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Dating Applications versus Meeting Face-to-Face: What Is Better for Romantic Relationship Quality?

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Abstract: The use of dating applications has increased over time, as recent data illustrate that meeting online is one of the most popular ways for couples to meet in the United States. Yet, the perceptions of using dating applications and how the applications were developed may hinder the quality of relationships that form using dating applications. The goal of this study is to examine the difference in relationship quality based on whether a relationship is initiated in person or using a dating application. Data for this study come from 233 college students who completed an online survey. Of the coupled participants (n = 120), 34 met their current partner through a dating application, and of the participants who had previous dating experience (n = 169), 29 met their last partner on a dating application. Conducting independent-samples t-tests, the means of relationship quality were not significantly different for those who met their current or former partner online compared to in person. Although previously stigmatized, the results of this study illustrate that forming relationships on dating applications may be similar in quality to those that are formed in person.

Keywords: online dating; dating initiation; relationship quality

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1. Introduction

In recent years, dating applications and online dating have become far more socially acceptable and common. Online dating has transformed into one of the most common ways individuals form relationships, potentially due to the lessening of stigmas surrounding dating applications (Bergström 2021; Rosenfeld et al. 2019; Vogels and McClain 2023). Dating applications are mobile applications that individuals can use to assist with relationship initiation, also known as mobile dating applications (MDAs; Orchard 2019). Although the use of MDAs continue to increase, relationships that form through a dating application are sometimes perceived as lower-quality relationships. This perception may be due to motivations for using MDAs, as some applications are associated with hooking up rather than forming a committed romantic relationship (Hobbs et al. 2017), or due to dishonesty as it is fairly common for individuals to lie on their dating profile (Sharabi and Caughlin 2019). If individuals believe that relationships that form on dating applications are subpar, they may less satisfaction and commitment in that relationship. Although the negative stigma associated with MDAs has declined over time (Bergström 2021; Kight 2019), there is little empirical evidence that examines the difference between methods of relationship initiation (meeting online versus meeting in person) for the quality of these romantic relationships, despite calls from researchers (Potarca 2020).

The goal of this study is to examine the difference in relationship quality for premarital romantic relationships that were initiated using MDAs versus in person. Researchers argue that MDAs tend to propel hook-up culture that could interfere with the development of relationship quality (Barrada et al. 2021). On the other hand, some studies have found little difference between on- and offline dating (Fornetti 2023). More research is

needed to better understand differences in relationship quality between meeting a romantic partner in person or using MDAs. Determining possible differences in the quality of romantic relationships based on how they form could help promote physiological and psychological well-being (Mirsu-Paun and Oliver 2017) by helping address individuals' belongingness needs.

Dating Applications and Relationship Initiation

Individuals have an inherent need to belong, meaning that in order for individuals to thrive, they should seek out close relationships (Baumeister and Leary 1995). This need to belong is often a subconscious or unconscious process. One way that individuals address this belongingness need is by forming romantic relationships. Forming relationships to address belongingness needs is most crucial during emerging adulthood, where individuals are seeking to address the psychosocial conflict of intimacy versus isolation (Arnett 2000; Erikson 1963). To address this conflict, emerging adults consciously or subconsciously seek long-term romantic partners. In order to form committed, long-term romantic relationships, individuals need to seek out potential partners. Yet, the way that individuals form relationships has evolved over time, particularly given advances in technology. Although many individuals may meet potential romantic partners face-to-face, through friends, family, work, or social circumstance, this face-to-face approach is less predictable and reliable compared to MDAs, which give individuals control over the relationship initiation process (Finkel et al. 2012). Essentially, individuals are prone to use MDAs as a way to form close romantic relationships and meet belongingness needs, because they have more control over the relationship initiation process and are less likely to experience stress. However, it is unclear whether meeting someone on MDAs consistently leads to the formation of a committed, i.e., high-quality, relationship. Baumeister and Leary (1995) and Aron et al. (1991) argue that high-quality relationships meet individuals' belongingness needs, but what approach leads to higher-quality romantic relationships—meeting in person or meeting using MDAs? Just because MDAs make finding a romantic partner easier and more convenient does not mean that someone will form a high-quality relationship.

