

Dating Anxiety and the Utilization of Mobile Dating Applications

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ABSTRACT: This study examines dating anxiety and the utilization of mobile dating applications (e.g. Tinder, Coffee Meets Bagels, Bumble, Grindr, Hinge). As dating apps are currently popular in the dating culture, this study examines whether low anxiety, dating users are more likely to utilize dating apps, which is similar evidence by previous studies, and if there is a correlation between dating anxiety and the use of mobile dating applications. Data was gathered with Amazon Mechanical Turk. Results revealed that there is an association with dating anxiety and using mobile dating apps, particularly as individuals utilize the app(s) longer the likelihood the app user will passively contact with another user. Results also were inconsistent with previous studies' findings in regards to whether individuals with low anxiety are more likely to utilize dating apps. Limitations are discussed. More research is needed to support previous literature and gain a more comprehensive sample as dating apps are especially popular with this current dating culture.

KEYWORDS: Dating Applications, Anxiety, Online Dating

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I. INTRODUCTION

With technology continuously changing, online dating and the utilization of dating applications are becoming the standard approach to the dating industry (Finance Processes, 2018). In January 2018, Statista discovered that 12% of 18 to 29-year-olds met their significant other or girlfriend/boyfriend and are currently in a relationship with their significant other or girlfriend/boyfriend through online applications (Lin, 2019). These online applications include over 1,500 dating applications and websites (Lin, 2019). Therefore, there are more opportunities to pursue dating and romance with the invention of dating applications and sites.

Tinder, Plenty of Fish, Match.com, and OkCupid are the leading dating applications and websites for the potential daters in the U.S (Lin, 2019). But, in regards to continuous engagement by the users, Grindr with 12 hours 26 minutes per month, Tinder with 2 hours and 39 minutes per month, OkCupid, and Bumble are primarily used. Lin (2019) indicated that Tinder's primary demographic is 18 to 29-year-old users, while Match.com includes 30 to 44-year-old users. With these options, individuals have more chances to date and pursue their dating intentions.

Smith (2016) revealed that there are different thoughts and feelings with their experiences of online dating, both positive and negative. Positive experiences included 80 % of Americans shared and agreed that online dating is an enjoyable approach to meet other individuals. Americans also indicated that it permits users to have more options to find the best match. They also agreed that it's faster and more useful to meet others. While negative experiences included 45% of users agreeing that there's more risk for danger, other experiences included hindering people from settling down and the stigma of desperation with online dating. However, online dating users shared that they had more positive outlooks with online dating compared to users with less contact.

With this dating research, there is a lack of research with studying a larger, diverse sample of dating apps users with dating anxiety and the use of most popular dating apps (Valkenburg and Peter, 2007; Stevens and Morris, 2007; Sumter and Vandenbosch, 2019). Although there are various dating applications and websites, they may be an opportunity for individuals with dating anxiety. According to the National Social Anxiety Center (2016), statistics reveal that about 3.7 percent of the U.S. population ages 18 to 54 (about 5.3. million) are diagnosed with a social phobia yearly. Their statistics indicate that social phobia appears more in men compared to women. With the dating industry evolving with dating applications and websites, dating is becoming a complicated process (National Social Anxiety Center, 2016). Individuals with social anxiety tend to worry, especially with their clothes, hair, time, location, topics to discuss on the date, and more. Those with social anxiety impact their willingness to date due to their fears, also known as dating anxiety. Individuals with dating anxiety tend to avoid dates, such as canceling dates, due to their concerns and worries. Therefore, individuals with dating anxiety could benefit from the evolution of dating applications.

