

Evaluation of Depression, Anxiety, Self-Esteem, and Social Appearance Anxiety Levels and Their Relationship with Technology-Related Sexual Violence Among People Using Online Dating Applications: A Controlled Study

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ABSTRACT

Objective: The purpose of the research is to investigate the effects of sexual violence related to the use of online dating applications (ODAs) and how these effects are reflected in participants' levels of depression, anxiety, self-esteem, and social appearance anxiety.

Methods: For the research, people (n=91) who used ODA were reached through websites and social networks using the snowball technique. As control group, people with no history of ODA use (n=70) were included in the study via the internet. Assessments included Sociodemographic Data Form, which was prepared by the researchers, Beck Depression Inventory, Beck Anxiety Inventory, Rosenberg Self-Esteem Scale, and Social Appearance Anxiety Scale. Linear regression analyses were performed to determine the predictive effect of using an ODA and being exposed to sexual violence on depression, anxiety, self-esteem, and social appearance anxiety scores.

Results: Participants who used ODA scored higher on depression, anxiety, and social appearance anxiety than those who did not. Participants who did not use ODA were found to have higher self-esteem. Additionally, significant differences were found in the levels of depression, anxiety, self-esteem, and social appearance anxiety between participants who used ODAs and were exposed to sexual violence and participants who never used ODA.

Conclusion: Our research shows that there is a relationship between the use of ODA and the risk of exposure to sexual violence. It is thought that the use of ODA may also have negative effects on depression, anxiety, self-esteem, and social appearance anxiety. It is important to raise awareness about the use of ODA, digital safety, and violence.

Keywords: Anxiety, depression, online dating application, self-esteem, sexual violence, social appearance anxiety

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INTRODUCTION

Rapidly changing technology has enabled communication tools to spread and develop in line with demands and needs. One of the communication tools most affected by technological changes is social sharing and social communication networks used on the internet. A widely used form of social communication today is online dating applications (ODAs). Online dating applications are partner search channels generally used through smart mobile phones. Online dating application is a common way to meet sexual and romantic partners today.¹

In ODA, users create a profile by sharing various information about themselves. Users often indicate the sexual identity they are interested in. The purposes of using ODAs may vary from person to person. Some people use these applications for long-term romantic relationship opportunities, while others prefer them for short-term sexual relationships.² Those who use these applications often focus on the physical appearance of the other person and give less importance to finding an emotionally compatible partner.² A study in the United States found that these apps were the most common way to meet; it states that 39% of heterosexuals and 65% of homosexuals met their partners using ODAs.¹

It is stated that there is a significant relationship between the total time spent on social media and the frequency of use and higher levels of depression.³ Additionally, it is reported that social comparisons made on social media are associated with depression levels more than the general level of usage.^{3,4} It has been argued that adult Tinder use may make people with an intense need to seek approval more vulnerable to the acceptance or rejection of others.⁵ People with social anxiety (SA) and depression may avoid intimacy due to fear of negative evaluation or rejection. Additionally, anhedonia associated with depression can make it difficult to engage in social activities with dating partners.⁶ For these reasons, mobile dating applications may be attractive to individuals with high SA or depression levels. It is also stated that the use of ODAs may negatively affect self-esteem after rejection in this group.⁶

The increasing frequency of use of social media sites and the interest in these sites among adolescents may be associated with low self-esteem and high levels of depressive symptoms.⁷ Strubel and Petrie (2017) found that Tinder users may have an increase in body image concerns compared to non-users. It is also stated that face and body satisfaction decreases in those who do not use Tinder.⁴ As observed by many studies, greater exposure to one's own body image on social media can often lead to greater social comparison, which can be strongly associated with appearance concerns.⁸⁻¹⁰ While people's appearance anxiety decreases when they receive positive feedback on their social media profiles, they tend to increase when the feedback is negative.¹¹

With advancing technology and the resulting increased use of smartphones, social media use has become an activity that young adults spend a long time in. This development has brought with it sexual violence facilitated by the use of technology.¹² Technology-related sexual violence includes both face-to-face and virtual sexual acts, including stalking, sexual harassment, dating abuse, pornography, sexual abuse, and sexual assault.¹² It has been shown that those who have been subjected to sexual assault are at a high risk for post-traumatic stress disorder (PTSD), depression, and anxiety disorders.¹³ The effects of sexual violence on mental health are well

known, but research on online dating apps is limited. Online dating applications may present challenges in ensuring and maintaining security and privacy. This can lead to forms of violence that can range from unwanted sexual comments and photos to physical sexual violence.

