reliability in this sample was 0.84.

Statistical Analyses

As appropriate, analysis of variance (ANOVA), the Pearson chi-square test, or the Mann-Whitney test were used to compare those who were single and seeking a relationship to those who were not for the relevant variables measured. Pearson chi square analyses were used to compare the responses of those single and seeking a relationship to those who were not for the separate questions of received, opened/read, and purchased from spam e-mail about romantic relationships/matchmaking topics. Lastly, we conducted a series of logistic regression analyses with two different outcome variables of 1) opened and read from spam e-mail about romantic relationships/matchmaking topics, and 2) purchased from spam e-mail about romantic relationships/matchmaking topics. For each outcome variable three models were conducted. The first model was conducted with just the independent variable of single and seeking a relationship status. The second model included the independent variable and also the relevant demographic variables of age, sex, race/ethnicity, hours of Internet use, and number of spam e-mails received. The third model included the independent variable, the relevant demographic variables above, and also the psychological variables of self-esteem and perceived stress. SPSS version 17 was used for all analyses (SPSS, 2008).
Results

Table 1 shows comparisons for those single and seeking a relationship (35.5%, n=71) to those who were not (64.5%, n=129). The average age was almost 21 years for both groups. There were a significantly lesser percentage of women and of non-whites for those single and seeking a relationship as compared to those who were not. Both groups used the Internet for approximately 4 hours each day. Those single and seeking a relationship received a lesser number of spam e-mails each day, had lower self-esteem levels, and greater perceived stress levels as compared to those who were not.

Table 1
Characteristics of a Sample of 200 Individuals Regarding their Single and Seeking a Relationship Status

<table>
<thead>
<tr>
<th>Variable</th>
<th>Single and Seeking a Relationship</th>
<th>Single and Seeking a Relationship</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Age (years)a</td>
<td>20.9 (2.13)</td>
<td>20.9 (1.75)</td>
<td>0.98</td>
</tr>
<tr>
<td>Sexb</td>
<td></td>
<td></td>
<td>0.02</td>
</tr>
<tr>
<td>Men</td>
<td>29.5% (38)</td>
<td>46.5% (33)</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>70.5% (91)</td>
<td>53.5% (38)</td>
<td></td>
</tr>
<tr>
<td>Race/ethnicityb</td>
<td></td>
<td></td>
<td>0.01</td>
</tr>
<tr>
<td>White</td>
<td>36.4% (47)</td>
<td>56.3% (30)</td>
<td></td>
</tr>
<tr>
<td>Non-white</td>
<td>63.6% (82)</td>
<td>43.7% (35)</td>
<td></td>
</tr>
<tr>
<td>Hours Internet use (daily)a</td>
<td>3.9 (2.62)</td>
<td>4.0 (2.12)</td>
<td>0.27</td>
</tr>
<tr>
<td>Number of spam e-mails (daily)c</td>
<td>29.3 (72.94)</td>
<td>26.3 (34.17)</td>
<td>0.04</td>
</tr>
<tr>
<td>Rosenberg self-esteema</td>
<td>32.0 (4.82)</td>
<td>28.2 (5.78)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Perceived stressa</td>
<td>18.5 (5.88)</td>
<td>20.5 (6.39)</td>
<td>0.02</td>
</tr>
</tbody>
</table>
Note: M = mean, SD = standard deviation. P-values for hours Internet use are from logarithmically transformed variables due to presence of skewness. Non-logarithmically transformed values are shown for the mean and standard deviation values for ease of understanding. Number of spam e-mails received, although skewed, was not logarithmically transformed due to 8 individuals with values of 0, precluding a logarithmic transformation.
aAnalysis of variance performed, bPearson chi-square test performed, cMann-Whitney test performed.

Table 2 shows comparisons for single and seeking a relationship and spam e-mail behaviors. Both groups of those who were single and seeking a relationship and those who were not had more than three-quarters who received romantic relationships/matchmaking spam e-mail. This did not significantly differ between the groups. Those who were single and seeking a relationship had significantly greater percentages than those who were not to open and read romantic relationships/matchmaking spam e-mail. More than one-third of those who were single and seeking a relationship did so. Also, those who were single and seeking a relationship had significantly greater percentages than those who were not to purchase from the website provided in the romantic relationships/matchmaking spam e-mail. Almost one-quarter of those who were single and seeking a relationship did so while only slightly more than 5% did so from those who were not single and seeking a relationship.

