

Loneliness, Sexuality, and Singlehood

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This study investigated the associations between loneliness and sexual desire and between loneliness and sexual satisfaction in single individuals. Loneliness can motivate people to look for social connection, and sexual desire can motivate people to look for new partners (a form of social connection). When controlling for depression, I expected lonelier individuals to experience more sexual desire and less sexual satisfaction. To investigate these associations, I collected data from single individuals using online surveys. I used rating scales to measure the constructs mentioned above. A total of 642 participants were recruited on Prolific. I used multiple regression models to test the associations between loneliness and sexual desire and loneliness and sexual satisfaction in singles. Loneliness was not a significant predictor of sexual desire. However, loneliness significantly predicted sexual satisfaction. Loneliness does not appear to be related to sexual desire, and it is weakly associated with sexual satisfaction.

Keywords: loneliness, sexuality, singlehood, sexual desire, sexual satisfaction

Cette étude a examiné les associations entre la solitude et le désir sexuel et entre la solitude et la satisfaction sexuelle chez des individus célibataires. La solitude peut motiver les gens à rechercher un lien social, et le désir sexuel peut motiver les gens à rechercher de nouveaux partenaires (une forme de lien social). En contrôlant la dépression, je m'attendais à ce que les individus les plus seuls éprouvent plus de désir sexuel et moins de satisfaction sexuelle. Pour étudier ces associations, j'ai collecté des données auprès d'individus à l'aide de questionnaires en ligne. J'ai utilisé des échelles de notation pour mesurer les constructions mentionnées ci-dessus. Au total, 642 participants ont été recrutés sur Prolific. J'ai utilisé plusieurs modèles de régression pour tester les associations entre la solitude et le désir sexuel et la solitude et la satisfaction sexuelle chez les célibataires. La solitude n'était pas un prédicteur significatif du désir sexuel. Cependant, la solitude prédisait de manière significative la satisfaction sexuelle. La solitude ne semble pas être liée au désir sexuel et elle est faiblement associée à la satisfaction sexuelle.

Mots clés : solitude, sexualité, célibat, désir sexuel, satisfaction sexuelle

Loneliness is a universal emotional state, however, discussing it can be a taboo subject and people rarely admit to experiencing it (Killeen, 1998). Hawkley and Cacioppo (2010) reported that 80% of people aged under 18, and 40% of older adults admit to feeling lonely sometimes. The current study aims to understand the effects of loneliness on the sexuality of single people (i.e., people who currently are not in a romantic relationship). This study focused on the sexuality of singles for two reasons: (a) single people generally experience more loneliness than people who are in a relationship (Bucher et al., 2018); and (b) most studies investigating sexuality focus on couples, such that the factors affecting the sexuality of singles are not well understood (Park et al., 2020). This study specifically sought to understand how loneliness can interfere with singles' sexual desire and sexual satisfaction. Sexual desire was defined in this study as

a cognitive variable that denotes interest in sexual activity (Spector et al., 1996). Sexual satisfaction was defined in this study as one's subjective evaluation of their sexual life and the ensuing emotional response that provides them with information on whether their sexual needs are being met (Park et al., 2021; Kislev, 2021).

To understand the association between loneliness and the sexuality of singles, it is important to first define loneliness. Loneliness is a subjective negative emotional state that arises due to actual or perceived deficits in social relationships (Eres et al., 2020). Theories define the causes of loneliness differently, ranging from faulty cognitions to early experiences with caregivers (Perlman & Peplau, 1982). An influential theory in loneliness research is the *Evolutionary Theory of Loneliness* (Cacioppo & Patrick, 2009). According to Cacioppo and Patrick, loneliness evolved to signify the dangers of isolation. Being in a group provides more protection from one's environment (such as predators) and increases food and mating opportunities. They claim that: "loneliness developed as a stimulus to get humans to pay more

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attention to their social connections and to reach out towards others” (Cacioppo & Patrick, 2009, p. 7) . Therefore, loneliness can be viewed as a form of pain that acts similarly to hunger, but rather than signifying a need for food, it signifies a need for social connection.

Loneliness greatly affects one’s mental and physical health (Cacioppo et al., 2015). Some of the conditions associated with loneliness include depression, alcoholism, cognitive impairment, anxiety, stroke, obesity, trouble sleeping, cardiovascular disease, lung disease, increased risk for Alzheimer’s disease, diminished executive control, suicidal ideation, and psychological stress (Cacioppo et al., 2015; Hawkey, & Cacioppo, 2010; Yanguas et al., 2018). Loneliness is associated with an increased risk of mortality, and its effects on health are similar to other entrenched risk factors, such as substance abuse, obesity, lack of physical exercise, and lack of access to health care (Holt-Lunstad et al., 2015).