In a research study by Valkenburg and Peter (2007), they examined the demographic factors of online daters. They also investigated the validity with his two hypotheses (social compensation and the rich-get-richer) that investigated peoples' preferences for Internet online dating. The social compensation hypothesis suggested that online dating would be helpful for individuals with high dating anxiety because of easy and efficient access and the ability to help with weaknesses in non-online dating. While the rich-get-richer hypothesis is that low dating anxiety users would be a benefit in online dating. This hypothesis is because they have strong dating abilities (e.g., dating skills or use the Internet to find a partner). This study consisted of Dutch Internet users ($N = 367$); age ranged from 18 to 60 years old, who completed an online dating anxiety survey. They discovered that 43% of their participants used a dating site to obtain a date or pursue romance. They also found that there was no association with online dating and income and educational level. Internet users, ages 30 to 50 years old, were the most users effectively utilizing online dating services. Low dating anxiety users were also the most active users. Therefore, this evidence supports that low anxiety-dating users were using online dating services more dynamically compared to the high anxiety dating users.

Another study by Stevens and Morris (2007) investigated college students with high dating/social anxiety symptoms and whether they would establish and keep their online relationships. They also examined the participants' computer services (i.e. instant messaging (IM), web logs (blogs), bulletin boards, and online personal dating services). Researchers discovered that high dating anxiety individuals were not as likely as low anxiety dating individuals to make relationships and use the Internet. These results were consistent with Valkenburg and Peter (2007) that low dating anxiety individuals are more likely to use dating services or the Internet to make and maintain online relationships.

In Sumter and Vandembosch's (2019) study, they studied the use of dating applications and motivations in association with their identified demographics, such as gender and sexual orientation, and their personality with college students from the University of Amsterdam. They discovered that half of their participants used a dating application (i.e. Tinder, Grindr, Happn, and Scruff). The participants reported Tinder being the most used. The researchers also revealed that individuals that did not use dating applications were heterosexual, high in dating anxiety, and low in sexual permissiveness compared to individuals that used dating applications. While dating apps users tend to be non-heterosexual, low in dating anxiety, and high in sexual permissiveness. These results were also similar to previous studies (Valkenburg & Peter, 2007; Stevens & Morris, 2007). Therefore, dating applications users tend to be individuals with low dating anxiety.

Due to these findings, it supports Kraut et al.'s (2002) the rich-get-richer model. Their model indicates the use of the Internet and its effects on one's psychological well-being. Kraut et al. (2002) discovered that extravert had more positive outcomes (e.g. increased well-being, lower levels of loneliness, and decreased negative affect). While introverts' outcomes were worse (e.g., decreased well-being and maintenance of previous loneliness). Therefore, individuals with strong social supports and skills (low dating anxiety) are more likely to use the Internet for dating compared to individuals that lack support and social skills (high dating anxiety).

Thus, the purpose of this study will examine dating apps users and dating anxiety through the Amazon Turk Mechanical to gather a more comprehensive sample across the United States. There were many limitations among the various studies, but significant barriers were the lack of evidence with this generation of dating applications in the United States (e.g., Tinder, Grindr, Coffee Meets Bagels, Hinge, and Bumble) while examining dating anxiety and the examination of college students or young adults. With the assistance of Amazon Turk Mechanical, the researchers will gather more comprehensive data to explore these limitations in the study. Thus, this study's research questions include, is dating anxiety correlated with the use of mobile dating applications (i.e. Tinder, Coffee Meets Bagels, Bumble, Hinge, and Grindr) and are individuals with low dating anxiety more likely to use mobile dating application(s) for dating?

II. METHODOLOGY

Participants

Participants were over 24 years old and ages ranged from 24 to 60 and above with participation from both males and females ($N = 404$). This sample had 48.5% males and 51.5% females. Participants' ages included 48.3% of participants ranging from 24-29 years old, 24.3% of participants ranging from 30-35 years old, 10.9% of participants ranging from 36-41 years old, 7.4% of participants ranging from 42-47 years old, 5.4% of participants ranging from 48-53 years old, 1.5% of participants ranging from 54-59 years old, and 2.2% of participants from 60 and above. Participants' sexual orientation included 79.5% reported heterosexual, 4% reported homosexual, 15.1% reported bisexual, and 1.5% reported other. Also, participants reported that their sexual partners ranged from 0 to 200.