Table 2
Single and Seeking a Relationship Status and Spam E-mail Behaviors

<table>
<thead>
<tr>
<th>Variable</th>
<th>Single and Seeking a Relationship</th>
<th>Single and Seeking a Relationship</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>% (#)</td>
<td>% (#)</td>
<td>% (#)</td>
<td></td>
</tr>
<tr>
<td>(n=129)</td>
<td>(n=71)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Received romantic friendships/matchmaking e-mail</td>
<td></td>
<td></td>
<td>0.18</td>
</tr>
<tr>
<td>No</td>
<td>20.2% (26)</td>
<td>12.7% (9)</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>79.8% (103)</td>
<td>87.3% (62)</td>
<td></td>
</tr>
</tbody>
</table>
Table 3 shows the logistic regression analyses for opened and read spam e-mail about romantic relationships/matchmaking topics. In all 3 models, status of single and seeking a relationship was significantly associated with increased odds for opened and read spam e-mail about romantic relationships/matchmaking topics. The odds ratios ranged from more than 3 for the univariate model to more than 4 for the models that adjusted for the covariates of demographics and psychological variables. Also, non-white race was significantly associated with increased odds for opened and read spam e-mail about romantic relationships/matchmaking topics with odds ratios ranging from 2.65 to 3.17.

**Table 3**

Logistic Regression Analyses for Opened and Read Romantic Relationships/Matchmaking Spam E-mail

<table>
<thead>
<tr>
<th>Variables</th>
<th>OR (95% CI) (n=200)</th>
<th>OR (95% CI) (n=197)</th>
<th>OR (95% CI) (n=197)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 3</td>
</tr>
<tr>
<td>Single and Seeking a Relationship</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Yes</td>
<td>3.61 (1.76, 7.40)***</td>
<td>4.91 (2.22, 10.85)***</td>
<td>4.06 (1.75, 9.40)**</td>
</tr>
<tr>
<td>Age</td>
<td>--</td>
<td>1.11 (0.92, 1.33)</td>
<td>1.17 (0.96, 1.43)</td>
</tr>
<tr>
<td>Sex</td>
<td>--</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>
Table 4 shows the logistic regression analyses for purchased from spam e-mail about romantic relationships/matchmaking topics. In all 3 models, status of single and seeking a relationship was significantly associated with increased odds for opened and read spam e-mail about romantic relationships/matchmaking topics. The odds ratios ranged from more than 5 for the univariate model to more than 7 for the model that adjusted for the covariates of demographics. Also, increased age was significantly associated with increased odds for purchased from spam e-mail about romantic relationships/matchmaking topics. Lastly, increased perceived stress approached significance (p=0.072) for increased odds for purchased from spam e-mail about romantic relationships/matchmaking topics.

Table 4

<table>
<thead>
<tr>
<th>Variables</th>
<th>OR (95% CI) n=200</th>
<th>OR (95% CI) n=197</th>
<th>OR (95% CI) n=197</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 3</td>
</tr>
<tr>
<td>Single and Seeking a Relationship</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Yes</td>
<td>5.49 (2.15, 14.00)**</td>
<td>7.13 (2.58, 19.70)**</td>
<td>5.35 (1.84, 15.51)**</td>
</tr>
<tr>
<td>Age</td>
<td>--</td>
<td>1.30 (1.04, 1.64)*</td>
<td>1.45 (1.12, 1.88)**</td>
</tr>
</tbody>
</table>

Note: OR=odds ratio, CI=confidence interval, *=p<0.05, **=p<0.01, ***=p<0.001
Sex

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.00</td>
<td>1.42 (0.54, 3.72)</td>
</tr>
</tbody>
</table>

Race

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>Non-white</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.00</td>
<td>2.06 (0.79, 5.41)</td>
</tr>
</tbody>
</table>

Hours Internet

|       | 1.65 (0.23, 12.10) | 1.78 (0.24, 13.25) |

Number of spam e-mails

|       | 1.00 (0.99, 1.01) | 1.00 (0.99, 1.01) |

Rosenberg self-esteem

|       | -- | 0.98 (0.89, 1.09) |

Perceived stress

|       | -- | 1.10 (0.99, 1.22) |

Note: OR=odds ratio, CI=confidence interval, \#=p<0.08, *=p<0.05, **=p<0.01, ***=p<0.001

Discussion

We found strong support for the first hypothesis that those single and seeking a relationship had significantly greater percentages than those who were not single and seeking a relationship for opening/reading and also purchasing from spam e-mail about romantic relationships or matchmaking. A similar significant pattern was found for those single and seeking a relationship in the multivariate analyses adjusting for demographics and psychological variables. We found partial support for the second hypothesis for demographic factors. Only non-white race/ethnicity was associated with opening/reading spam e-mail about romantic relationships or matchmaking. Only increasing age was associated with purchasing from spam e-mail about romantic relationships or matchmaking. We did not find support for the third hypothesis for psychological factors. None of the psychological factors of self-esteem or perceived stress were associated with either opening/reading or purchasing from spam e-mail about romantic relationships or matchmaking.