There is empirical evidence that can also help explain why relationship quality could be different depending on how a relationship is initiated. There are many advantages to using MDAs that could lead to the formation of a high-quality relationship. First, there are many potential partners presented on MDAs. In fact, the term "relationshopping" was termed to reflect how finding a romantic partner on dating applications is similar to buying other products online, as consumers are exposed to several "products" (i.e., potential romantic partners) to determine which (or who) is best (Huang et al. 2022). Second, MDAs use a geolocation function that allows individuals to connect with others who are near them, which decreases stress associated with dating in general (Griffin et al. 2018). Third, individuals can learn more about a romantic partner before an actual date in order to determine compatibility, which is a predictor of long-term relationships (Aron et al. 1991; Dredge and Anderson 2021). In comparison to meeting someone face-to-face, individuals can view pictures and read brief biographies about potential partners on MDAs, which allows individuals to "pre-screen" potential partners before agreeing to go on a date. This advantage of MDAs allows individuals to determine similarities, which predicts attraction before a couple goes on a first date (Dredge and Anderson 2021). However, MDAs may prompt users to focus on physical attractiveness rather than information or biographies. Additionally, not all information on MDAs is accurate, as individuals can lie about demographics such as age, height and/or weight, and their job/income, causing users to be wary of potential partners (Thottam 2018). Additionally, Antheunis et al. (2020) found that using the online chat on MDAs may cause idealized impressions of prospective partners, which could lead to disappointment when they meet for the first time if the potential partner does not meet expectations. Each of these facets of MDAs can contribute to the quality of a romantic relationship that was formed using a dating application and can promote feelings of belongingness in the romantic context. It is possible

that relationships can overcome these issues as they develop over time, thus leading to increases in relationship quality. Arguably, initial dishonesty during relationship initiation could carry over into subsequent relationship processes, as supported by (Mosley et al. 2020; Sharabi and Caughlin 2019).

Given the affordances and costs of online dating, it is not surprising that the prevalence rates of MDAs have seen a surge over the last decade. According to the Pew Research Center (Vogels 2020), 48% of American adults 18 to 29 years old have used a dating application, 38% of American adults between 30 and 49 have used a dating application, and 16% of American adults 50 and older have used a dating application. The most popular dating applications globally based on the number of users are *Tinder*, *Bumble*, and *Hinge* (Ceci 2024). These applications may be the most popular MDAs as there are more potential partners to choose from compared to other applications that may restrict their user base by requiring individuals to pay to use their application. Generally, the use of MDAs has increased over the past decade and continues to increase, particularly with emerging adults (Ceci 2024; Vogels and McClain 2023). Therefore, it is not surprising that using MDAs is rated as the most common method to initiate romantic relationships in the U.S. (Rosenfeld et al. 2019; Vogels and McClain 2023).

Despite how often individuals use MDAs, only 1 in 10 adults in the U.S. say that dating applications led to the formation of a committed romantic relationship or marriage (Vogels 2020). There are several possible explanations for this perception. One explanation is the motivation for using MDAs and the type of dating application an individual is using. The reasons individuals use MDAs vary, including relationship seeking, sexual experience, flirting/social skills, traveling, getting over an ex-partner, belongingness, peer pressure, socializing, sexual orientation (finding someone with a similar sexual orientation), entertainment, distraction, curiosity, and self-esteem (Sumter and Vandenbosch 2019; Zervoulis et al. 2020). Although forming a romantic relationship is the most common motivation for using MDAs (Hobbs et al. 2017; Rosenfeld et al. 2019), the plethora of other motivations may explain why many individuals have not formed a romantic relationship using MDAs. For example, *Tinder* is referred to as a hook-up application, while *Bumble* is commonly used for forming a romantic connection (as opposed to hook-ups; Isisag 2020). If someone is motivated to use MDAs for sexual gratification (such as hooking up), they may be less likely to form a romantic relationship compared to someone who may use a dating application to seek a long-term romantic relationship. If individuals are only seeking sexually gratifying relationships, rather than committed relationships, it is likely that the quality of those relationships are lower.