Online dating applications have been and are likely to continue to be a common way for people to connect with potential partners today. It is important that people feel safe when using ODA and that they can use these practices without fear or exposure to violence. Therefore, investigating the types of negative interactions, risks, and protective factors that people experience on ODAs will reduce the negative effects of the apps on mental health and enable mental health professionals to develop intervention strategies. The aim of the current study is to investigate the forms of sexual violence that people who use ODAs experience, if any, and whether these affect their depression and anxiety levels, self-esteem, and social appearance concerns.

The hypotheses of this study were to:

- People who use ODAs are more likely to be exposed to sexual violence than people who do not use them
- The self-esteem and SA levels of people who use ODAs are negatively affected compared to people who do not use them
- The anxiety and depression levels of people who use sexual dating applications are negatively affected compared to people who do not use ODAs.
- The anxiety, depression, SA, and self-esteem levels of people who used ODAs and were exposed to sexual violence were negatively affected compared to people who used these applications and did not experience sexual violence.

MATERIAL AND METHODS

Participants and Procedure

For the research, 92 people with a history of using ODA were reached via snowball technique through websites and social networks accessible on the internet. One person could not be included in the study because he did not fill out the forms completely. A total of 91 people were included in the study group. The moderators of the selected websites were contacted and informed about the study. The study was carried out using a Google form survey application, which was sent individually over the internet to those who agreed to participate in the research. Consent was obtained from the participants.

Another form was prepared to reach the control group. At the beginning of the form, information was given about the use of ODA and they were asked whether they used it or not. People aged 18 and over who declared that they had never used ODA were included in the control group. This form does not include questions about ODA use. The ads are placed on 2 popular national websites. Since ODA users are young and educated, 2 popular sites that are used for socialization and communication purposes and that we think are used by users with similar age and education characteristics were selected. The control form was advertised with the approval of the moderators of these sites. The language of these web pages is Turkish. It was stated in the announcement that the study would be related to sexual practices.

Ethics committee approval was received for the study from the Acibadem Mehmet Ali Aydinlar University Research and Publication

Ethics Board (Approval No: 2023/2, Date: March 3, 2023). The data were collected between March 15, 2023 and July 1, 2023.

Measures

Sociodemographic Data Form: In order to evaluate the sociodemographic and clinical characteristics of the participants, age, sex, gender identity, sexual orientation, marital status, education, employment status, characteristics of ODA use, and accompanying diseases were investigated in the form prepared by the researcher.

Beck Depression Inventory: It is a self-rating inventory that measures the physical, emotional, and cognitive symptoms seen in depression. The highest score to be obtained is 63, and a high score indicates the severity of depression. It was developed by Beck et al¹⁴ (1961), and the validity and reliability study of its Turkish form was conducted.¹⁵

Beck Anxiety Inventory: Beck et al¹⁶ (1988) measure the prevalence of anxiety symptoms experienced by the individual. Adaptation of the scale to Turkish was made by Ulusoy et al¹⁷ (1998). The scale, which is based on self-report, consists of 21 items, each item is scored between 0 and 3, and the total score varies between 0 and 63. Higher total scores from the scale indicate the severity of anxiety experienced by the individual.

Rosenberg Self-Esteem Scale: The scale was developed by Rosenberg (Rosenberg, 1965).¹⁸ It is a 63-item self-report scale consisting of 12 subcategories structured from multiple choice questions. Turkish validity and reliability were determined by Çuhadaroğlu (1986).¹⁹ In our research, the first questions related to the “self-esteem” subcategory of the Rosenberg Self-Esteem Scale were used. According to the evaluation system of the scale, scores vary between 0 and 6. Scores between 0 and 1 indicate high self-esteem, scores between 2 and 4 indicate medium self-esteem, and scores between 5 and 6 indicate low self-esteem. The internal consistency Cronbach alpha coefficient is 0.88.

