What is the relationship between loneliness and Tinder® use?

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Abstract

In this research I examined the relationship between loneliness and Tinder use. Specifically, I investigated whether lonely people are more or less likely to use Tinder than people that are less lonely. In addition, it was explored whether gender acts as a moderator in the relationship between loneliness and Tinder use. A total of 193 participants were gathered for this research. Loneliness was measured with the 6-Item Scale for Overall, Emotional, and Social Loneliness. Tinder use was assessed using the method of Strubel and Petrie (2017). Logistic regression analysis of Tinder use on loneliness showed a significant association between loneliness and Tinder use. A second logistic regression involving gender as a moderator between loneliness and Tinder use did not result in any significant findings. The results of the current research indicate that there is a positive relationship between loneliness and Tinder use. These results could be used in the general body of literature as further addition on a relatively modern topic of online dating. Because the present study did not investigate underlying mechanisms of loneliness or motivations of dating application use, future research would be warranted to do so. More research is needed in order to fully grasp how loneliness interacts with one's presence and behavior on mobile dating applications such as Tinder.

Introduction

General Introduction

In one of her many letters, Charlotte Brontë once wrote: "I might repeat over and over again that my life is a pale blank and often a very weary burden … not that I am single and likely to remain a single woman, but because I am a lonely woman and likely to be lonely". Although more than 150 years have passed since the English novelist and poet shared her plight, her words still have resonance in the modern world. As defined by Peplau and Perlman in 1981, loneliness is "the unpleasant experience that occurs when a person's network of social relations is deficient in some important way, either quantitatively or qualitatively". Although loneliness occurs at all life stages, it seems to be increasingly prevalent in young adults. Of those aged between 16 and 24 years, 10 percent report feeling lonely "often or always" (Community Life Survey, 2017). These findings are in line with previous research by Jones and Carver (1991), which shows that loneliness is most prevalent among adolescents and young adults.

Furthermore, 27 percent of young adults aged between 18 and 24 years also report having used dating sites (Smith, 2016). In Western societies, Tinder has emerged as the leader in the online dating market with more than 1.2 million downloads in the Netherlands alone (Duguay, 2016; Sumter, Vandenbosch, & Ligtenberg, 2017). Blackwell, Birnholtz, & Abbot (2015) explain that Tinder functions as a "location-based real-time dating app, co-situating users by transmitting their physical location and co-presence on the app," meaning that users are presented to each other depending on their physical location and possible simultaneous use of the application.

Previous literature has identified various characteristics of loneliness and the usage of dating apps as well as associations between them (Sumter, & Vandenbosch, 2019; Aretz, Demuth, Schmidt and Vierlein, 2010; Nowland, Talbot, & Qualter, 2018). However, typically the main

focus in prior studies has been directed towards the broader exploration of the motivations, underlying factors and effects of the two constructs. So far, the literature investigating loneliness and Tinder in direct relation to each other is fairly scarce, making it unclear what exactly is the relevance of loneliness on the usage of Tinder. Thus, the aim of the current research is to investigate the relationship between loneliness and Tinder use. More specifically, it will be investigated whether lonely people are more or less likely to use Tinder than people that are less lonely.

Literature review

In the modern day society, means of communication and socializing have changed with the introduction and evolution of the Internet and social networking sites (SNS). It has become seemingly effortless to contact people through the means of the internet and the SNS, which brought along new developments into the lives of lonely people. Social Networking Sites enable people to get in contact both with people within their immediate social circles as well as beyond them. The use of the Internet and SNS may be especially alluring to lonely people, due to the changes in social interaction patterns that happen in online communication. The relationship between loneliness and Internet use, and by extension the use of mobile dating applications, is not simple.

For example, researchers Odaci and Kalkan (2010) found loneliness to be correlated with problematic Internet use, whereas Shaw and Gant (2004) found that Internet use significantly decreases feelings of loneliness. There two findings illustrate the two hypotheses that have been proposed in order to explain the relationship between loneliness and Internet use: "excessive Internet use causes loneliness vs. lonely individuals are more likely to use the Internet excessively" (Morahan-Martin, 2003). The first hypothesis could be supported with the notion of problematic

internet use being correlated to loneliness, where problematic internet use is "a significantly increased Internet use duration in order to obtain the desired pleasure" according to Goldberg's diagnostic criteria (Goldberg, 1997). The second hypothesis on the other hand can be justified by the notion of lonely people being drawn to the internet due to expanded social networks provided online and the altered patterns of online communication (Morahan-Martin, 2003).