Another explanation for why relationship quality could be lower in relationships that met using MDAs is the negative perception of forming a relationship on an MDA. There is the perception that relationships that form on MDAs are primarily based on physical appearance, rather than a comprehensive evaluation of an individual (Olivera-La Rosa et al. 2019). Data suggest that individuals, particularly men, are more apt to send a message to someone that they find physically attractive, regardless of other information on a dating application profile (Levy et al. 2019). Additionally, there is skepticism regarding honesty with MDAs. More precisely, individuals are wary that others are deceitful in their online dating application profiles (Sharabi and Caughlin 2019). The three most common demographics that were lied about on an MDA are age, height/weight, and job/income, with 53% of online daters having admitted to lying on their dating application profiles (Thottam 2018). An additional explanation regards the developers' goals for online dating. Although dating applications encourage participants to find a romantic connection, forming a lasting romantic relationship would also mean a decrease in (possibly paying) users (Courtois and Timmermans 2018). Therefore, it is to the economic benefit of the developers for individuals not to form lasting romantic relationships in order to continuously have a high user base (Alexopoulos et al. 2020; D'Angelo and Toma 2017). Each of these reasons provides some rationale for the quality of a relationship would be lower for those who met using an MDA compared to those who would meet a romantic partner in person.

Some studies have provided some initial examinations into the similarities and differences between meeting romantic partners online versus meeting them in person. For example, Bergström (2021) found that intimacy was higher in online dating compared to those who met in person. On the other hand, some studies have shown that meeting in person is better for the health and success (i.e., stability) of romantic relationships. For example, Finkel et al. (2012) illustrated that forming romantic relationships using MDAs only provides a 2-dimensional perspective of the potential partner, where preconceived notions about a potential romantic partner and the communication that occurs over dating applications tends to be idealized and less authentic, as people have more time to prepare a response. These authors argued that meeting in person during relationship initiation provides a 3-dimensional perspective, as individuals can learn about each other in real time, engage in mutual self-disclosure, and obtain a more authentic perception of someone based on the translation of nonverbal behavior and paralanguage. There is further evidence that communicating in person is better for romantic relationships than online communication. For example, Lee et al. (2019) found that offline self-disclosure predicted higher relationship satisfaction, whereas online self-disclosure was negatively associated with satisfaction. It can be argued that meeting someone on an MDA leads to dating in person, which also has implications for relationship quality. Given the empirical evidence that many individuals are deceitful on MDAs, that MDA developers are less invested in forming long-term relationships, and that individuals perceive MDAs as less effective for long-term relationships, individuals may be more likely to experience higher-quality relationships when they meet in person rather than through an MDA.

Forming romantic relationships, regardless of the approach, helps address individuals' belongingness needs. Yet, there is some evidence that suggests forming relationships through MDAs may not be as good for relationship quality as meeting in person. Nevertheless, the use of MDAs continues to increase, and the negative stigma associated with forming relationships online is also declining (Vogels and McClain 2023). These societal changes beg the question of whether there is a difference in the quality of romantic relationships based on how the relationship was initiated—in person or meeting using an MDA. Given the information reviewed, we hypothesize that the quality of dating relationships will be higher when individuals meet romantic partners in person compared to meeting using an MDA. The current study will examine relationship quality of current and past relationships based on whether they met in person or through MDAs.

2. Methods

2.1. Participants

Eligible participants for this study were college students 18 years or older recruited from posts shared with random classes in the Department of Educational Psychology in a large university in the southern U.S. (N = 236). The majority of participants were females (83.1%), with 36 participants identifying as male and 5 participants indicating "other". Additionally, 191 participants (80.9%) identified as heterosexual, 13 participants identified as homosexual (5.5%), 25 participants as bisexual (10.6%), and 7 identified as other (3.0%). The ethnic breakdown of participants is as follows: 95 non-Hispanic white (40.3%), 55 Latine (23.3%), 45 Black/African American (19.1%), 17 Asian American (7.2%), 2 Native American (0.8%), 16 Other (6.8%), and 6 preferred not to answer (2.6%). Of these participants, 120 were currently in a romantic relationship and 113 participants were romantically single (3 participants reported no romantic relationship status and were removed prior to data analysis). Out of the 233 participants, 169 had reported a previous romantic relationship and 64 were currently in their first romantic relationship. Of those currently in a romantic relationship, 22 were in a long-distance relationship (9.3%) and 26 were currently cohabitating (11.0%).