Loneliness can also interfere with sexuality, contributing to sexual behaviour in an effort to self-regulate negative affect (Fisher, 2015). Thus, sexual desire could motivate lonely people to seek intimacy, causing them to become more inclined to look for new partners when they feel socially isolated. Sexual desire then, could act similarly to loneliness, motivating one to reconnect with others. However, it is important to note that sex in a non-committed context does not need to be motivated by loneliness: people can have casual sex for many different reasons. Past research (Townsend et al., 2020; Vrangalova, 2015) has shown that motives for casual sex influence how much satisfaction one derives from it. Engaging in casual sex for non-autonomous reasons (such as peer pressure, validation, trying to start a relationship through casual sex, etc.) leads to more negative psychological outcomes (such as depression and lower self-esteem) compared to people who engage in casual sex for autonomous reasons (such as fun or curiosity). Alleviating loneliness may be a non-autonomous reason for having sex, as Vrangalova (2015) postulates that self-imposed pressures (such as self-regulating) are non-autonomous reasons for casual sex.

There is an association between sexual desire and sexual satisfaction in singles. Voluntary singles (i.e., people that do not want to be in a relationship) tend to be more sexually satisfied, and this is associated with them having less sexual desire (Kislev, 2021). People with less sexual desire may be less often frustrated by unmet desire, and this lack of frustration could make them feel more sexually satisfied. Park and colleagues (2021) also showed that singles with higher levels of sexual satisfaction tend to have less desire for a partner. Thus, by increasing sexual desire, loneliness could have a negative effect on sexual satisfaction.

Sexual satisfaction is an essential part of healthy human functioning, it affects one’s overall life satisfaction (Kislev, 2021), and it is strongly linked to mental health (Higgins et al., 2011). Studies that compared singles’ sexual satisfaction to partnered individuals’ sexual satisfaction found that singles are less sexually satisfied than people in an exclusive dating relationship (Antičević et al., 2017; Higgins et al., 2011; Kislev, 2020; Pedersen & Blekesaune, 2003). However, researchers disagree on the reason for the difference in sexual satisfaction between single and partnered individuals. While some propose that this effect is mainly because of sexual frequency (Kislev, 2020), others postulate that committed relationships inherently lead to more sexual satisfaction (Pedersen & Blekesaune, 2003). Understanding which variables affect sexual satisfaction in singles can help inform factors that lead people to experience a greater sense of general well-being and become more connected to their sexuality.

There is a gap in the literature when it comes to investigating the effects of loneliness on the sexuality of singles. Although the effects of loneliness on health are well-established, very few studies have looked at its effects on sexuality. Additionally, most research done on sexual satisfaction has looked at it from a relationship perspective, with very few studies investigating sexual satisfaction in single individuals (Park et al., 2021). Among the few studies that did so, most simply compared sexual satisfaction in singles to sexual satisfaction in partnered individuals.

This study investigates how loneliness can affect both sexual satisfaction and sexual desire in singles. To my knowledge, this was the first investigation of this association. I expected lonelier singles to report higher levels of sexual desire, as they would have a higher need for social connection. I also expected lonelier singles to report less sexual satisfaction, as reducing loneliness is a non-autonomous motive for engaging in casual sex. In summary, the hypothesis was that lonelier singles would experience more sexual desire and less sexual satisfaction.

When investigating the association between loneliness and sexuality, it is essential to take depression into account. Loneliness and depression are distinct conditions (Weeks et al., 1980). Loneliness is a negative emotional state that arises due to deficits in social relationships (actual or perceived; Eres et al., 2020), while depression is a psychopathology characterized by sad mood, feelings of emptiness, and irritability (American Psychiatric Association, 2013). Nevertheless, depression and loneliness are highly correlated (Cacioppo et al., 2015; Weeks et al., 1980). Furthermore, depression is known to interfere with

sexual functioning (Reynaert et al., 2010), often being significantly associated with a decrease in libido (sexual desire; Kennedy et al., 1999; Lourenço et al., 2010; Phillips et al., 2000). For these reasons, depression was included as a covariate when investigating the association between loneliness and sexuality.

This study also included three variables that could potentially interfere with the association between loneliness and sexuality in singles. The first one was gender, as men and women experience sexual satisfaction differently (Higgins et al., 2011; Pedersen & Blekesaune, 2003; Sprecher, 2002; Warehime & Bass, 2008). The second one was sociosexual orientation, which refers to one's willingness to engage in sex outside of a committed relationship (Fisher et al., 2016). It is a continuous measure with orientation being either unrestricted (more willing to engage in casual sex) or restricted (less willing to engage in casual sex). Sociosexual orientation can moderate the effects of casual sex on well-being (Vrangalova & Ong, 2014). Lastly, sexual frequency (how frequently one has partnered sexual activity) was also measured, as it is associated with sexual satisfaction (Higgins et al., 2011).