These two research outcomes also demonstrate that the association between loneliness and Internet use is not unidimensional, but rather there are a number of related factors that influence the associations between the two constructs. In their research, the authors Odaci and Kalkan (2010) stipulate that the association between loneliness and problematic Internet use may follow as a consequence of negative impressions lonely people have towards themselves and others. With regard to findings of Man and Hamid (1998) as well as Nurmi and Salmela-Aro (1997), the authors further elaborate that "negative impressions stimulate feelings of self-dislike . . . individuals with a high level of loneliness having low self esteem and being pessimistic in social relations may cause them to avoid other people and turn to cyber relationships". Thus, it can be understood that, among others, concepts such as self esteem and impressions of oneself and others, might play an important role in the associations that loneliness has with Internet use.

The findings of Shaw and Gant (2004) mentioned previously indicate that the use of the Internet may not be as negative as is commonly assumed. The results of their longitudinal study showed that anonymously chatting on the Internet decreased feelings of loneliness and increased participants' perception of social support and self-esteem. The authors explain this effect by referring to earlier research of McKenna and Bargh (2000), in which it is posited that "online relationships differ fundamentally from face-to-face relationships, especially because of the anonymity accorded by the Internet". It is explained that anonymity may influence people

disclosing their personal information quicker than they do in real life, face-to-face communication. The disclosure of personal information is presumed to lead to intimate relationships being established more frequently in online interactions than in real life. These results and interpretations further illustrate that the exact association between loneliness and Internet use are not as straightforward as they might seem at first glance.

So why do lonely people go online? In their research Morahan-Martin and Schumacher (2003) investigated the differences in patterns of Internet use between lonely and not-lonely people. In their research they found that lonely individuals were more likely to use the Internet for emotional support than not-lonely people. It was also found that compared to not-lonely people, lonely individuals were more likely to report making online friends and had higher satisfaction with their online friends. Furthermore, compared to not-lonely individuals, lonely people were found to be more likely to use the Internet in order to modulate negative moods and to report disturbances in their daily life caused by their Internet use. Other studies have also demonstrated that online communication has the potential to ease one's feelings of loneliness. For instance, Ando and Sakamoto (2008) investigated the relationship between the number of cyber-friends of participants and their feelings of social anxiety and loneliness. They found that for people with low assessments of their physical attractiveness, having a high number of cyber-friends of the opposite sex reduced their feelings of loneliness felt in friendships. These findings point towards the tendency of lonely people to seek connections with others through the means of the Internet, possibly in order to fulfill the social or emotional connections they are lacking.

In his work on loneliness, Weiss (1973) suggested that loneliness has social and emotional dimensions, referred to as social loneliness and emotional loneliness respectively. According to Dahlberg and McKee (2014), social loneliness refers to "absence of an acceptable social network,

that is, a wider circle of friends and acquaintances that can provide a sense of belonging, of companionship and of being a member of a community". Emotional loneliness, in turn, refers to "the absence of an attachment figure in one's life and someone to turn to". Viewing loneliness from the perspectives of social and emotional loneliness comes vastly from the assumption that different relationships serve different functions in one's life, and that those are rarely interchangeable (Dykstra & Fokkema, 2007).

In their research about the way in which Internet use may affect the social relationships of older adults (over 55 years of age), Sum, Mathews, Hughes and Campbell (2008) demonstrate that the way in which one uses the Internet may be indicative of one's loneliness. For instance, they found lower levels of social loneliness to be associated with using the Internet as a communication tool, whereas higher levels of emotional loneliness were associated with using the Internet to find new people. Similarly to previous previous research, these findings point towards the conclusion that the relationship between loneliness and Internet use is not uniform and can have multiple underlying factors.

But what is the relationship between loneliness and Tinder use specifically? Just like various interpersonal relationships serve different functions, so do online dating applications. Similarly to most SNS, mobile dating applications allow people to connect with others through semi-public user profiles. The relationship between loneliness and Internet use has been largely investigated. However, the literature on the relationship between loneliness on the use of Tinder is a lesser researched topic. Although the associations between loneliness and Tinder use have been investigated by prior research in connection to broader research questions, loneliness has rarely been one of the key variables.