Social Appearance Anxiety Scale: The scale was developed by Hart et al²⁰ to measure people’s social appearance concerns and was adapted into Turkish.²¹ It is a 5-point Likert-type scale. It consists of 16 items in total. The total score to be obtained from the scale is between 16 and 80, and high scores indicate high appearance anxiety.

Statistical Analysis

The Statistical Package for Social Sciences version 23.0 software (IBM Corp.; Armonk, NY, USA) was used to analyze the data. Before statistical analysis, reverse coding was done for the scales from which data were collected in the study, and mean values were assigned to the blank items. Then, total scores for 4 scales (Beck Depression Inventory, Beck Anxiety Inventory, Social Appearance Anxiety Scale, and Rosenberg Self-Esteem Scale) were calculated, and these scores were converted into standard z scores. Outlier analysis was performed, and the data of a participant whose standard z score was outside the range of ± 3 was not included in the analyses. Although data were initially collected from 162 people, statistical analyses were conducted on 161 people. Since the kurtosis and skewness values of all variables were found to be within the ± 2 range, parametric tests were used for the analyses. Frequency analysis was performed to determine the demographic characteristics of the participants. Pearson chi-square analysis was used to examine the relationships between participants who use and do not use ODAs

and demographic variables, and t-test for independent groups was used to determine whether participants who use and do not use the application differ in terms of research variables. One-way analysis of variance (ANOVA) and then Bonferroni multiple comparison test were applied to compare the participants who used an ODA and were exposed to sexual violence and those who were not, as well as the participants who did not use an ODA, in terms of research variables. Linear regression analyses were performed to determine the predictive effect of using an ODA and being exposed to sexual violence on depression, anxiety, self-esteem, and social appearance anxiety scores. In all analyses, the significance value was accepted as $P < .05$.

RESULTS

The sociodemographic characteristics of the groups that use and do not use ODAs and the relationship between these characteristics and application use are shown in Table 1, together with the results of the chi-square analysis.

Independent groups t-test analysis was performed to determine whether participants who used and did not use ODAs differed in terms of total scores of the Beck Depression Inventory, Beck Anxiety Inventory, Social Appearance Anxiety Scale, and Rosenberg Self-Esteem Scale. Beck Depression Inventory total score ($d = 1.01$), Beck Anxiety Inventory total score ($d = 0.97$), and Social Appearance Anxiety Scale total score ($d = 0.91$) of participants who used ODAs were higher than participants who did not use ODAs. The Rosenberg Self-Esteem Scale total score of the participants who used an ODA was found to be significantly lower than the participants who did not use an ODA ($d = 1.14$). The analysis result is shown in Table 2.

One-way ANOVA was conducted to determine whether the total scores of the Beck Depression Inventory, Beck Anxiety Inventory, Social Appearance Anxiety Scale, and Rosenberg Self-Esteem Scale differed between participants who used an ODA and were or were not exposed to sexual violence, and participants who never used an ODA. It was observed that the scores obtained from the 4 scales differed in terms of groups, and the Bonferroni multiple comparison test was applied to determine which groups caused this difference. Analysis results are shown in Table 3.

Chi-square analysis was performed to compare those who used an ODA and experienced sexual violence and those who did not, in terms of gender, gender identity, and sexual orientation. According to the results of the analysis, the groups that have been subjected to sexual violence and those that have not been subjected to sexual violence do not differ in terms of gender, gender identity, and sexual orientation.

The type of sexual violence encountered by participants ($n = 33$) who were exposed to sexual violence is summarized in Table 4.

Linear regression analyses were performed to determine the predictive effect of using an ODA and being exposed to sexual violence on depression, anxiety, body image, and social appearance anxiety scores. According to the results of the regression analysis, it was determined that exposure to sexual violence had a predictive effect on depression, anxiety, self-esteem, and social appearance anxiety scores. Being exposed to sexual violence increases depression scores ($b = 0.742$, $P < .001$) and explains 55% of the variance in depression. Similarly, exposure to sexual violence increases anxiety

Table 1. Sociodemographic Characteristics of Groups that Use and Do Not Use Online Dating Applications