Methods

Participants

An a priori power analysis using G*Power (Faul et al., 2009) was conducted to estimate the sample size required to have sufficient power for an interaction effect (in a model including depression, loneliness, and their interaction terms with a moderator¹) in the exploratory analyses. The analysis indicated that a sample of 636 participants would provide 90% power to detect a small-sized interaction effect ($f^2 = .02$) using a two-tailed hypothesis test and a Type I error rate of .05. Data from 688 participants were collected via Prolific. Eligibility criteria included: speaking English, being single, and being over the age of 21. Participants could come from any educational background; the survey was not restricted to university students. From these participants, 46 were excluded due to them failing two attentional checks, stating that they did not answer the survey honestly when asked at the end of the study, not meeting eligibility criteria (such as not being single), or not wanting their data to be used in this study. The analytical sample included 642 participants. Participants' mean age was 26.23 years old ($SD = 10.77$). Regarding participants' gender, 62% of participants identified as men, 36% as women, 1.7% as non-binary, and 0.2% preferred not to state their

¹ The power analysis included enough power to test moderation, because in other analyses we intended to analyze gender, sociosexual orientation, and sexual frequency as potential moderators.

gender. Data on nationality or national origin were not collected, as it was not directly relevant to this study.

Procedure

Participants completed a series of online surveys using Qualtrics. They provided informed consent before participating in the experiment. Participants reported on their loneliness, sexual satisfaction, sexual desire, depression, sociosexual orientation, and sexual frequency. The survey took roughly 15 minutes to complete, and participants were compensated 1.60 GBP (2.73 CAD based on current exchange rates) for their efforts. Participants were asked to read and sign a debriefing form when they finished the experiment and given the option to withdraw their data from the study if they wanted to. Information on attachment styles (levels of anxious and avoidant attachment) was also gathered. However, due to an error in transcribing the items from the original questionnaire to Qualtrics, this information was not properly collected and could not be used in this study. The Ethics Review Board at the University of Toronto approved this study.

Measures

Socio-Demographics

Participants were asked about their age and gender. To collect information on age, participants were asked *How old are you?* and provided with a space where they could input any number. To collect information on gender, participants were asked *What is your gender?* and provided with four answer options (*man = 1, woman = 2, non-binary = 3, prefer not to answer = 4*).

Loneliness

Participants completed the UCLA Loneliness Scale (Version 3; Russell, 1996), a 20-item scale that measures one's feelings of loneliness. An example of an item is *How often do you feel isolated from others?* The scale ranges from 1 (*never*) to 4 (*always*). The sum of scores ranges from 20 to a total of 80 possible loneliness points. The higher the score, the lonelier the respondent feels.

Sexual Satisfaction

Participants answered the Satisfaction with Sex Life Scale (Park & MacDonald, 2022), which includes 4 items that measure sexual satisfaction. An example of an item is *My sexual life meets my expectations*. The scale ranges from 1 (*not at all*) to 7 (*extremely*). The sum of scores ranges from 4 to a total of 28 possible sexual satisfaction points. The higher the score, the more sexually satisfied the respondent feels.

Sexual Desire

Sexual desire was measured using the Sexual Desire Inventory-2 (SDI-2; Spector et al., 1996). The SDI-2 is a 14-item scale that measures sexual desire, where desire is divided into two categories (desire for partnered sexual activity and desire for solitary sexual activity). Eight items of the scale are used to measure desire for partnered sexual activity, an example of one of those items being *When you first see an attractive person, how strong is your sexual desire?* Two of these eight items range from 0 (*lower sexual desire*) to 7 (*higher sexual desire*). The remaining questions range from 0 (*lower sexual desire*) to 8 (*higher sexual desire*). Three items of the scale measure desire for solitary sexual activity, an example of an item being *How strong is your desire to engage in sexual behaviour by yourself?* One of these three items range from 0 (*lower sexual desire*) to 7 (*higher sexual desire*) and the other two range from 0 (*lower sexual desire*) to 8 (*higher sexual desire*). The sum of scores ranges from 0 to a total of 23 points in desire for solitary sexual activity, and from 0 to 62 in desire for partnered sexual activity. The higher the score, the higher the participant's sexual desire. As this scale divided sexual desire into dyadic and solo sexual desire, data are also analyzed using the two subscales. Lastly, the authors of the scale suggest that three of the fourteen questions are not useful for calculating sexual desire (Spector et al., 1996). Thus, these items were not included in this study. Two of these items measure sexual desire in comparison to peers, instead of perceived sexual desire, and according to the authors would not be useful for calculating sexual desire. The last item of the scale measures one's ability to abstain from any type of sexual activity (partnered or solo) and the authors also do not use it to calculate sexual desire.