2.2. Procedures

Participants in this study were recruited by online announcements posted on the learning management system at a large university in the southern United States. The post shared eligibility requirements (18 years or older) and information about this study. From this recruitment method, 236 participants completed the online survey, which took approximately fifteen minutes to complete. In accordance with the Declaration of Helsinki, all aspects of this study were approved by the Institutional Review Board at Florida State University. All participants provided their informed consent to participate in this study.

2.3. Measures

Relationship initiation. Participants were asked two questions regarding how their current or past romantic relationships formed. Specifically, participants were asked, "How did you meet your current romantic partner?" and "How did you meet your last romantic partner?" with the choices being "using a dating application, such as *Tinder* or *Bumble*", "in-person", or "other (please specify)". Three participants selected the "other" option for their last relationship (no one selected this option for their current relationship); because this number was small, these were not included in data analyses. These questions were created for the purposes of this research.

Relationship quality. Relationship quality was measured using the Perceived Relationship Quality Components Inventory (PRQC; Fletcher et al. 2000). The PRQC consists of 18 items rated on a 7-point Likert scale ranging from 1 = *not at all* to 7 = *extremely*. Sample items include "How passionate is your relationship?" and "How happy are you with your relationship?" Participants answered these questions regarding their current relationship, if applicable, as well as their previous romantic relationships, if applicable. The mean relationship quality was 6.10 (SD = 0.93) for current relationships and 4.80 (SD = 1.32) for past relationships. Reliability for this measure was acceptable for current and past romantic relationships (α = 0.95 for both sets of relationships).

2.4. Data Analyses

First, we used descriptive statistics in SPSS to examine individuals' behaviors when using MDAs. Next, in order to answer the hypothesis associated with this study, we conducted an independent samples t-test. First, we tested the difference between those currently in a romantic relationship, comparing the means of relationship quality for those who met their partner online through a dating application versus those who met their partner in person. Second, we tested the difference in the means of relationship quality for individuals' previous romantic relationships, comparing those who met in person versus those who met online using a dating application. To ensure we had sufficient power to conduct these analyses, G*Power was used to determine a priori sample sizes. By identifying an effect size of 0.5, an error probability of 0.05, and power of 0.80, a sample size of at least 51 is needed in each group. For all analyses, we had at least 64 participants in each group. To add to the strength of the results, given the sample size, Bonferroni corrections were used ($p < 0.005$).

3. Results

First, we provide an overview of the use of dating applications in the current study, which is presented in Table 1. For participants who had been or are currently on dating applications, participants averaged 22.65 (SD = 41.34) minutes a day on dating applications, checking applications 2.35 (SD = 2.10) times a day on average. Participants also received an average of 8.08 (SD = 6.88) notifications a day on dating applications, averaging 5.55 (SD = 1.48) matches per day (on a scale of 1 to 7, with higher numbers indicating more matches). Participants who are currently on dating applications or had ever been on dating applications had reported going on 4.09 (SD = 5.86) first dates and 7.47 (SD = 11.02) total dates via dating applications.

Table 1. Descriptive statistics of sample based on relationship status.

	Single (n = 113)	Coupled (n = 120)
Age	20.63 (4.33)	21.51 (4.55)
Minutes on dating applications	23.84 (44.37)	16.00 (17.82)
Notifications received on dating applications	8.02 (6.95)	8.50 (7.33)
Frequency of checking dating applications	2.48 (2.21)	1.60 (1.14)
Number of first dates	3.22 (3.45)	8.80 (12.48)
Number of total dates	6.50 (8.12)	14.00 (24.04)
Number of matches	179.07 (295.35)	133.00 (208.08)
Updating profile	2.59 (1.22)	3.00 (2.00)
Matching with someone	5.78 (1.22)	4.50 (2.17)
Talking to match	3.78 (1.74)	3.17 (1.72)
Previous relationship quality	3.03 (2.73)	3.79 (2.09)
Current relationship quality	---	6.05 (1.08)

Note: Only participants who ever used (n = 119) or currently using dating applications (n = 33) have responses for dating application behaviors. Updating profile, matching with someone, and talking to match were all measured on a scale of 1 (*not at all*) to 7 (*all the time*), with all other dating application behaviors being open-ended. Relationship quality was on a scale from 1 to 7, with higher scores indicating higher relationship quality.