	Using Online Dating App (n=91)	Not Using Online Dating Apps (n=70)	P
Sex			.518
Female	40 (44.0)	27 (38.6)	
Male	49 (53.8)	43 (61.4)	
Other	2 (2.2)	0 (0.0)	
Gender Identity			.582
Cisgender	85 (93.4)	67 (95.7)	
Queer/nonbinary	4 (4.4)	1 (1.4)	
Transgender	2 (2.2)	2 (2.9)	
Sexual identity			.015*
Heterosexual	67 (73.6)	60 (85.7)	
Homosexual	21 (23.1)	5 (7.1)	
Bisexual	3 (3.3)	4 (5.7)	
Other	0 (0.0)	1 (1.4)	
Marital status			.052
Single	82 (90.1)	54 (77.1)	
Married	1 (1.1)	6 (8.6)	
Divorced	5 (5.5)	4 (5.7)	
Partnered	3 (3.3)	6 (8.6)	
Education			.079
High school graduate	2 (2.2)	7 (10.0)	
University and above	89 (97.8)	63 (90.0)	
Physical illness			.535
Yes	5 (5.5)	6 (8.6)	
No	86 (94.5)	64 (91.4)	
Psychiatric illness			.001*
Yes	29 (31.9)	7 (10.0)	
No	62 (68.1)	63 (90.0)	
Suicide attempt			.002*
Yes	15 (16.5)	1 (1.4)	
No	76 (83.5)	69 (98.6)	
Online dating app usage frequency			
Every day	20 (22)		
More than once a week	31 (34.1)		
Once a week	20 (22)		
Two or three a month	8 (8.8)		
Once in a month	2 (2.2)		
Less than once a month	10 (10.9)		
Face to face meeting via online dating app			
Yes	85 (93.4)		
No	6 (6.6)		
Sexual intercourse with someone met through an online dating app			
Yes	79 (86.8)		
No	12 (13.2)		
Experiencing sexual violence from someone met through an online dating app			
Yes	33 (36.3)		
No	58 (63.7)		

scores ($b=0.738$, $P < .001$) and explains 54% of the variance in anxiety scores. Exposure to sexual violence increases social appearance anxiety scores ($b=0.539$, $P < .001$) and explains 28% of the variance in social appearance anxiety. Finally, being exposed to sexual violence reduces self-esteem scores ($b = -0.587$, $P < .001$) and explains 34% of the variance in self-esteem. The results are shown in Table 5.

DISCUSSION

In this study, it was examined whether there were differences between people who used ODAs and those who did not use ODAs in terms of depression, anxiety, self-esteem, and social appearance anxiety. Additionally, ODA users were separated according to whether they were exposed to sexual violence or not, and the groups were compared. The results show that the anxiety, depression, SA, and self-esteem levels of people using ODA are significantly negatively affected compared to people who do not use ODA. It has also been determined that people who use ODA are more exposed to sexual violence than those who do not use it.

It was stated that there is a significant relationship between time spent on social media and the frequency of use and higher levels of depression.³ Additionally, social comparisons made on social media are reported to be more associated with depression levels than the general level of usage.³ This may be one possible mediator of the impact of social media on mental health and is also a factor that may be seen in the heavy use of ODAs. Studies examining the relationship between social media use and mental health emphasize that how applications are used is more important than the frequency of use or time spent.²²

People with SA and depression may avoid intimacy due to fear of negative evaluation or rejection.²³ Additionally, anhedonia and low self-esteem associated with depression can make it difficult to engage in physical social activities with dating partners.²⁴ For these reasons, ODAs may be attractive to individuals with high SA or depression levels. Although studies on this subject are few, it is also stated that the use of ODA may negatively affect self-esteem after rejection in this group.⁶ A study by Andreassen et al²⁵ (2016) shows that basic psychiatric disorder symptoms are associated with social media use at the addiction level. In our study, 16.5% of the participants who used ODA were found to have a history of suicide, while this rate was 1.4% in participants who did not use the application. The fact that the rate of mental illness in participants who use ODA is higher than in participants who do not use the application may explain the fact that people who use ODA have more suicide attempts than those who do not use the application. Increased use of social media and the internet can be associated with worsening mental health and suicide.²⁶ Many studies have found that social network addiction predicts depression, and these findings have been linked to other types of technological addictions and general addictions.²⁷⁻²⁹ It is also stated that there is a relationship between cyberbullying and sexting and suicidal ideation.³⁰