Sociosexual Orientation

Participants answered questions from the Revised Sociosexual Orientation Inventory (SOI-R; Penke & Asendorpf, 2008), a 9-item scale that measures sociosexual orientation. An example of an item is *How often do you experience sexual arousal when you are in contact with someone you are not in a committed romantic relationship with?* Answers on the scale range from 1 (*least often*) to 9 (*most often*). In eight of the nine questions, the higher the score, the more unrestricted one's sociosexual orientation is. In one question, the higher the score, the more restricted one's sociosexual orientation is. This question is reverse scored (meaning that a nine would be scored as a one). Scores add to a total of 81 possible sociosexual orientation points. The higher the score, the more willing a participant is to engage in casual sex.

Depression

Participants' depressive symptoms levels were measured using the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). The CES-D is a 20-item scale that measures depressive symptoms. Examples of symptoms measured by the scale are loss of appetite, sadness, and guilt. An example of an item is *I felt sad*. Each item can be scored from 0 (*least depressed*) to 3 (*most depressed*), with 16 items measuring depression directly. Higher scores in these items are an indication of depression. The remaining four items measure positive affect, meaning that lower scores on these items are an indication of depression. Scores are added at the end to measure the severity of depression to a total of 60 possible points. Items that

Table 1

Descriptive Statistics

	<i>N</i>	Minimum	Maximum	Mean	Std. Deviation
Age	642	18	72	26.23	6.85
Loneliness	601	23	79	51.55	10.77
Sexual Satisfaction	642	4	28	9.46	5.85
Sexual Frequency	641	1	7	1.85	1.34
Depression	604	0	55	23.40	11.79
Sociosexuality	634	9	65	33.19	10.02
Dyadic Sexual Desire	638	8	70	42.4	12.22
Solo Sexual Desire	629	3	26	15.62	5.62
Valid N (listwise)	552	–	–	–	–

measured positive affect are reverse scored, meaning that a score of 0 becomes a 3. Higher scores indicate higher depressive symptoms.

Sexual Frequency

To measure sexual frequency, participants answered the question *How often did you have sex in the previous 12 months?* Participants responded on a scale from 1 (*not at all*) to 7 (*four or more times a week*). Information on sexual frequency was gathered using only this question, so scores ranged from 1 to 7. The higher the number, the more frequently the participant had sex in the past 12 months.

Results

Loneliness and Sexual Satisfaction

To test the hypothesis that lonely individuals experience less sexual satisfaction, a multiple regression model was tested using loneliness and depression as predictors of sexual satisfaction. Loneliness and depression predicted 7.40% of the variance in sexual satisfaction, $R^2 = .07$, $F(2,56) = 22.73$, $p < .001$. Loneliness was a significant, negative predictor of sexual satisfaction, $\beta = -.22$, $p < .001$, but depression was not $\beta = -.08$, $p = .112$, confirming the hypothesis that the more loneliness is felt by respondents, the less sexual satisfaction they report.

Loneliness and Sexual Desire

A multiple regression model using loneliness and depression was used to predict desire for partnered sexual activity. The model was not significant, $R^2 = .01$, $F(2,565) = 1.59$, $p = .206$. Neither loneliness, $\beta = -.06$, $p = .258$, nor depression, $\beta = .10$, $p = .076$, predicted sexual desire for partnered sexual activity, refuting the hypothesis that lonelier individuals experience more desire for partnered sexual activity.

A multiple regression model assessed whether loneliness and depression significantly predicted desire for solo sexual activity. This model was not significant, $R^2 = .01$, $F(2,56) = 2.41$, $p = .090$. Neither loneliness, $\beta = .04$, $p = .484$, nor depression, $\beta = .07$, $p = .225$, predicted sexual desire for solitary sexual activity, refuting the hypothesis that lonelier individuals experience more desire for solo sexual activity.

Further Analyses

Additional multiple regression models were used to estimate how much of the variance in sexual satisfaction and sexual desire could be predicted by all the variables mentioned previously. In these models, the predictors were: loneliness, depression, gender,

age, sociosexual orientation, and sexual frequency.