For instance, in the study conducted by Sumter, Vandenbosch and Ligtenberg (2017), six motivations for using the dating app Tinder were identified. One of these motivations included using Tinder in order to feel less lonely or better about oneself. In 2010, researchers Aretz, Demuth, Schmidt and Vierlein investigated the psychological characteristics of online-dating users and the different ways in which these users utilize online dating platforms. They found three different user types: shy compensatory contact seekers, self-confident partner seekers and pastime flirters. The first cluster of shy compensatory contact seekers were said to be motivated by their feelings of loneliness and longing for a partner, and to be significantly different from the other two identified user types. From these findings, it follows that loneliness may draw people towards dating applications along with other SNS. Dating applications can provide the best of both online and offline worlds: it is possible to retain a degree of anonymity and thus establish intimate relationships online, and it is also possible to transfer those relationships into real-life interpersonal relationships that do not only rely on online communication. In line with this reasoning, the following hypothesis will be tested in this research:

H1: Lonely people use Tinder more than less lonely people

Gender differences in loneliness and online dating

Online dating attracts both males and females alike (Sautter, Tippett, & Morgan, 2010). However, the motivations, preferences and outcomes for males and females and their use of dating applications have been shown to differ. Thus, in order to better understand the relationship between loneliness and the use of Tinder, it seems to be important to understand the differences between the people using it. While plenty of research has focused on investigating gender differences in

both loneliness and online dating separately (Borys, & Perlman, 1985; Abramova, Baumann, Krasnova, & Buxmann, 2016), the literature on the possible moderation effects of gender between loneliness and online dating is scarce. Thus, this research will mainly rely on synthesizing outcomes of studies in relation to gender differences in loneliness and online dating separately, in order to further illustrate the need for more research.

In 2016, Abramova et al. analyzed the online behavior of single people in line with the evolutionary approach which posits that "men and women exhibit distinct selection criteria when it comes to choosing their mating partners". In line with this approach, the authors found men to be more active on online dating platforms compared to women. It was also found that males are more likely to be motivated by short-term romantic pleasure and to be less selective about their partners than women were. In line with these findings, Valkenburg and Peter (2007) have also found that men visit and use dating sites more often than women. In addition, it was found that men are more active in approaching women online (Kreager et al. 2014). Despite the seeming similarities and tendencies of the aforementioned findings, it is important to mention that other literature on gender differences and online dating has come out incoherent or inconclusive. For instance, Smith and Duggan (2013) found limited or no gender differences in terms of dating app usage. These inconsistencies in findings indicate two things: a general trend of males being more active on online dating platforms than women, and the need for more research in order to understand where the inconsistencies in findings on gender differences in online dating originate from.

When it comes to investigating gender differences in loneliness, similar trends as with gender differences in online dating can be seen. According to Borys and Perlman (1985), statistically significant gender differences are most often not found with the use of the UCLA

loneliness scale. However, when such differences are found, males have higher scores on loneliness than females. Furthermore, it is important to mention that in the case of self-labelling, females are more likely to report feeling lonely than males are. These contradictory results are explained by the authors through the means of different sex role factors for males and females, in which women face less negative consequences for admitting loneliness than males.

In 2007 Wiseman, Guttfreund and Lurie found similar outcomes. In a sample of university students seeking counselling, men were found to be higher in loneliness than females. Furthermore, in the research conducted by Schmitt and Kurdek (2010), gender differences in personality correlates of loneliness in different relationships were examined. With the use of the Differential Loneliness Scale which "assesses dissatisfaction in four types of relationships (Family, Larger Groups, Friendships, and Romantic/Sexual)", college men were found to express more dissatisfaction with Family, Large Group and Friendship relationships than college women. These findings demonstrate that the types of relationships established with others may differ between genders and potentially further explain gender differences in loneliness. Authors Stokes and Levin (1986) were among the first researchers that focused on gender differences in predicting loneliness from characteristics of social networks. They argued that there are differences between men and women and the quantity and quality of their relationships. The researchers found that "male subjects with more highly interconnected, cohesive sets of friends reported themselves to be less lonely, whereas density had little relation to loneliness in female subjects". The authors discuss their findings and posit that men and women may use different standards in evaluation whether or not they are lonely. They suggest that men might rely on group oriented criteria in evaluating their loneliness, whereas women are more focused on the qualities of their dyadic relationships when evaluating their loneliness.