In our study, the anxiety scores of those who used ODA were found to be significantly higher than those who did not use ODA. Few studies have examined personal factors related to anxiety related to online dating. One of the studies conducted on this subject found that people with lower levels of dating anxiety tend to use ODAs more intensively than those with higher dating anxiety.³¹ Dating anxiety is the worry and anxiety a person experiences regarding romantic relationships or the dating process. This anxiety may cause a person to shy away from interacting with a potential partner or forming a romantic relationship, or to experience these processes in a negative way. Dating anxiety can affect a person's self-esteem, communication skills, and ability to form relationships. Such concerns can be affected by many factors, such as past relationship experiences, personal self-esteem level, social skills, and personal beliefs. Therefore, one of the reasons for the high anxiety levels in ODA users in our

Table 2. Comparison of Groups Using and Not Using Online Dating Applications in Terms of Research Variables

	Using Online Dating Apps (n = 91) Mean ± SD	Not Using Online Dating Apps (n = 70) Mean ± SD	t	P	d
BDI	19.20 ± 15.35	6.86 ± 8.04	t (159) = 6.107	<.001*	1.01
BAI	19.62 ± 17.05	6.62 ± 8.28	t (159) = 5.868	<.001*	0.97
RSES	25.13 ± 7.55	32.61 ± 5.37	t (159) = -7.033	<.001*	1.14
SAAS	45.81 ± 16.20	31.70 ± 14.82	t (159) = 5.863	<.001*	0.91

BAI, Beck Anxiety Inventory; BDI, Beck Depression Inventory; RSES, Rosenberg Self-Esteem Scale; SAAS, Social Appearance Anxiety Scale.

Table 3. Comparison of Study Variables in the Research Groups Who Were Exposed and Were not Exposed to Sexual Violence and Control Group

Scales	Groups	Mean ± SD	F	P	h ²	Post Hoc
Beck Depression Inventory	1. Sexual violence + (n = 33)	34.05 ± 14.17	97.843	<.001	0.56	1 > 2
	2. Sexual violence - (n = 55)	10.17 ± 8.25				1 > 3
	3. Dating app use - (n = 70)	6.62 ± 8.28				
Beck Anxiety Inventory	1. Sexual violence + (n = 33)	36.28 ± 15.86	98.924	<.001	0.56	1 > 2
	2. Sexual violence - (n = 55)	10.40 ± 7.47				1 > 3
	3. Dating app use - (n = 70)	6.86 ± 8.04				
Rosenberg Self-Esteem Scale	1. Sexual violence + (n = 33)	19.70 ± 7.28	55.512	<.001	0.42	3 > 1
	2. Sexual violence - (n = 55)	28.79 ± 5.35				3 > 2
	3. Dating app use - (n = 70)	32.61 ± 5.37				2 > 1
Social Appearance Anxiety Scale	1. Sexual violence + (n = 33)	57.08 ± 14.00	35.818	<.001	0.32	1 > 2
	2. Sexual violence - (n = 55)	39.16 ± 13.53				1 > 3
	3. Dating app use - (n = 70)	31.70 ± 14.82				2 > 3

Table 4. Types of Sexual Violence Encountered by Participants Who Were Exposed to Sexual Violence (n = 33)

	Frequency (%)
Receiving unwanted and/or hateful comments based on gender, gender identity, and/or sexual orientation	10 (30.3%)
Sending nude photos or videos without your permission, even though you do not want to	10 (30.3%)
Recording and/or sharing of your private images or videos without your consent (as revenge porn or non-consensual pornography)	15 (45.5%)
Being forced or insisted on having unprotected sexual intercourse	15 (45.5%)
Physical contact without your permission	12 (36.6%)
Expressions and behaviors involving lies or manipulation for sexual intercourse	9 (27.3%)
Threatening sexual violence	0
Rape	0
Comparing your sexuality to others, being blamed or shamed for your sexuality	5 (15.2%)
Insisting on meeting again even though you do not have approval or being followed persistently	13 (39.4%)