A multiple regression was used to predict variation in sexual satisfaction using all the predictors mentioned above. The regression showed that the predictor variables significantly predicted 21.40% of the variance, $R^2 = .21$, $F(6,55) = 25.28$, $p < .001$. Loneliness, $\beta = -.14$, $p = .004$, depression, $\beta = -.12$, $p = .016$, sexual frequency, $\beta = .39$, $p < .001$, and sociosexual orientation, $\beta = -.13$, $p = .002$, were all significant predictors of sexual satisfaction. Age, $\beta = -.01$, $p = .762$, and gender, $\beta = .07$, $p = .058$, were not.

A multiple regression model evaluated the amount of variance in desire for partnered sexual activity that could be predicted by all the predictor variables mentioned above. The model was significant, and the predictor variables predicted 31.40% of the variance, $R^2 = .31$, $F(6,55) = 42.21$, $p < .001^{**}$. Sociosexual sexual orientation, $\beta = .53$, $p < .001^{**}$, and gender, $\beta = -.08$, $p = .037$, were significant predictors of desire for partnered sexual activity. Loneliness, $\beta = -.01$, $p = .825$, depression, $\beta = .07$, $p = .136$, age, $\beta = -.06$, $p = .096$, and sexual frequency, $\beta = .02$, $p = .639$, were also statistically non-significant.

Lastly, a multiple regression model tested how much of the variance in desire for solitary sexual activity is predicted by the predictor variables mentioned above. The model was significant, and the predictor variables predicted 16.70% of the variance, $R^2 = .17$, $F(6,55) = 18.28$, $p < .001^{**}$. Gender, $\beta = -.11$, $p = .010$, sexual frequency, $\beta = -.12$, $p = .006$, and sociosexual orientation, $\beta = .39$, $p < .001^{**}$, were all significant predictors of desire for solo sexual activity. Loneliness, $\beta = .05$, $p = .303$, depression $\beta = .06$, $p = .223$, and age, $\beta = -.03$, $p = .445$, were not.

Discussion

The hypothesis was that lonelier, non-depressed singles would experience more sexual desire and less sexual satisfaction than non-lonely singles. As observed in the results section, loneliness was not a significant predictor of sexual desire. Additionally, depression was also not associated with sexual desire. Regarding the second hypothesis, loneliness only predicted a small amount of the variance in sexual satisfaction, which was congruent with what was expected.

Thus, the data did not provide support for my earlier prediction that sexual desire could act similarly to loneliness in motivating people to seek social connection. Sexual desire might not be related to longing to form new social relationships. When it comes to sexual satisfaction, the lonelier one feels, the less sexually satisfied one tends to feel. This finding is

compatible with past research that showed that engaging in casual sex for non-autonomous reasons (in this case, the alleviation of loneliness) leads to more negative psychological outcomes (Townsend et al., 2020; Vrangalova, 2015), which could be the cause for a decrease in sexual satisfaction. Nevertheless, I expected a stronger relation between loneliness and sexual satisfaction than what was observed. Loneliness was not a good predictor of variance in sexual satisfaction. Sexual frequency was more strongly associated with sexual satisfaction, and was, consequently, a better predictor than loneliness.

A possible implication of loneliness having no relation to sexual desire and only being slightly related to sexual satisfaction is that loneliness might not be related to sex. Loneliness possibly does not interfere with one's willingness to have sex and it does not seem to increase sexual desire. Therefore, lonelier people might not be more inclined to have sex in an attempt to cope with feelings of loneliness, as was expected. Additionally, loneliness not being related to sex could also mean that having sex might not change one's overall feelings of loneliness. Thus, having sex to feel less lonely, as Fisher (2015) proposed that some lonely people do, might not be an effective way of self-regulating.

These findings suggest that the association between negative mood states and sexuality may be more complex than anticipated. Although most people experience a decrease in sexual desire when depressed, a significant minority of people experience an increase in sexual interest when depressed (Bancroft et al., 2003; Lykins et al., 2006; Rokach, 2019). This could explain the absence of an association between depression and sexual desire that was observed in this study.

In addition, although not investigated in this study, anxiety might influence the association between loneliness and sexuality. The association between anxiety and sexuality is also quite complicated. Dutton and Aron (1974) showed that high anxiety situations can increase sexual desire. In their now-classic experiment, they showed that men interviewed by an attractive female experimenter in an anxiety-inducing environment (a suspension bridge) significantly showed more signs of sexual interest than men who were interviewed in a more neutral environment (a regular bridge). On the other hand, Margaret and colleagues (1990), when discussing psychotherapeutic approaches for sexual dysfunction, postulate that anxiety is perceived as one of the main causes of sexual dysfunction due to it increasing how much one worries about sexual performance and fear of sexual failure. Bancroft and colleagues (2003) and Lykins and colleagues (2006) found that while a significant

percentage of the participants in their studies experienced a decrease in sexual interest caused by anxiety, a similar percentage of participants reported an increase in sexual interest when anxious, with Lykins and colleagues (2006) proposing that some people might use sexual activity to self-regulate anxiety.