Participants' ethnicities included 10.9% Asian, 10.1% African-American, 9.2% Hispanic, 4.5% Native Americans, .5% Native Hawaiian/Pacific Islander, 61.1% Caucasian, and 3.7% Two ethnicities or more. Participants also reported their marital status with 63.1% as single, 27.7% as married, 7.9% as divorced, and

1.2% as widowed. Participants reported their highest education degree earned with 29.5% obtaining their high school degree, 55.9% completing their bachelor's degree, 12.1% earning their master's degree, 2% achieving their doctorate degree, and .5% reported none. In addition, participants reported their religious beliefs which included 42.6% Christians, 15.8% Catholics, 2.5% Hindus, 2.2% Islamic, 2% Buddhists, 14.9% Agnostics, 10.1% Atheists, 9.9% Others. Lastly, participants indicated their income ranges from \$0 to \$700,000.

Materials

Through Amazon Turk Mechanical Turk (MTurk), each participant was given a link to a Google Forms where they completed a survey which typically took about 10 to 15 minutes to complete. The initial survey included a demographics section (e.g. sex, ethnicity, age, educational degree, religious affiliation/spiritual preference, and sexual orientation) and questions that were relevant to mobile dating application use, such as often they use Tinder, Coffee Meets Bagels, Bumble, Hinge, Grindr, or other dating apps, their average "matches" with using the dating apps, hours spent daily with using the apps, specifying "other" dating application used, whether they met their "matches" in person (face to face) or kept in contact with them after meeting their match, their duration of how long they kept in contact with their match (e.g. day(s), week(s), month(s), year(s)), and their outcome with their "matches" (e.g. have a relationship with, kissed with, had a sexual interaction with, had a casual sexual relationship with, and became friends with). After, participants completed question asking about their dating history which included how many dates they had within the last months, the past 3 months, and whether they compare themselves to particularly their peer or someone who is the same age as themselves in regards to their social interaction with an individual of the opposite sex. Lastly, they participated in completing the Dating Anxiety Survey (DAS). This survey was modified to tailor to mobile dating applications. Originally, the DAS consists of 23 items that were focused toward college students or young adults. Consequently, two items ("Sitting next to a guy in a class by your choice of seats" and "Being introduced to a guy while with a group of your friends") were removed due to its inability to could adapt to what it being measured with dating anxiety and mobile dating applications.

Procedure

Participants were recruited through Amazon Mechanical Turk where workers participate and complete human intelligent tasks (HITs) and they are compensated for their completion of online surveys. The criteria to participate in our study was that the workers had to over 24 years old and live in the U.S. Participants, then, selected the HIT and were asked to read a consent form to complete the questionnaire. After they read the consent form, participants were given a link to Google Forms. Participants, first, completed the questions about demographics, daily hours spent on their mobile dating applications, to specify "other" dating application used, if they met their "match" in person (face to face), kept in contact with their "match," the duration of how long they kept in contact with their "match," and the outcome with their "match" (e.g. e.g. have a relationship with, kissed with, had a sexual interaction with, had a casual sexual relationship with, and became friends with). Participants revealed with their dating history and completed the Dating Anxiety Survey (DAS) which was modified to measure dating anxiety and utilization of mobile dating applications (e.g. Tinder, Coffee Meets Bagels, Bumble, Hinge, Grindr, and other apps). After completion of questionnaire, they were given compensation of \$0.25 for their labors.

III. DISCUSSION

The purpose of this study was to examine the utilization of mobile dating application(s) and dating anxiety through Amazon Mechanical Turk to gather more extensive data. Previous studies examined online dating through outdated services, such as instant messaging (IM), web logs (blogs), bulletin boards, and online personal dating services. Past studies' results indicate that individuals who are low in dating anxiety tend to use online dating services or mobile dating applications. As technology continues to grow, this generation has built an array of mobile dating applications (i.e. Tinder, Coffee Meet Bagels, Bumble, Hinge, Grindr) that offer many services which include potential fees to enhance one's experience to date or find someone. Thus, this study wanted to examine if there is an association with use of mobile dating application(s) and dating anxiety, in addition to whether individuals with low dating anxiety are more likely to use mobile dating application(s) for dating. Results were not consistent with previous literature findings. A possible explanation is that the sample size did not provide adequate evidence to determine whether individuals with low dating anxiety are more likely to use mobile dating application(s) for dating although the sample size was considerably larger than most sample sizes. The researchers determined which participants met the criteria with low dating anxiety ($N = 18$) and high dating anxiety ($N = 79$) by calculating which participants were under 25% (low dating anxiety) and which participants met higher than 75% (high dating anxiety) of the participants' dating anxiety total. Unfortunately, researchers did not find significant evidence to support that low dating anxiety individuals are more likely to engage in mobile dating application(s).