Table 5. Linear Regression Analyses to Determine the Predictive Effect of Using an Online Dating Application and Being Exposed to Sexual Violence on Beck Depression Inventory, Beck Anxiety Inventory, Rosenberg Self-Esteem Scale, and Social Appearance Anxiety Scale Scores

Predictive	Predictable	Statistics	Beta	t	P
Exposure to sexual violence	Beck Depression Inventory	R = 0.74; R ² = 0.55; Ad. R ² = 0.55; F (1, 87) = 105.141, P < .001	0.742	10.254	<.001
	Beck Anxiety Inventory	R = 0.74; R ² = 0.55; Ad. R ² = 0.54; F (1, 87) = 103.138, P < .001	0.738	10.156	<.001
	Rosenberg Self-Esteem Scale	R = 0.59; R ² = 0.35; Ad. R ² = 0.34; F (1, 87) = 45.135, P < .001	-0.587	-6.732	<.001
	Social Appearance Anxiety Scale	R = 0.54; R ² = 0.29; Ad. R ² = 0.28; F (1, 87) = 35.285, P < .001	0.539	5.940	<.001

Ad. R², adjusted R².

study may be high anxiety levels. Further research is needed on this subject.

In our study, self-esteem and social appearance anxiety scores were found to be statistically higher in ODA users. Strubel and Petrie⁴

indicate that Tinder users have an increase in body image concerns compared to non-users. The same study also states that face and body satisfaction decreases in those who do not use Tinder. However, this study shows that male Tinder users have a significantly lower self-esteem score than men and women who do not use Tinder.

Tinder can be classified as a platform that creates physical appearance pressure in terms of personal value perception.⁴ An association between the use of multiple ODAs and lower levels of objectification and body satisfaction has been identified.³² Self-esteem is considered an important component of mental well-being and contributes to improving and maintaining psychological functions.³³ Online dating applications expose users to frequent rejection. According to Tyson et al's³⁴ study, approximately 50% of matches on a dating application such as Tinder do not respond, which can result in a decrease in users' self-esteem. Online dating applications users have been observed to develop an online identity that often does not align with reality, trying to present the best version of themselves.³⁴ The use of ODAs causes users to become more critical of themselves, which leads to lower self-esteem levels.

Young people who see themselves as less physically attractive tend to express higher levels of loneliness, and it can be stated that increased levels of loneliness affect the time spent in online environments.³⁵ Loneliness may be related to social appearance anxiety.³⁶ As observed by many studies, greater exposure to one's own body image on social media can often lead to greater social comparison, which can be strongly associated with appearance concerns.⁸⁻¹⁰ While people's appearance concerns decrease when they receive positive feedback on their social media profiles, they tend to increase when the feedback is negative.¹¹ Hart et al²⁰ (2008) defined social appearance anxiety as being obsessed about an individual's physical attractiveness and fear of others' negative evaluations about this issue. Individuals experiencing social appearance anxiety are directly concerned about their physical appearance and how others perceive them.³⁷ Social appearance anxiety plays a significant role among young individuals experiencing changes in their bodies and engaging in online relationships where sharing body images is important.

Supporting our hypothesis in our study, the depression, anxiety, self-esteem, and social appearance anxiety levels of participants who used ODA and were exposed to sexual violence were more negatively affected than participants who used the application and were not exposed to sexual violence and did not use ODA. It was determined that exposure to sexual violence had a predictive effect on depression, anxiety, self-esteem, and social appearance anxiety scores in ODA users.

Effects of sexual assault include shock, fear, confusion, anxiety, panic, phobias, social withdrawal, feelings of guilt or irritability, sleep and eating disorders, depression, and suicide.¹³ People who experience sexual violence have a higher risk of developing PTSD or depression.¹³ It is stated that depression levels in people exposed to sexual violence put them at risk of attempting or committing suicide.³⁸ It can be stated that constant violence within a close relationship significantly affects self-esteem.³⁹ Although our research suggests that the increase in social appearance anxiety of people exposed to sexual violence may be related to the decrease in self-esteem, more research is needed on this subject.

