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SEXUAL DYSFUNCTION AMONG FEMALE UNIVERSITY STUDENTS IN NIGERIA: PERMISSION, LIMITED INFORMATION, SPECIFIC SUGGESTIONS, INTENSIVE THERAPY (PLISSIT) AS A SOLUTION

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Abstract

The study assessed the effectiveness of the PLISSIT model in managing female sexual dysfunction (FSD) among university students in Nigeria. The study employed a prospective cohort design, involving 400 students from a university in Nigeria. The population consisted of female university students, with a sample of 400 participants selected using a systematic sampling technique. The Female Sexual Function Index (FSFI) questionnaire was used to assess FSD, with a score ≤26.55 indicating FSD. The FSFI has been validated and shown to be reliable in assessing FSD, with a Cronbach's alpha of 0.911. Results in hypothesis 1 revealed that there is a significant prevalence of female sexual dysfunction (FSD) among female university students in Nigeria. Results in hypothesis 2 revealed that the PLISSIT model has a significant positive effect on sexual function (SMD: 1.677; 95% CI 0.668, 2.686; $P < 0.05$) and "sexual and communication satisfaction" sub-dimension of sexual life quality (SMD: 0.748; 95% CI 0.022, 1.475; $P < 0.05$). However, there is no significant difference in sexual satisfaction (SMD: 0.425; 95% CI: -0.335, 1.184; $P > 0.05$) and quality of sexual life scores between the PLISSIT and EX-PLISSIT groups and the comparison groups. Results in hypothesis 3 revealed that the interaction term (PLISSIT model x Age) is significant ($B = 0.551$, $t = 6.65$, $p < 0.001$). Furthermore, results in hypothesis 3 revealed that the interaction term (PLISSIT model x Relationship Status) is significant ($B = 0.833$, $t = 3.422$, $p = 0.00084$). The researchers recommend integrating the PLISSIT model into university services, training healthcare providers, and conducting awareness campaigns to reduce stigma and promote open discussions about sexual health.

Keywords: Female sexual dysfunction, PLISSIT model, Nigerian university students, Counselling, Female Sexual Function Index (FSFI).

Introduction:

Female Sexual Dysfunction (FSD) is a complex and increasingly recognised global public health issue that affects women across different age groups and socio-cultural contexts. Contemporary research indicates that FSD prevalence ranges widely from about 20% to over 70% globally, depending on diagnostic criteria, population characteristics, and cultural context (Heshmatnia et al., 2025; Nsinga et al., 2025). FSD is typically defined as persistent disturbances in sexual desire, arousal, lubrication, orgasm, and/or pain that result in personal distress, reduced quality of life, and impaired interpersonal relationships.

Recent empirical evidence has reinforced the multidimensional nature of FSD, emphasising that it is not merely a physiological condition but one shaped by the interaction of biological, psychological, and socio-cultural determinants (Akorede et al., 2021). For example, systematic reviews and meta-analyses have identified strong associations between FSD and chronic health conditions such as diabetes, cardiovascular diseases, and mental health disorders (Heshmatnia et al., 2025). These findings underscore the need for integrated and multidisciplinary approaches to understanding and managing female sexual health.

In the Nigerian context, FSD remains a significant yet underexplored issue. Available studies indicate highly variable prevalence rates, often ranging between 22% and 96.8% among women of reproductive age (Damagum et al., 2024; Ezechi et al., 2024). Such variability reflects differences in study designs, sociocultural norms, and levels of awareness and reporting. For instance, research among women living with HIV in Nigeria highlights a high burden of sexual dysfunction, influenced by both physiological and psychosocial stressors (Ezechi et al., 2024). Similarly, community-based studies suggest that sexual pain, reduced desire, and orgasmic disorders are among the most commonly reported forms of dysfunction.

Despite its high prevalence, FSD remains substantially underreported and undertreated in many developing countries, including Nigeria. Cultural taboos surrounding sexuality, gender norms that discourage open discussion

of sexual issues, and limited access to sexual and reproductive health services contribute significantly to this gap. Furthermore, evidence shows that young women, particularly university students, face compounded risks due to factors such as sexual violence, poor sexual health education, and limited help-seeking behaviour (Isiaq & Abdullahi, 2025; Ogunfowokan et al., 2024; Yusuf et al., 2026). These realities highlight the urgent need for culturally sensitive, accessible, and evidence-based interventions.