Although, results revealed differences with females and males with dating history and how often (e.g. almost never, once a month, multiple times per month, once a week, multiple times per week, every day, multiples time a day) an individual utilizes mobile dating app(s). It seems that males were more likely to attend more dates within the last month and spent more time on their dating app(s) compared to females. Results also revealed that there wasn't a significant difference between males and females with the dating anxiety subscales, passive contact, active intentions of dating, and dating interactions, similar to Calvert et al.'s (1987) results.

Results also varied with associations regarding dating anxiety subscales, dating history, and use of mobile dating applications. Similar to Calvert et al.'s (1987) study, results displayed that there is a strong, positive relationship with each subscale. For instance, if an individual had the intentions of passively contacting another individual to date then it is highly likely that this individual will have active intentions of dating. These results also established that there is a relationship between dating anxiety subscales and dating history. Results revealed that there is a strong, positive association with dating within the last and dating within the last 3 months. Thus, if an individual attended a date(s) within the past month then it is most likely that they attended dates within the last 3 months. Comparing oneself to others was also a component with obtaining one's dating history. These findings disclosed that if an individual compares oneself to their peers and the amount of social interaction with members of the opposite sex then they could partake in passive contact and/or active intentions of dating. Results disclosed that there was also a small, positive relationship with comparing oneself to their peers and dating with the past month and 3 months which suggests that as individuals compare themselves to their peers then they are likely to attend dates within the past month and 3 months.

There were also associations with dating anxiety subscales, dating history, and frequency of dating apps. Findings displayed that there is a small, positive relationship with passive contact and how often one uses their dating apps which suggests that the longer that one utilizes their dating apps then the higher likelihood of passive contact. This evidence potentially supports the research question whether dating anxiety is correlated with the use of mobile dating applications (i.e. Tinder, Coffee Meets Bagels, Bumble, Hinge, and Grindr). As passive contact is a subscale to measure overall dating anxiety, it suggests that there is an association between dating anxiety and utilization of mobile dating apps for dating. In addition, results indicated that there is a moderate, positive association with dating apps frequency and dates within the last month and last 3 months. It seems as an individual utilizes the dating apps more frequently then one is more likely to attend dates within the past month and 3 months. These findings also discovered that there was small, positive relationship with dating apps frequency and comparison to others as one uses the dating apps it suggests that the s/he tends to compare oneself to others.

In summary, this study did not support previous studies' results that individuals with low anxiety tend to utilize mobile dating apps compared to individuals with high anxiety. However, results suggest that dating anxiety and use of mobile dating apps are associated with each other and dating users may tend to use mobile dating apps through passive contact. More research is needed to confirm and support these findings with dating anxiety and the utilization of mobile dating apps. A major limitation of this study includes the lack of sample size with low vs. high dating anxiety, mobile dating app users. Another limitation is the self-report measure. Participants did not completely answer the open-ended questions before taking the Dating Anxiety Survey. The sample also included majority of Caucasian and young adults so although this study was comparatively diverse it could include more diversity to gain more perspective and evidence with the general population.

IV. FINDINGS

Differences between females and males

An independent-samples t-test was conducted to compare the dating history of attending dates within the last month for males and females. There was a significant difference in number of dates within the last month for males ($M = 1.95$, $SD = .064$) and females ($M = 1.75$, $SD = .057$; $t(208) = -2.268$, $p = .024$, two-tailed). The magnitude in the means (mean difference = $-.194$, 95% CI: $-.363$ to $-.026$) was very small (eta squared = $.01$). There was also a significant difference with how often a user utilizes dating apps (e.g. almost never, once a month, multiple times per month, once a week, multiple times per week, every day, multiples time a day) for males and females. There was a significant difference in scores for males ($M = 3.07$, $SD = 1.912$) and females ($M = 2.59$, $SD = 1.648$; $t(208) = -2.723$, $p = .007$, two-tailed). The magnitude in the means (mean difference = $-.485$, 95% CI: $-.835$ to $-.135$) was small (eta squared = $.02$).