Strengths and Limitations

One possible reason for the results obtained in this study is that data were collected during the lockdowns of the COVID-19 pandemic, and people might not have been as inclined to have sex as they were before, which would decrease their sexual satisfaction. Additionally, higher levels of stress brought on by the pandemic could influence one's sexuality, as increased levels of stress are associated with sexual dysfunction (Laumann et al., 1999) and with feeling dissatisfied with one's sex life (Sangi-Haghpeykar et al., 2009). Thus, stress could interfere with the relation between loneliness and sexual satisfaction. Furthermore, sexual desire in singles could be a direct reflection of opportunities for sex, and sexual opportunities during the pandemic tended to be lower due to social distancing and lockdown measures implemented to contain the pandemic, which could have diminished overall levels of sexual desire. Therefore, the pandemic (and the measures implemented by governments to fight it) might have interfered with the relation between loneliness and sexuality in singles that was observed in this study.

Another limitation of this study is that it measured trait loneliness, which is an enduring experience of social disconnection (Marangoni & Ickes, 1989), regardless of one's social surroundings. Trait loneliness is what loneliness scales tend to measure (Van Roekel et al., 2016), and it is strongly associated with depression. State loneliness, on the other hand, is more reactive. It tends to occur following changes in one's environment, such as moving to a new city (Marangoni & Ickes, 1989). State loneliness is temporary and an adaptive emotion as it increases one's desire to form new social connections. This could potentially include a desire to meet new sexual partners. So, a possible reason for loneliness not being related to sexual desire in this study is the focus on chronic feelings of loneliness (which could be impairing) instead of transient feelings of loneliness that could encourage one to look for sexual partners.

A strength of this study is that, to my knowledge, it is the first study of this kind. After conducting a literature review, I could find no other studies that investigated the association between loneliness and sexual desire, and loneliness and sexual satisfaction in singles. This made it challenging to find information to base the study on, but it could potentially lead to greater

interest in this area of research. Additionally, very few studies investigated the sexuality of single individuals, this current study did exactly that, and by doing so, it might help to understand the struggles that are faced by singles.

Future Directions

Future research could investigate if there are any changes in sexual desire on days when one's feelings of state loneliness increase. This could be done using daily diaries to measure daily fluctuations in state loneliness and sexual desire. Additionally, as anxiety is associated with loneliness (Hawkey & Cacioppo, 2010; Yanguas et al., 2018), future research that investigates the association between loneliness and sexuality should also take anxiety into account. Lastly, future research could also investigate the associations that were found between sexual satisfaction and sexual desire, and the control variables, which were better predictors than loneliness, such as sexual frequency predicting sexual satisfaction. These findings could guide future research so that we can better understand what factors influence sexual desire and sexual satisfaction in single individuals. Understanding these variables can help singles become better informed of the forces that contribute to their sexual well-being.

Conclusion

In summary, loneliness does not appear to be related to sexual desire and is weakly associated with sexual satisfaction. The data in this study did not provide support for the hypothesis that increased levels of loneliness would be associated with an increase in sexual desire, but it provided some support for the hypothesis that more loneliness would be associated with less sexual satisfaction. A potential implication of this study is that loneliness is not related to sexuality (or weakly related at best). Still, more research needs to be done on the topic to settle this. Future research could investigate how less enduring forms of loneliness can affect sexuality.