Of the participants in a current romantic relationship (n = 120), 34 met their partner using a dating application and 86 met in person. Of the participants who had a previous romantic relationship (n = 169), 29 had met using a dating application and 140 had met in person. To address the goals of this study, independent samples t-tests were calculated using relationship initiation as the predictor variable, and perceived relationship quality as the dependent variable. The results of these analyses are presented in Table 2. Relationship quality for those participants who met their current partner using a dating application did not significantly differ from participants who met their partner in person. Additionally, the relationship quality of participants' last relationship did not significantly differ based on the initiation method. These insignificant results accounted for Bonferroni corrections.

Table 2. Comparison of relationship quality based on relationship initiation.

	Dating Application	In Person					95% Confidence Intervals	
	Mean (SD)	Mean (SD)	t	df	p	Mean Difference	Lower	Upper
Current relationship	5.97 (1.37)	6.08 (0.95)	0.53	118	0.60	0.12	−0.32	0.55
Last relationship	4.86 (1.22)	4.69 (1.50)	0.60	167	0.55	0.18	−0.41	0.76

Note: Perceived relationship quality is measured on a scale of 1 to 7, with higher scores indicating higher relationship quality.

4. Discussion

According to Baumeister and Leary (1995), individuals have a subconscious or unconscious need to belong that is met by forming romantic relationships. Given this premise, it is not surprising that the use of MDAs continues to increase, with the primary motivation being to form a romantic relationship (Rosenfeld et al. 2019; Vogels and McClain 2023). This study examined differences in the quality of romantic relationships that formed by meeting in person versus using an MDA. Results of the current study show no differences in the perceived quality of romantic relationships based on means of formation. Although individuals are less likely to form a relationship on a dating application compared to meeting someone in person, either because of a negative stigma associated with relationship formation using an MDA (Castro and Barrada 2020), fears about dishonesty (Mosley et al. 2020) or because of the design of MDAs being economically advantageous to the developers (de Vries 2023), results of the current study provide evidence that these concerns may be unwarranted. The results of this study provide support that the quality of romantic relationships formed using MDAs or meeting in person is comparable and can thus help address belongingness needs.

There are some potential explanations for the null differences in perceived relationship quality for current and past relationships based on the relationship initiation method. Theoretically, individuals have a need to belong (Baumeister and Leary 1995) and therefore, the method used to address this need may not matter, as long as belongingness needs are met. It is also possible that relationship initiation is distinct from relationship quality, meaning that it does not matter how a relationship is initiated, but rather how the relationship evolves over time. Additionally, the decline of stigmatization surrounding MDAs could also contribute to the lack of differences in quality, which is supported by other studies (Bergström 2021; Kight 2019). People may be less inclined to view MDAs as a poor way to meet partners, essentially equating the use of dating applications to forming relationships in person (Bergström 2021). Subsequently, using MDAs could be viewed as a primary (or normal) way to find potential romantic partners.

Another factor to consider is context. It is unclear how involved someone was regarding their use of dating applications during relationship formation. For example, someone could meet someone on a dating application and then send them messages until they agreed to meet face-to-face. Alternatively, someone could see a desirable profile on a dating application, possibly sending a message, but then meet the individual in person by happenstance. In these examples, the use of an MDA assisted relationship formation, but the context was different. The use of MDAs could also have been extensive or brief. Individuals could have messaged for an extended period of time on a dating application or have only sent a few messages in a shorter period of time before agreeing to meet offline (assuming they met offline). The context for meeting in person could also be similar to meeting using an MDA. An individual could meet someone face-to-face, ask for their phone number, and send text messages, similar to sending messages on a dating application. Future studies are encouraged to better understand how MDAs were used in forming relationships, in addition to the context of how relationships formed to better understand the null findings in this study. It would also be beneficial to find the thresholds for high and low relationship quality to examine how relationship initiation and relationship quality are related.

Another variable to consider is the motivation for using MDAs. First, individuals may not be motivated to use MDAs to form a romantic relationship; rather some may be motivated to meet new people or for a sexual encounter (Levy et al. 2019). These varying motivations likely have implications on romantic relationship formation. Future studies are encouraged to control for the motivation for using MDAs when examining romantic relationship quality. Additionally, some individuals in the current study formed casual relationships, as opposed to serious dating relationships (i.e., those looking for long-term romantic relationships). The variance in the casual or serious nature of the relationship likely has ramifications for the findings in this study. How individuals meet may mean less for serious relationships compared to those who are more casual, such as situationships and hook-ups (Langlais et al. 2024). Future studies are encouraged to control for the seriousness of the relationship to best address this rationale.