Dating Anxiety Subscales

The relationship between the subscales, passive contact, active intentions of dating, and dating interactions (as measured by the Dating Anxiety Scale) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. There was a strong, positive correlation between the variables, as higher levels of passive contact with higher levels of active intentions of dating (Table 1.1). These results were

similar to Calvert, Moore, and Jensen’s (1987) study with their psychometric evaluation of the dating anxiety survey.

Table 1.1
Pearson Product-moment Correlations Between Measures of the DAS Subscales:

	1	2	3
1.Passive Contact	-	.810**	.764**
2.Active Intentions of Dating		-	.870**
3.Dating Interactions			-

** . Correlation is significant at the 0.01 level (2-tailed)

DAS Scales and Dating History

The relationship between attending dates last month and attending dates within the last 3 months (as measured by the Dating Anxiety Scale) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a strong, positive correlation between the two variables, $r = .725$, $n = 404$, $p < .000$, with attending dates within the last 3 months associated with attending dates with the past month. There is also a relationship between comparing oneself to others and two of the DAS subscales (passive contact and active intentions of dating) (as measured by the Dating Anxiety Survey) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a small, positive correlation between the variables, as higher levels of comparing oneself to others associated with higher levels of passive contact and active intentions of dating (Table 2.1).

Table 2.1
Pearson Product-moment Correlation with the DAS Subscales and Dating History

	1	2	3	4	5	6
1.Passive Contact	-	.810**	.764**	.057	.016	.149**
2.Active Intentions of Dating		-	.870**	.001	-.027	.144**
3.Dating Interactions			-	-.064	-.046	.091
4.Dates last month				-	.725**	.285**
5.Dates within the last 3 months					-	.257**
6.Comparison to others						-

** . Correlation is significant at the 0.01 level (2-tailed)

DAS Scales and Dating Apps Frequency (How often do you use dating app(s)?)

The relationship between passive contact and dating apps frequency was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a small, positive correlation between the two variables, $r = .107$, $n = 404$, $p < .031$, with higher levels of frequency of dating apps associated with higher levels of passive contact. There was also a moderate, positive correlation between the frequency of dating apps and dates within the last month and last 3 months. With frequency of dating apps and comparison to others, there was a small, positive correlation, $r = .146$, $n = 404$, $p < .003$, with higher levels of comparison to others associated with higher levels of dating apps frequency (Table 3.1).

Table 3.1
Pearson Product-moment Correlation with the DAS Subscales and Dating History

	1	2	3	4	5	6	7
1. Dating Apps Frequency	-	.107*	.097	.070	.316**	.300**	.146**
2. Passive Contact		-	.810**	.764**	.057	.016	.149**
3. Active Intentions of Dating			-	.870**	.001	-.027	.144**
4. Dating Interactions				-	-.064	-.046	.091
5.Dates within the last month					-	.725**	.285**
6. Dates within the last 3 months						-	.257**
7. Comparison to others							-

** . Correlation is significant at the 0.01 level (2-tailed)

*. Correlation is significant at the 0.05 level (2-tailed).

V. CONCLUSION

As dating apps are a popular avenue with dating, more research could replicate our findings or previous findings in regards to the rich-get-richer hypothesis. There is a lack of research with dating anxiety and the use of mobile dating applications. Through this research, individuals could gain more perspective in this popular use of dating culture and analyze what influences or hinders individuals from dating with dating apps. Future

research could include obtaining data over a period of time to analyze how users with high or low dating anxiety utilize dating apps. Possible interventions may also help individuals with high anxiety and how utilization of dating apps impacts people who participate in this new dating culture.

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