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders DSM-5* (5th ed.).
- Antičević, V., Jokić-Begić, N., & Britvić, D. (2017). Sexual self-concept, sexual satisfaction, and attachment among single and coupled individuals. *Personal Relationships, 24*(4), 858–868. <https://doi.org/10.1111/per.12217>
- Bancroft, J., Janssen, E., Strong, D., Carnes L., Vukadinovic Z., & Long J.S. (2003). The relation between mood and sexuality in heterosexual men. *Archives of Sexual Behavior, 32*(3), 217–230. <https://doi.org/10.1023/A:1023409516739>
- Bucher, A., Neubauer, A. B., Voss, A., & Oetzbach, C. (2018). Together is better: Higher committed relationships increase life satisfaction and reduce loneliness. *Journal of Happiness Studies, 20*(8), 2445–2469. <https://doi.org/10.1007/s10902-018-0057-1>
- Cacioppo, J. T., & Patrick, W. (2009). *Loneliness: human nature and the need for social connection*. W W Norton & Co.
- Cacioppo, S., Grippo, A. J., London, S., Goossens, L., & Cacioppo, J. T. (2015). Loneliness: Clinical import and interventions. *Perspectives on Psychological Science, 10*(2), 238–249. <https://doi.org/10.1177/1745691615570616>
- Dutton, D. G., & Aron, A. P. (1974). Some evidence for heightened sexual attraction under conditions of high anxiety. *Journal of Personality and Social Psychology, 30*(4), 510–517. <https://doi.org/10.1037/h0037031>
- Eres, R., Lim, M. H., Lanham, S., Jillard, C., & Bates, G. (2020). Loneliness and emotion regulation: Implications of having Social Anxiety Disorder. *Australian Journal of Psychology, 73*(1), 46–56. <https://doi.org/10.1080/00049530.2021.1904498>
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A. (2009). Statistical power analyses USING G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*(4), 1149–1160. <https://doi.org/10.3758/brm.41.4.1149>
- Fisher, C. I., Hahn, A. C., DeBruine, L. M., & Jones, B. C. (2016). Is women's sociosexual orientation related to their physical attractiveness? *Personality and Individual Differences, 101*, 396–399. <https://doi.org/10.1016/j.paid.2016.06.022>
- Fisher, W. (2015). Loneliness and sexuality. In A. Sha'ked & A. Rokach (Eds.), *Addressing loneliness: Coping, prevention and clinical interventions* (pp. 34–50). Routledge.
- Hawkey, L. C., & Cacioppo, J. T. (2010). Loneliness matters: A theoretical and empirical review of consequences and mechanisms. *Annals of Behavioral Medicine, 40*(2), 218–227. <https://doi.org/10.1007/s12160-010-9210-8>
- Higgins, J. A., Mullinax, M., Trussell, J., Davidson, J. K., & Moore, N. B. (2011). Sexual satisfaction and sexual health among university students in the United States. *American Journal of Public Health, 101*(9), 1643–1654. <https://doi.org/10.2105/ajph.2011.300154>
- Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science, 10*(2), 227–237. <https://doi.org/10.1177/1745691614568352>
- Kennedy, S. H., Dickens, S. E., Eisfeld, B. S., & Bagby, R. (1999). Sexual dysfunction before