Results for this study have implications for MDA users and those who assist MDA users. First, those who use MDAs to form romantic relationships should not be discouraged from using the applications due to perceived negative stigma (Bergström 2021; Rosenfeld et al. 2019; Vogels and McClain 2023). It may be helpful to show individuals, particularly young adults who are driven to form romantic relationships (Arnett 2000) that there are few differences in relationship quality according to whether the relationship started in person or using an MDA. Professionals, educators, and others may also use information from this study to provide guidance to clients who are seeking to form romantic relationships. These professionals can work with singles regarding dating in person or online by discussing dating goals, and the pros and cons of using MDAs. Individuals seeking romantic relationships should be recommended to use whatever option makes them the most comfortable when forming romantic relationships (Rosenfeld et al. 2019). The choice of which method to use for forming a romantic relationship should be free from judgment from family and friends, which is consistent with studies that show that stigma of using MDAs to form

relationships has lessened in recent years due to the rising popularity and success rate of forming relationships on MDAs (Bergström 2021). Future studies are needed to verify these recommendations.

Findings from this study also have implications for individuals' need to belong (Baumeister and Leary 1995). More specifically, young adults (Arnett 2000) have an amplified need to belong and often seek to address this goal by forming romantic relationships. This theory illustrates that when belonging needs are met in romantic relationships, the quality of that relationship increases (Aron et al. 1991; Mirsu-Paun and Oliver 2017). It appears that for the sample for this study, participants' needs were being met, regardless of whether the participant met their current or past romantic partner using a dating application or in person. These findings suggest that using MDAs could be helpful in addressing belongingness needs and is comparable to meeting a romantic partner in person.

5. Limitations and Conclusions

Although this study advances the literature on dating applications and relationship formation, it is not without its limitations. First, the sample was predominantly white females recruited from the same university. The lack of male participants in this study significantly hinder generalizability of study results. The gender imbalance may also have implications for study results, as women may have different perceptions regarding the use of MDAs compared to men, as women may be more relationship drive and men may be more driven for sexual gratification (Glenn and Marquardt 2001; Regnerus and Uecker 2011). Future studies are encouraged to recruit larger, more diverse samples (i.e., more male and more non-white participants). Second, this study was cross-sectional in nature, which prohibits making causal conclusions. Third, this study asked participants to recall past relationship experiences, which are prone to self-serving and retrospective bias. Future investigations should examine the use of dating applications longitudinally to better compare the source of relationship formation (MDA versus face-to-face) for relationship quality. With longitudinal data, we recommend that discontinuous growth modeling (Singer and Willett 2003) would be used to determine if there is a significant change in intercept (when someone forms a relationship with someone using a dating application) and slope (time in that relationship) regarding relationship quality. Fourth, we did not ask participants to report the length of their current or past relationships, which is likely a confounding variable. Future investigations should control for length of the relationship. Additionally, we did not consider participants' degree of use of dating applications for this study, which likely have implications for study results. For example, some participants may rely more extensively on dating applications, whereas others may not. Although these participants use dating applications, the extent to which participants relied on dating applications likely contributes to whether or not they are helpful in forming relationships. Another variable to consider is the motivation for using dating applications. If participants are motivated to use dating applications to find a partner, then those relationships may be higher-quality than individuals who form a relationship with someone from a dating application that was not motivated to use the dating application for relationship purposes. Motivations for use and behaviors on dating applications should be considered with future investigations of this topic.

The goal of this study was to compare relationship initiation methods—meeting in person or meeting using a dating application—for relationship quality. We found that there were no significant differences between meeting online and meeting in person for participants' current romantic relationship quality or that of their previous romantic relationship. This study shows that meeting using a dating application or in person helps participants meet belonging needs and, therefore, support relationship satisfaction in those relationships. Although there were some limitations to this study, recommendations are made to support research on this topic. These results show that any existing stigma towards dating applications' ability to lead to relationship formation should be reconsidered. However,

these data are exploratory in nature and more research is needed to better compare meeting a potential romantic partner online versus meeting them face-to-face.

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