In our research, participants who were exposed to sexual violence received unwanted and/or hateful comments based on their sexual identity, were exposed to nude photos or videos without their permission, had their private images or videos recorded and/or shared without their permission (as revenge porn or non-consensual pornography), had unprotected sexual intercourse. It is seen that the person was forced to have sexual intercourse, had physical contact without his/her permission, was exposed to lies and manipulations

for sexual intercourse, was compared to others, was accused or embarrassed about his sexuality, and was insisted on meeting again despite not having consent or was persistently followed. Dating applications increase people's accessibility to each other. It is reported that those who commit sexual crimes in chat rooms, which can be considered the precursors of ODAs, target people who appear vulnerable and see the potential for emotional influence by screening the user profiles of online members.⁴⁰ Another tactic used by some sexual predators is manipulation and promises of love or even marriage.⁴⁰ As a result, people may perceive that they are already in a well-established relationship with someone they have just met online and may not view them as strangers even if they have never met in person.⁴¹ It can be stated that this high level of trust can lead people to a situation where they are vulnerable and at risk. Additionally, some people consciously use dating apps for sexual purposes. The anonymity of the online environment may make people more inclined to speak openly and engage in inappropriate behavior.⁴² Anonymity can lead to flirtatious and sexually explicit conversations before meeting face to face, which may mean that some people may increase their expectations of sexual activity during a first offline meeting and assume that other users of dating apps are also looking for sex.⁴¹

While there was no significant difference in sex, gender identity, marital status, and educational status between the study group and the control group, there were more homosexual participants in the group using ODA. It is stated that a significant portion of same-sex couples who met after the 2000s met via the internet.⁴³ Dating through ODA has not only become the dominant form of meeting for same-sex couples in the United States, but it has also become more widely used by couples, gay or straight, than any previous form of meeting.⁴⁴ Reasons such as the fact that homosexuals and bisexuals have to look for a partner in a narrower pool than heterosexuals, and the difficulty of looking for a partner face to face in social environments due to discrimination and exclusion can be considered as the reasons why homosexual and bisexual people use ODAs more.⁴⁵

In our study, the psychiatric disease history of the participants who used ODA was significantly higher than that of the participants who did not use the application. People with psychological difficulties may have difficulty initiating social relationships or meeting face-to-face to look for a romantic partner due to reasons such as SA or a depressive mood, and may prefer to use ODAs.¹¹ Our research was a cross-sectional study, and history of psychiatric illness was questioned with only 1 question. Therefore, further research is needed to determine whether the use of ODA increases the risk of psychiatric diseases.

This study has some limitations. Participants were reached via the internet. We can speculate that the higher education level in the study is a result of online surveys, as highly educated people will be more likely to respond to online surveys. Accessing and using the internet effectively is more common among highly educated people. Since it is easier for socioeconomically advantaged individuals to use the internet and access these areas, it can be thought that it is possible for this group to access the study. Since the data is collected online, there may be problems regarding the reliability of the participants and their answers. Although participants were not asked for their identity information, some participants may not have wanted to participate in the study due to security concerns because they talked about their sexuality. Additionally, the study was conducted with a small sample. Studies with a larger sample size are needed.

Participants using ODA scored higher than the control group in terms of depression, anxiety, and social appearance anxiety. These results suggest that ODA use may have negative effects on mental health or that high levels of depression and anxiety may affect ODA use. Ease of access to emotional and psychological support resources should be provided for ODA users. Awareness of mental health should be increased, and more emphasis should be placed on the potential effects of using apps on a person's self-esteem.

Online dating applications requires increased awareness of digital security and violence. The research has revealed that there is a need to be aware of the security vulnerabilities of these applications and the risks of users encountering sexual violence. ODA must educate and raise users' awareness to provide a safer experience and prevent sexual violence.

In conclusion, our research highlights the relationship between ODA use and sexual violence and the effects of this relationship on mental health. More work and awareness are needed on digital security and user awareness. These results indicate the need to review the design and use of ODAs and the need for more effective measures to prevent sexual violence. Investigating the types of negative interactions, risks, and protective factors that people experience on dating apps will reduce the negative effects of the apps on mental health and enable mental health professionals to develop intervention strategies. It is also important for clinicians to be open to understanding experiences when working with patients using ODA and not to ignore the effects of possible violence.

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