- antidepressant therapy in major depression. *Journal of Affective Disorders*, 56(2–3), 201–208. [https://doi.org/10.1016/s0165-0327\(99\)00050-6](https://doi.org/10.1016/s0165-0327(99)00050-6)
- Killeen, C. (1998). Loneliness: An epidemic in modern society. *Journal of Advanced Nursing*, 28(4), 762–770. <https://doi.org/10.1046/j.1365-2648.1998.00703.x>
- Kislev, E. (2020). Does marriage really improve sexual satisfaction? Evidence from the Pairfam Dataset. *Journal of Sex Research*, 57(4), 470–481. <https://doi.org/10.1080/00224499.2019.1608146>
- Kislev, E. (2021) The sexual activity and sexual satisfaction of singles in the second demographic transition. *Sexuality Research and Social Policy*, 18, 726–738. <https://doi.org/10.1007/s13178-020-00496-0>
- Laumann, E. O., Paik, A., & Rosen, R. C. (1999). Sexual dysfunction in the United States: Prevalence and predictors. *JAMA*, 281(6), 537–544. <https://doi.org/10.1001/jama.281.6.537>
- Lourenço, M., Azevedo, L. P., & Gouveia, J. L. (2010). Depression and sexual desire: An exploratory study in psychiatric patients. *Journal of Sex & Marital Therapy*, 37(1), 32–44. <https://doi.org/10.1080/0092623x.2011.533578>
- Lykins, A. D, Janssen, E., & Graham, C. A. (2006). The relationship between negative mood and sexuality in heterosexual college women and men. *Journal of Sex Research*, 43(2), 136–143. <https://doi.org/10.1080/00224490609552308>
- Marangoni, C., & Ickes, W. (1989). Loneliness: A theoretical review with implications for measurement. *Journal of Social and Personal Relationships*, 6(1), 93–128. <https://doi.org/10.1177/026540758900600107>
- Margaret, A., Cranston-Cuebas, A. B., & Barlow, D. H. (1990). Cognitive and affective contributions to sexual functioning. *Annual Review of Sex Research*, 1(1), 119–161. <https://doi.org/10.1080/10532528.1990.10559858>
- Park, Y., Impett, E. A., & Macdonald, G. (2021). Singles' sexual satisfaction is associated with more satisfaction with singlehood less interest in marriage. *Personality and Social Psychology Bulletin*, 47(5), 741–752. <https://doi.org/10.1177/0146167220942361>
- Park, Y., & MacDonald, G. (2022). Single and partnered individuals' sexual satisfaction as a function of sexual desire and activities: Results using a sexual satisfaction scale demonstrating measurement invariance across partnership status. *Archives of Sexual Behavior*, 51(1), 547–564. <https://doi.org/10.1007/s10508-021-02153-y>
- Pedersen, W., & Blekesaune, M. (2003). Sexual satisfaction in young adulthood: Cohabitation, committed dating or unattached life? *Acta Sociologica*, 46(3), 179–193. <https://doi.org/10.1177/00016993030463001>
- Penke, L., & Asendorpf, J. B. (2008). Beyond global sociosexual orientations: A more differentiated look at sociosexuality and its effects on courtship and romantic relationships. *Journal of Personality and Social Psychology*, 95(5), 1113–1135. <https://doi.org/10.1037/0022-3514.95.5.1113>
- Perlman, D., & Peplau, L. (1982). Theoretical approaches to loneliness. *Loneliness: A sourcebook of current theory* (36, pp. 123–134). Wiley.
- Phillips, R. L., Jr, & Slaughter, J. R. (2000). Depression and sexual desire. *American Family Physician*, 62(4), 782–786.
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1(3), 385–401. <https://doi.org/10.1177/014662167700100306>
- Reynaert, C., Zdanowicz, N., Janne, P., & Jacques, D. (2010). Depression and sexuality. *Psychiatria Danubina*, 22(1), S111–S113.
- Rokach, A. (2019). The effect of psychological conditions on sexuality: A review. *Psychology and Psychotherapy: Research Study*, 2(2). <https://doi.org/10.31031/PPRS.2019.02.000534>
- Russell, D. W. (1996). UCLA loneliness scale (Version 3): Reliability, validity, and factor structure. *Journal of Personality Assessment*, 66(1), 20–40. https://doi.org/10.1207/s15327752jpa6601_2
- Sangi-Haghpeykar, H., Ambani, D. S., & Carson, S. A. (2009). Stress, workload, sexual well-being and quality of life among physician residents in training. *International Journal of Clinical Practice*, 63(3), 462–467. <https://doi.org/10.1111/j.1742-1241.2008.01845.x>
- Spector, I. P., Carey, M. P., & Steinberg, L. (1996). The sexual desire inventory: Development, factor structure, and evidence of reliability. *Journal of Sex & Marital Therapy*, 22(3), 175–190. <https://doi.org/10.1080/00926239608414655>
- Sprecher, S. (2002). Sexual satisfaction in premarital relationships: Associations with satisfaction, love, commitment, and stability. *Journal of Sex Research*, 39(3), 190–196. <https://doi.org/10.1080/00224490209552141>
- Townsend, J. M., Jonason, P. K., & Wasserman, T. H. (2020). Associations between motives for casual sex, depression, self-esteem, and sexual victimization. *Archives of Sexual Behavior*, 49(4), 1189–1197. <https://doi.org/10.1007/s10508-019-01482-3>
- Van Roekel, E., Verhagen, M., Engels, R. C., Scholte, R. H., Cacioppo, S., & Cacioppo, J. T. (2016). Trait and state levels of loneliness in early and late adolescents: Examining the differential reactivity hypothesis. *Journal of Clinical Child & Adolescent Psychology*, 47(6), 888–899. <https://doi.org/10.1080/15374416.2016.1146993>
- Vrangalova, Z. (2015). Does casual sex harm college students' well-being? A longitudinal investigation of the role of motivation. *Archives of Sexual Behavior*, 44(4), 945–959. <https://doi.org/10.1007/>

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s10508-013-0255-1

- Vrangalova, Z., & Ong, A. D. (2014). Who benefits from casual sex? The moderating role of sociosexuality. *Social Psychological and Personality Science*, *5*(8), 883–891. <https://doi.org/10.1177/1948550614537308>
- Warehime, M. N., & Bass, L. E. (2008). Breaking singles up: Sexual satisfaction among men and women. *International Journal of Sexual Health*, *20*(4), 247–261. <https://doi.org/10.1080/19317610802417877>
- Weeks, D. G., Michela, J. L., Peplau, L. A., & Bragg, M. E. (1980). Relation between loneliness and depression: A structural equation analysis. *Journal of Personality and Social Psychology*, *39*(6), 1238–1244. <https://doi.org/10.1037/h0077709>
- Yanguas, J., Pinazo-Henandis, S., & Tarazona-Santabalbina, F. J. (2018). The complexity of loneliness. *Acta bio-medica: Atenei Parmensis*, *89*(2), 302–314. <https://doi.org/10.23750/abm.v89i2.7404>

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