From the aforementioned findings, a pattern may be inferred. It seems that males are typically lonelier than females, which may be due to the differences in the evaluative patterns of loneliness and social relationships of males and females. Furthermore, males seem to be more active on online dating platforms and less selective of their partners on those platforms than females are. Similar pattern was described by Sumter, Vandenbosch and Ligtenberg (2017) who found Casual Sex to be more likely reported as a motivation for Tinder use by men than for women. However, these inferences are only based on the synthesis of two separate fields of research. Thus, no causal or relational assumptions can be drawn. In order to investigate the possible relationship of gender differences between loneliness and Tinder use, this research will take an exploratory approach and investigate whether the relationship between loneliness and Tinder use is moderated by gender.

Method

Participants

The participants were recruited through the means of convenience and snowball sampling. Participants were contacted through the means of SNS such as Whatsapp and Facebook. A total of 211 participants were gathered, of which 18 were removed, as they did not complete the questionnaire in full. The final number of participants included in the current research was thus 193 (57.5% female; $M_{age} = 30$; $SD_{age} = 12.11$). Of all the respondents, 32 people reported having an account of Tinder. Furthermore, 18 participants did not report their gender and one respondendent reported their gender as non-binary (labelled as "Other" in the questionnaire). Because gender was used as a moderator in Model 2, these participants were excluded from the gender moderated logistic regression analysis. However, they were retained in the binary logistic

regression, because the variable of gender was not included in the analysis of Model 1. Thus, the final number of participants was 193 for Model 1. And 174 for Model 2.

Procedure

For this research, a correlational study design was used. The Qualtrics survey programme was used in order to create and conduct the survey. The current research was a part of a larger project, thus more scales and items were included in the questionnaire presented to participants than what is described below. However, those scales and items were not a part of the current investigation and will therefore not be discussed further. The questionnaire of this research consisted of three main elements: a 6-item scale for overall, emotional, and social loneliness (Gierveld, & Tilburg, 2006), an assessment for Tinder use and its frequency (Strubel and Petrie, 2017), and general demographics such as gender, age, occupation and education level. The order of the first two elements was randomized for participants in order to diminish order effects.

At the very beginning of the questionnaire, the participants were provided with the informed consent form, a brief description of the survey they were about to take part in and informed about the possible risks and matters of confidentiality of the research. Next, the participants were presented with either the 6-item loneliness scale or the items aimed to measure Tinder use and its frequency.

When the 6-item loneliness scale was presented, the participants were asked to answer the questions as truthfully as possible. The items presented to participants as a part of the scale were, for instance: "I experience a general sense of emptiness" and "I miss having people around". The items were scored on a seven-point Likert scale, with the answer options ranging between "Strongly agree" to "Strongly disagree", with "Neither agree nor disagree" being the middle point. The scale consisted of three positively formulated items and three negatively formulated items.

The positively formulated items were reverse coded in order to obtain an accurate estimate of one's loneliness scores. In the current sample, the 6-item overall loneliness scale appeared to have acceptable internal consistency, Cronbach's alpha = .72.

Further, in line with the method by Strubel and Petrie (2017) the participants were asked two questions considering their use of the dating app Tinder and the frequency thereof. In the first instance, the participants were asked whether or not they had an account on the dating application Tinder. Provided that the participants responded "Yes" to the question "Do you have an account on Tinder?" they were then asked about the frequency with which they used their account. The participants were asked to choose one of the 11 presented frequency of use options: never, once a month, 2–3 times a month, once a week, 2–3 times per week, 4–5 times per week, daily, 2–3 times per day, 4–6 times per day, once an hour, 2 or more times per hour (Rosen, Whaling, Carrier, Cheever, & Rokkum, 2013). The answer options were coded with numbers between 1 and 11 respectively, with the higher number indicating higher frequency of use.

