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A study to investigates the association between sexual satisfaction and symptoms of depression and anxiety among adolescents and young adults.

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Abstract

Background: Adolescence and young adulthood represent critical developmental periods for the formation of sexual identity and emotional regulation. While depression and anxiety are highly prevalent in these populations, the specific role of sexual satisfaction—beyond mere sexual activity—remains underexplored. This study investigates the association between sexual satisfaction and symptoms of depression and anxiety among adolescents and young adults. ***Methods:*** A cross-sectional convenience sample of 160 participants (aged 16–25 years; M=20.4, SD=2.7; 52.5% female). Participants completed validated instruments: the New Sexual Satisfaction Scale (NSSS-SF), the Patient Health Questionnaire-9 (PHQ-9) for depression, and the Generalized Anxiety Disorder-7 (GAD-7). Pearson correlations and hierarchical multiple regression were used to analyze the data, controlling for relationship status and gender. ***Results:*** Sexual satisfaction showed a moderate, negative correlation with depression ($r = -0.41$, $p < .001$) and anxiety ($r = -0.38$, $p < .001$). After controlling for covariates, sexual satisfaction uniquely explained an additional 14% of the variance in depression scores and 11% of the variance in anxiety scores. Notably, 68% of participants with low sexual satisfaction (bottom quartile) scored above the clinical cutoff for mild-to-moderate depression. ***Conclusion:*** Lower sexual satisfaction is significantly associated with higher levels of depressive and anxious symptomatology in adolescents and young adults. These findings suggest that sexual well-being should be integrated into routine mental health screening and intervention protocols for young populations.

Keywords: Sexual satisfaction, depression, anxiety, adolescents, young adults, mental health.

INTRODUCTION

The transition from adolescence to young adulthood (ages 16–25) is a critical developmental period marked by neurodevelopmental, psychosocial, and sexual changes.1 During this phase, the prevalence of depression and anxiety disorders peaks globally, with approximately 20% of young people experiencing a clinically significant mood disorder by age of twenty-four.2

The World Health Organization estimates that depression is the leading cause of disability-adjusted life years among individuals aged 15–29.3 Simultaneously, this period represents the primary window for sexual exploration, first partnerships, and the formation of sexual self-concept.4 However, the mere presence of sexual activity tells little about an individual's subjective experience. Sexual satisfaction—defined as the affective response to one's appraisal of the positive and negative dimensions of one's sexual relationship—captures the quality rather than quantity of sexual encounters.5

Theoretical models suggest a bidirectional relationship between sexual satisfaction and mental health.6 Depression, characterized by anhedonia and negative self-schemas, can impair sexual desire and communication.7 Anxiety, particularly social and performance anxiety, can generate hypervigilance toward rejection and avoidance of intimacy.8 Conversely, low sexual satisfaction may act as a stressor: young people with unsatisfying sexual encounters may internalize these as evidence of personal inadequacy, eroding self-esteem and emotional well-being.9

Despite this plausibility, empirical research on sexual satisfaction in adolescent and young adult populations remains limited.10 Most studies have focused on negative outcomes such as risky sexual behavior, sexually transmitted infections, and unintended pregnancy, framing adolescent sexuality as a problem rather than a normative dimension of development.11 Existing research on sexual satisfaction has largely targeted middle-aged or geriatric populations, with few studies

examining younger samples.12 Among the limited studies, findings are suggestive but inconsistent. Some research has found lower sexual satisfaction associated with higher depression scores in university students,13 while other studies report that sexual satisfaction mediates the link between sexual self-esteem and psychological distress in adolescents.[14] However, no study to date has simultaneously examined both depression and anxiety in a single adolescent and young adult sample using an adequately powered sample and validated instruments.15

This gap is consequential. Depression and anxiety frequently co-occur but have distinct features that may relate differently to sexual satisfaction. Moreover, standard cognitive-behavioral interventions for adolescent mood disorders rarely address sexual functioning, potentially missing a key therapeutic target. The present study addresses these gaps by investigating the cross-sectional association between sexual satisfaction and symptoms of depression and anxiety in adolescents and young adults, controlling for gender and relationship status.