Prevalence of Spam E-mail About Romantic Relationships or Matchmaking

We found that among individuals single and seeking a relationship, 33.8% opened/read and 23.9% purchased from spam e-mail about romantic relationships or matchmaking. There are two other studies on health topics and spam e-mail where a type of spam e-mail is analyzed with regard to presence/absence of a topic potentially related to the spam e-mail topic (Fogel & Shlivko, 2009; Fogel & Shlivko, 2010). In a study on sexual performance products, among those
with sexual performance problems, 66.7% opened/read and 46.7% purchased from the spam e-mail on sexual performance products (Fogel & Shlivko, 2009). In a study on weight loss products, among those with weight problems, 41.5% opened/read and 18.5% purchased from the spam e-mail on weight loss products (Fogel & Shlivko, 2010). The percentage for opening/reading spam e-mail on romantic relationships or matchmaking is lower than the percentages for the two health topics of sexual performance and weight loss. However, the percentage for purchasing from spam e-mail on romantic relationships or matchmaking is similar to the percentage for weight loss while it is only almost half the percentage for sexual performance.

**Single and Seeking a Relationship and Spam E-mail**

We found that the status of single and seeking a relationship is associated with odds ratios of at least 3 for opening/reading and at least 5 for purchasing from spam e-mail on romantic relationships or matchmaking. These relatively high odds ratios suggest that college students who are single and seeking a relationship find these spam e-mails of interest and are responding to these spam solicitations. One study reports that 28.5% of college students used the Internet to develop at least one online relationship (Stevens & Morris, 2007). The types of relationships developed were friend (47%), acquaintance (37%), romantic partner (10%), and close/best friend (5%). Although spam e-mail was not focused upon in that study, our current results for spam e-mail reinforce the findings from that study and suggest that the market for romantic relationships or matchmaking is an important one. Consumers who are single and seeking a relationship are even willing to engage with spam e-mail to pursue their goal of obtaining a relationship.

**Race/Ethnicity and Spam E-mail**

We found that non-white race/ethnicity is associated with odds ratios of at least 2 for opening/reading spam e-mail on romantic relationships or matchmaking. This differs from what is known about the market for online dating websites where there are no reported differences for race/ethnicity among those of white, African American and Hispanic race/ethnicity for using online dating websites (Madden & Lenhart, 2006). Our findings for spam e-mail may be understood from the findings that among preferences for features of an online dating website, African Americans had greater interest than whites for a preference for receiving a weekly list of
potential matches by e-mail (Fogel & Sardella, 2005). There are apparently aspects of spam e-mail that are attractive to those of non-white race/ethnicity.

*Age and Spam E-mail*

We found that increased age is associated with increased odds ratios for purchasing from spam e-mail on romantic relationships or matchmaking. This is consistent with previous research reporting that increased age is associated with interest in online dating (Donn & Sherman, 2002; Madden & Lenhart, 2006; Stephure et al., 2009; Valkenburg & Peter, 2007). Our study adds two points from what is currently known among the market segment of college students. First, spam e-mail is considered an acceptable venue for some individuals and there is use of spam e-mail for online romantic relationships or matchmaking. Second, even within the narrow age band of college students in their teens or twenties, increasing age is associated with increased interest.

*Psychological Concerns*

We did not find any statistical significance for self-esteem or perceived stress and either opening/reading or purchasing from spam e-mail on romantic relationships or matchmaking. Although these psychological concerns can potentially be related to both online and face-to-face dating approaches and behaviors, they are not relevant variables for spam e-mail on romantic relationships or matchmaking.

*Limitations*

This study is only from one college and may not generalize to other colleges. Also, we did not inquire about the website addresses from the specific websites purchased from the spam e-mail, so we are unable to determine if particular attributes of the advertising on a website influenced the consumers to purchase from that website.

*Conclusion*

Spam e-mail is a venue attractive to college students and they purchase from spam e-mail marketing romantic relationships and matchmaking products. We are not advocating distribution or sending of spam e-mail. We suggest that ethical marketers analyze the attributes of this spam e-mail and the websites to where consumers are directed by this spam e-mail to determine if there are features that can be improved upon in their ethical marketing campaigns for online dating products focusing on romantic relationships and matchmaking. We also suggest that there
may be an especially important market segment of those of non-white race/ethnicity who are interested in products in romantic relationships and matchmaking. For this market segment, ethical marketers should study what is attractive to those of non-white race/ethnicity for opening/reading spam e-mail. They should incorporate this knowledge with what they already know about click-through rates to improve the click-through rates of those of non-white race/ethnicity for ethical marketing campaigns for products on romantic relationships and matchmaking.
References