In the final part of the questionnaire, the participants were asked to answer four demographic questions regarding their age, gender, occupation and highest level of education. Under the question of gender, the participants were given an option to refer to their gender as non-binary ("Other") as well as binary ("Male" or "Female"). The participants could further indicate their age with the use of a sliding scale ranging between 0 to a 100. Under the question of occupation, a total of seven answer options were provided to participants. These answer options included the most common categories of occupation such as "Employed full time", "Unemployed looking for work", and "Student" (See Appendix 1. for all answer options).

When asked about their highest level of education, the participants were again provided with seven answer options. These ranged between "Less than high school" to "Doctorate" with "Bachelor degree" being the middle option (See Appendix 2. for all answer options).

Results

The sample

The final sample size was equal to 193 participants. Within this sample 32 people indicated that they have an account on Tinder. A total of 19 people did not report their gender or reported their gender as non-binary. These participants were excluded from the analysis in Model 2 (N=174; 63,8% female), which resulted in the amount of people with an account on Tinder decreasing to a total of 26 participants. Table 1 illustrates the descriptive statistics and the correlations between the variables (the correlation between the variables of Tinder use and frequency of Tinder use was not calculated due to the variables being dependent on each other). Only Pearson's correlation between the variables loneliness and Tinder use was shown to be significant at 5%.

Table 1. *Descriptive Statistics and Correlations for Study Variables*

Variable	N	M	SD	1	2	3
1.Tinder use[a]	193	0.17	0.37			
2.Loneliness	193	18.42	5.82	.162*		
3.Gender[b]	174	0.37	0.50	.076	-.069	
4. Frequency of Tinder use	32	4.44	2.56	-	.150	.177

Note. [a] 0 = no Tinder account and 1 = Tinder account, [b] 0 = female and 1 = male, *p < 0.05.

Analysis

In order to test the first hypothesis of whether lonely people use Tinder more than less lonely people, Pearson's correlation analysis and linear regression analysis was conducted. The correlation found between the variables of loneliness (mean centered) and frequency of Tinder use was not significant: $r(32) = .150, p = .207$ (one-tailed). Accordingly, loneliness did not statistically predict the frequency of Tinder use, $R^2 = .022, F(1, 30) = .686, \beta = .150, p = .414.$ These results indicate that loneliness is not a significant predictor for the frequency of Tinder use, and therefore the first hypothesis cannot be supported.

Seeing as the linear regression model did not indicate loneliness to be a significant predictor of frequency of Tinder use, a broader analysis was conducted in order to investigate whether loneliness acts as a predictor for Tinder use in general. A logistic regression was conducted. The aim of the binary logistic regression analysis was to investigate whether loneliness acts as a predictor for the general use of Tinder (having an account of not). This was done in order to shed more light into the general relevance of loneliness on the use of Tinder. The results of the binary logistic regression (Model 1.) demonstrated in Table 2. indicated that loneliness is a statistically significant predictor of Tinder use ($p < .05$), with one unit increase in loneliness being associated with 7.4% higher likelihood of Tinder use. The omnibus test of model coefficients was significant at $p = 0.028$, and the Nagelkerke's R^2 had a value of 0.042. Overall, the predictor of loneliness explains relatively little (4.2%) of the variance in the variable Tinder use. Nonetheless, loneliness is demonstrated to be a significant predictor of Tinder use, thus indicating that there is a positive relationship between loneliness and the use of Tinder.

Table 2. *Logistic Regression of Loneliness on Tinder use*

Variable	*B*	SE	Odds Ratio Exp(B)	95% CI For Exp(B) Lower	Upper
(Constant)	-1.693***	0.205	0.184		
Loneliness	0.071*	0.032	1.074	1.008	1.144

Note. N=193, *p < 0.05, **p < 0.01, ***p < 0.001

To investigate the exploratory question of whether the effect of loneliness on Tinder use is moderated by gender, a second logistic regression was conducted. It is important to note that the sample size of the current analysis (N = 174) was smaller than the sample size of Model 1. Therefore, the frequency distributions between variables become increasingly skewed, seeing as the current sample had 26 Tinder users and 148 non-users. In addition, 111 participants in the sample were females, which further influences the variable distributions. This has potential negative implications to both the validity and generalizability of the current model.