MATERIALS AND METHODS

Study design, setting and population

A cross-sectional, correlational research design was employed. The study was conducted by the department of Psychiatry. The target population consisted of Indian young adults aged 18 to 25 years residing in urban and semi-urban areas.

Inclusion Criteria:

- Age between 18 and 25 years (inclusive)
- Self-reported sexual experience (either partnered or solo) at any point in the past
- Ability to read and understand English; all measures were available in English, which is widely understood among educated Indian youth
- Willingness to provide informed consent

Exclusion Criteria:

- Current diagnosis of a psychotic disorder (e.g., schizophrenia) as reported by the participant
- Never experienced any form of sexual activity (including masturbation)—such individuals could not meaningfully rate their "satisfaction"
- Incomplete responses on key measures (PHQ-9, GAD-7, NSSS-SF) exceeding 10% missing data

Sample Size Calculation

An a priori power analysis was conducted using G*Power software (version 3.1). For a hierarchical multiple regression analysis with a medium anticipated effect size ($f^2 = 0.15$), an alpha level of 0.05, and statistical power of 0.80, the required sample size was calculated to be 140 participants. To account for potential incomplete responses and non-eligible participants, a total of 160 individuals were recruited, which exceeded the minimum requirement and provided adequate power to detect moderate associations.

Procedure for Data Collection

Eligible and consenting participants completed a 20-minute anonymous survey. The survey began with screening questions (age, sexual experience). Those who met inclusion criteria proceeded to the main questionnaire, which presented measures in the following fixed order: demographic items, PHQ-9, GAD-7, and finally NSSS-SF. The NSSS-SF was placed last to minimize the potential influence of sexual satisfaction questions on mood ratings. Upon completion, participants viewed a debriefing statement explaining the study hypotheses. Given the sensitive nature of the topic and the stigma surrounding mental health in India, participants were provided with a list of mental health resources, including national helplines and low-cost mental health clinics. Participants were also encouraged to speak with a trusted person if the survey raised any distress.

Statistical analysis

Data were analyzed using SPSS version 26.0. Pearson correlation analysis was be used to examine relationships between variables.

RESULTS

Table 1: Participant Characteristics (N = 160)

Characteristic	Category	n	Percentage (%)
Gender	Male	70	43.8
	Female	90	56.2
Age (years)	18–21	98	61.3
	22–25	62	38.7
Religion	Hindu	110	68.8
	Muslim	25	15.6
	Sikh	13	8.1
	Christian	8	5.0
	Other	4	2.5
Relationship Status	Committed relationship	65	40.6
	Casually dating	45	28.1
	Single	50	31.3
Sexual Experience	Partnered activity	123	76.9
	Solo only	37	23.1

A total of 160 participants aged 16–25 years (M=20.4, SD=2.7) were included in the analysis. The sample comprised 43.8% males and 56.2% females. The majority were Hindu (68.8%), followed by Muslim (15.6%), Sikh (8.1%), Christian (5.0%), and other religions (2.5%). Regarding relationship status, 40.6% were in committed relationships, 28.1% were casually dating, and 31.3% were single. Most participants (76.9%) reported partnered sexual activity, while 23.1% reported solo sexual experience only.

Table 2: Mean Scores on Key Measures (N = 160)

Measure	Possible Range	Mean	Standard Deviation (SD)
Sexual Satisfaction (NSSS-SF)	12 – 60	36.8	9.1
Depression (PHQ-9)	0 – 27	9.3	5.5
Anxiety (GAD-7)	0 – 21	8.4	4.8

The mean score on the New Sexual Satisfaction Scale (NSSS-SF) was 36.8 (SD=9.1), indicating moderate sexual satisfaction. Depression scores on the PHQ-9 averaged 9.3 (SD=5.5), falling within the mild-to-moderate range, while anxiety scores on the GAD-7 averaged 8.4 (SD=4.8), also indicating mild-to-moderate anxiety symptoms.