Illustrated in Table 3. is the second logistic regression model (Model 2), in which the potential moderation effect of gender was analysed by including an interaction term between loneliness and gender into the model. The results of this analysis showed that none of the added model predictors were significant. The omnibus test of model coefficients was not significant (p = 0.185*)*, and the Nagelkerke's R^2 had a value of 0.034. Seeing as the added predictors were not significant and neither was the explained variance (3.4%), it is not possible to draw conclusions about the effect of gender as a moderator between loneliness and Tinder use in this model.

Table 3. *Logistic Regression of Loneliness on Tinder use moderated by Gender*

Variable	*B*	SE	Odds Ratio Exp(B)	95%CI for Exp(B) Lower	Upper
(Constant)	-1.960***	.293	.141		
Loneliness	.028	.049	1.029	.935	1.132
Gender	.533	.440	1.705	.719	4.040
Gender x Loneliness	.065	.078	1.067	.916	1.243

Note. N=174, *p < 0.05, **p < 0.01, ***p < 0.001

Discussion

The current research aimed to investigate the relationship between loneliness and the usage of the dating application Tinder. Furthermore, the possible moderating effects of gender on the relationship between loneliness and Tinder use were explored. The participants were asked to report their feelings of loneliness and their use of the dating application Tinder. It was expected that lonely people would report using Tinder more often than their less-lonely counterparts.

A significant positive effect was found between loneliness and Tinder use, indicating that when one's scores on loneliness increase, so does the likelihood of using Tinder. However, no significant effect of gender as a moderator between loneliness and Tinder use was found. Therefore, it can be concluded that there is a positive association between loneliness and the use of Tinder. However, due to the correlational nature of this research, it is not possible to draw any inferences about causality between loneliness and the use of Tinder.

The significant findings of the current investigation are largely consistent with prior research that has explored associations between loneliness and the use of dating applications as well as the Internet in general (See Aretz et al., 2010; Morahan-Martin, & Schumacher, 2003). The findings of the current research demonstrate that the likelihood of using Tinder increases when

one's scores on loneliness increase. Loneliness has been indicated to be a motivating factor for the usage of dating applications in numerous studies, however it has rarely had the spotlight of being researched as one of the key determinants for dating app use. In light of the findings of the current research, this may have been unfounded. Although the primary hypothesis of this research that presumed that lonely people would use the dating application Tinder more than less lonely people was not supported, a broader association between loneliness and Tinder use was found. These findings point towards the need of further research on the associations and even possibly causal inferences between loneliness and mobile dating in general.

Although the association of loneliness and Tinder use was shown to be significant in the current study, it should be kept in mind that other predictors of Tinder use exist. Previous studies have shown motivational factors such as partner seeking, casual sex, ease of communication, thrill of excitement, trendiness and pastime spending (Aretz et al., 2010, Sumter et al., 2018) to play a role in the use of dating applications. Although these motivations for using Tinder were omitted from the current investigation, they should not be left out of consideration while studying the relationship between loneliness and the use of dating applications. Loneliness is not a unidimensional concept and thus it is important to gain further understanding on how feelings of loneliness potentially, if at all, interact with the motivations for dating application use. For instance, one can speculate that a possible association between loneliness and casual sex vs. loneliness and partner seeking may influence the way in which dating applications are used. In terms of the current findings, this implies that it is not possible to know whether or not one of the abovementioned motivations had influence on either people's scores of loneliness or their use of Tinder.

Alongside the investigation of the association between loneliness and Tinder use, the current research also aimed to explore the potential moderation effect of gender between loneliness and Tinder use. However, based on the current results no assumptions about the moderation effects of gender between loneliness and Tinder use can be made. Prior literature concerning the gender differences in loneliness and dating application use separately is not always consistent. As has been described before, some general tendencies for gender differences in loneliness and Tinder use can be seen. However, those are not consistently found across studies. Thus, it is not surprising that the current study did not find associations for gender as the moderator between loneliness and Tinder use. Whether or not the moderation effect of gender is present between loneliness and dating application use is still an open question which should be considered in further research.