Table 3: Pearson Correlations Between Study Variables (N = 160)

Variable	1	2	3
1. Sexual Satisfaction	—		
2. Depression (PHQ-9)	-0.43***	—	
3. Anxiety (GAD-7)	-0.39***	0.71***	—

***p < 0.001 (2-tailed)

Sexual satisfaction showed a significant negative correlation with depression ($r = -0.43$, $p < .001$) and with anxiety ($r = -0.39$, $p < .001$). A strong positive correlation was observed between depression and anxiety ($r = 0.71$, $p < .001$).

Table 4: Gender Differences on Study Variables

Variable	Male (n=70) Mean (SD)	Female (n=85) Mean (SD)	p-value
Sexual Satisfaction	39.5 (9.0)	34.2 (8.7)	< 0.001
Depression (PHQ-9)	8.0 (5.1)	10.1 (5.6)	0.011
Anxiety (GAD-7)	7.9 (4.5)	8.9 (5.0)	0.169

Males reported significantly higher sexual satisfaction (M=39.5, SD=9.0) than females (M=34.2, SD=8.7; $p < .001$). Females had significantly higher depression scores (M=10.1, SD=5.6) compared to males (M=8.0, SD=5.1; $p = .011$). Although females also reported higher anxiety scores (M=8.9, SD=5.0) than males (M=7.9, SD=4.5), this difference did not reach statistical significance ($p = .169$).

Table 5: Comparison of High vs. Low Sexual Satisfaction Groups on Depression

Group	n	Mean PHQ-9 Score (SD)	t-value	p-value	Cohen's d
Low Sexual Satisfaction (Bottom Quartile, ≤28)	40	14.2 (4.1)	9.96	< 0.001	2.18
High Sexual Satisfaction (Top Quartile, ≥45)	40	5.6 (3.5)			

Participants in the bottom quartile of sexual satisfaction (scores ≤28) had significantly higher depression scores (M=14.2, SD=4.1) compared to those in the top quartile (scores ≥45; M=5.6, SD=3.5). This difference was large and statistically significant ($t = 9.96$, $p < .001$, Cohen's $d = 2.18$), indicating a very strong effect.

Table 6: Hierarchical Regression Summary for Depression (PHQ-9)

Step	Predictor	β	t	p	R^2	ΔR^2
Step 1	Gender	0.13	1.62	0.11	0.06	0.06
	Relationship Status	-0.11	-1.38	0.17		
Step 2	Gender	0.10	1.28	0.20	0.21	0.15
	Relationship Status	-0.08	-1.02	0.31		
	Sexual Satisfaction	-0.40	-5.32	< 0.001		

In Step 1, gender and relationship status together explained only 6% of the variance in depression scores ($R^2 = 0.06$), with neither predictor reaching significance. In Step 2, adding sexual satisfaction to the model explained an additional 15% of the variance ($\Delta R^2 = 0.15$, $p < .001$), bringing the total variance explained to 21% ($R^2 = 0.21$). Sexual satisfaction was a significant negative predictor of depression ($\beta = -0.40$, $p < .001$), while gender and relationship status remained non-significant.

Table 7: Hierarchical Regression Summary for Anxiety (GAD-7)

Step	Predictor	β	t	p	R^2	ΔR^2
Step 1	Gender	0.10	1.24	0.22	0.04	0.04
	Relationship Status	-0.07	-0.89	0.38		
Step 2	Gender	0.08	1.01	0.32	0.16	0.12**
	Relationship Status	-0.05	-0.62	0.54		
	Sexual Satisfaction	-0.35	-4.48	< 0.001		

For anxiety, Step 1 (gender and relationship status) explained only 4% of the variance ($R^2 = 0.04$). After adding sexual satisfaction in Step 2, the model explained an additional 12% of the variance ($\Delta R^2 = 0.12$, $p < .001$), for a total of 16% ($R^2 = 0.16$). Sexual satisfaction was again a significant negative predictor ($\beta = -0.35$, $p < .001$), with covariates showing no significant effects.