Given the non-significant findings of the exploratory investigation into moderation effects of gender, it is important to discuss methodological issues that were prevalent in the current research. As previously mentioned in the Method section, the sample size of Model 2. was smaller than that of Model 1. This was due to the fact that 19 participants who either did not report their gender or reported their gender as non-binary were removed from analysis. Due to this exclusion, the total amount of Tinder users decreased disproportionately compared to non-users. Furthermore, the gender distribution within the sample was not even, seeing as over sixty percent of respondents were female. Such uneven distributions between groups decrease the power of the analysis and make generalizations of any possible findings refutable. Thus, for further research it is important to keep the comparison groups as equal in their size as possible, in order to obtain the most accurate results possible.

Limitations

The findings of the current study should be interpreted with caution. The main limitation of the present study comes from its design. Due to the cross-sectional nature of the present research, it is not possible to draw causal inferences. Thus, further research is needed in order to explore the relationship between loneliness and Tinder use and the way in which the two are related. Based on the current study it is not possible to infer whether loneliness leads to more Tinder use or whether Tinder use leads to more loneliness. The only thing that can be inferred from the findings of the present study is the fact that the direction between loneliness and Tinder use seems to be positive. Meaning that as one's scores on loneliness increase, so does the likelihood of Tinder use.

The second limitation of the present study is attributed to the nature of data collected. This research relied on self-report data, and thus it is possible that the data was influenced by bias such as social desirability and concern about gender related expectations. For instance, as mentioned prior, males may potentially under-report their true feelings of loneliness in comparison to women. Furthermore, although dating applications have become more widely accepted in the society, some might still feel the stigma around mobile dating and thus not report, or under-report one's presence on Tinder.

Future research should take the aforementioned limitations into consideration. Special attention should be paid to having a sample that is representative of both groups; Tinder users and non-users. In addition, further research might benefit from exploring the potential moderating and mediating effects of other demographic variables that were not included in the current study. For example, including sexual and gender minorities into the analysis or looking for the effects that age may have on both loneliness and dating app use. In addition, future research should aim to eliminate the biases of social desirability and prescribed gender norms from their research. It is

given that eliminating such biases from research is not simple. However paying special attention to those biases while constructing and conducting research is integral for obtaining the most accurate results possible.

The current findings of this research provide additional insight into the research on Tinder use motivations. Loneliness by itself has rarely been investigated in terms of its association to Tinder use, which is why in the current study loneliness was used as the sole predictor for Tinder use. In addition, prior research in terms of the moderation effect of gender between loneliness and Tinder use is lacking. Thus, this research aimed to take that into consideration and explore whether gender acts as a moderator in the association of loneliness and Tinder. Although the findings of the moderation analysis are not significant or conclusive, this research might prompt more interest in future research to explore moderation effects between loneliness and dating application use in general. The current findings indicate that the association between loneliness and Tinder use is positive and significant. These findings point merely to an association between the two variables and not to any causal relationship between them. Nonetheless, these results could be used in the general body of literature as further addition on a relatively modern topic of online dating. Because the present study did not investigate underlying mechanisms of loneliness or motivations of dating application use, future research would be warranted to do so. The findings presented in this research warrant for future research on the topics of loneliness and online dating to possibly dwell into the mechanisms of this association further than in the current study. For instance, it is possible that different levels of social and emotional loneliness are associated with different motivations for the use of mobile dating applications. Future research on the relationship between loneliness and mobile dating might also find it worthwhile to take into account the distinctions of social and

emotional loneliness and the way in which they are related to the social interactions that mobile daters have.

With all the aforementioned in mind, it can be concluded that loneliness has a positive association with the use of Tinder. However, the exact mechanisms between this association are still novel. More research is needed in order to fully grasp how loneliness, with its multiple dimensions and effects, exactly interacts with one's presence and behavior on mobile dating applications such as Tinder. Nonetheless, the current research provides a stepping stone towards a more specific investigation of loneliness and its association with mobile dating behavior.

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Appendix 1.

Answer option for demographic question "What is your occupation?"

1. Employed full-time

2. Employed part-time

3. Unemployed looking for work

4. Unemployed not looking for work

5. Retired

6. Student

7. Disabled

Appendix 2.

Answer option for demographic question "What is the highest education level you have received?"

1. Less than high school

2. High school graduate

3. Some college

4. Bachelor degree

5. Master degree

6. Other Professional degree

7. Doctorate