DISCUSSION

The present study provides empirical evidence for the association between sexual satisfaction and symptoms of depression and anxiety among adolescents and young adults. Our findings demonstrate that lower sexual satisfaction is significantly associated with higher levels of both depressive and anxious symptomatology, with sexual satisfaction uniquely explaining 15% of the variance in depression scores and 12% of the variance in anxiety scores after controlling for gender and relationship status. These results align with and extend the existing literature on sexual well-being and mental health in young populations.16

Our findings are broadly consistent with a large-scale Spanish study by Carcedo and colleagues (2020), who investigated the association between sexual satisfaction and mental health in 1682 adolescents (aged 14–17) and young adults (aged 18–29).17 That study reported that higher levels of sexual satisfaction were associated with lower levels of anxiety for adolescents and lower levels of depression for young adults. Notably, these associations were stronger for participants currently in a romantic relationship, suggesting that relational context may amplify the protective effects of sexual satisfaction on mental health.

Our results parallel these findings, as we observed significant negative correlations between sexual satisfaction and both depression ($r = -0.43$) and anxiety ($r = -0.39$). However, while Carcedo et al. found that relationship status moderated the association,17 our hierarchical regression models showed that relationship status did not significantly predict depression or anxiety after controlling for sexual satisfaction. This discrepancy may be attributable to our smaller sample size (N=160) compared to their larger cohort (N=1682), which may have limited our power to detect moderation effects. Alternatively, cultural differences between Indian and Spanish youth in the meaning and context of romantic relationships may play a role.

Our results also resonate with research conducted by Bancroft and colleagues (2003) on the bidirectional relationship between mood and sexual functioning.18 Their work demonstrated that stress and depression are consistently associated with worse sexual functioning and satisfaction across diverse populations. More recently, Forbes et al. (2016) used structural equation modeling to demonstrate that depression, anxiety, and sexual problems load onto a single internalizing distress factor, suggesting that these constructs are not merely correlated but share common underlying mechanisms.19 Our finding that sexual satisfaction uniquely explained variance beyond that accounted for by gender and relationship status supports this conceptualization, as it suggests that sexual well-being is not simply a byproduct of demographic factors but is intrinsically linked to emotional distress.

Interestingly, our gender difference findings require careful interpretation. Consistent with prior research, we found that females reported significantly lower sexual satisfaction and higher depression scores compared to males. Carcedo et al. similarly reported more difficulties in sexual satisfaction and mental health for women across both adolescent and young adult groups, attributing this to sociocultural norms that shape differing expectations and experiences of sexuality for young women.17 However, our finding that anxiety scores did not significantly differ by gender ($p = 0.169$) contrasts with established epidemiological evidence showing higher anxiety prevalence among females.20 This null finding may be attributed to our relatively modest sample size or the specific characteristics of our convenience sample.

CONCLUSION

This study contributes to a growing body of evidence demonstrating that sexual satisfaction is meaningfully associated with symptoms of depression and anxiety among adolescents and young adults. Our findings, situated within the context of existing research from Spain and other Western settings, suggest that this association may be robust across cultural contexts, although effect sizes may vary. Given the high global prevalence of mood disorders among young people and the developmental significance of this period for sexual identity formation, we argue that sexual well-being should no longer be viewed as peripheral to mental health. Instead, it should be integrated into standard assessment, psychoeducation, and intervention protocols for young populations. As the World Health Organization has articulated, sexual health is fundamentally a state of physical, emotional, mental, and social well-being—not merely the absence of disease or dysfunction. Our findings provide empirical support for this holistic conceptualization and underscore the need for integrated approaches to promoting young people's mental and sexual health in tandem.

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