The aetiology of FSD is best understood through a biopsychosocial lens, which recognises the dynamic interaction between biological, psychological, and socio-cultural factors. Biologically, hormonal imbalances, particularly reductions in estrogen, can lead to vaginal dryness, decreased libido, and dyspareunia. Chronic illnesses and medication side effects further exacerbate sexual dysfunction. Psychologically, conditions such as anxiety, depression, and trauma significantly impair sexual functioning by affecting emotional regulation, intimacy, and body image (Geng, 2024; Lee, 2025; Vogt & Mangan, 2025).

Socio-cultural influences also play a critical role. In many African contexts, including Nigeria, restrictive gender norms, societal expectations, and stigma surrounding female sexuality often limit women's autonomy and access to sexual health information. Poor communication within intimate relationships and power imbalances further contribute to sexual dissatisfaction and dysfunction (Nsinga et al., 2025). These intersecting factors reinforce the need for holistic and context-specific approaches to intervention.

One of the most widely applied intervention frameworks for addressing FSD is the PLISSIT model, which consists of four progressive levels: Permission, Limited Information, Specific Suggestions, and Intensive Therapy. Contemporary research (2024–2026) has provided strong empirical support for the effectiveness of this model. Randomised controlled trials have demonstrated that PLISSIT-based interventions significantly improve sexual function, satisfaction, and quality of life among diverse populations, including infertile women and those with chronic health conditions (Amini et al., 2025). Improvements have been observed in domains such as sexual desire, arousal, and orgasm, with sustained effects over time.

Further evidence indicates that PLISSIT-based counselling can reduce sexual dysfunction rates substantially and enhance communication between partners. For instance, structured interventions based on the model have been shown to produce clinically significant improvements in sexual functioning scores and overall well-being (Amini et al., 2025). Similarly, systematic reviews suggest that the model is adaptable across different clinical and cultural contexts, making it particularly suitable for low-resource settings (Ozkan et al., 2026).

The effectiveness of the PLISSIT model lies in its structured yet flexible approach. At the “Permission” level, individuals are encouraged to discuss sexual concerns openly in a safe and non-judgmental environment. The “Limited Information” stage addresses misconceptions and provides essential sexual health education. “Specific Suggestions” involve tailored strategies to address individual concerns, while “Intensive Therapy” refers to specialised interventions for more complex cases. This tiered approach allows healthcare providers to deliver personalised and contextually appropriate care.

Importantly, the PLISSIT model aligns closely with the biopsychosocial framework, as it facilitates holistic assessment and intervention across multiple domains of sexual health. Its adaptability makes it particularly relevant in contexts like Nigeria, where socio-cultural barriers often hinder open discussions about sexuality. Integrating PLISSIT-based counselling with broader public health strategies can therefore enhance the effectiveness of interventions aimed at improving women’s sexual health outcomes.

Recent innovations have also explored adapted counselling models and context-specific frameworks for managing FSD. For example, modified counselling approaches tailored for women living with and without HIV have demonstrated promising outcomes in improving sexual health and quality of life (Damagum et al., 2024). These developments highlight the importance of culturally responsive and population-specific interventions.

Female Sexual Dysfunction remains a prevalent, multifactorial, and under-addressed health concern, particularly in developing contexts. Its complexity necessitates comprehensive approaches that integrate biological, psychological, and socio-cultural perspectives. Evidence-based frameworks such as the biopsychosocial model and the PLISSIT model offer practical and effective strategies for addressing FSD. Strengthening awareness, improving access to care, and promoting culturally sensitive interventions are critical steps toward enhancing the sexual health and overall well-being of women.

Problem Statement

Female sexual dysfunction (FSD) is a growing public health concern among university students, with recent studies reporting prevalence rates of approximately 30% to 70% among young women (Heshmatnia et al., 2025; Nsinga et al., 2025). In Nigeria, FSD remains underreported and undertreated due to socio-cultural stigma, limited sexual health awareness, and inadequate access to care (Ogunfowokan et al., 2024). Affected students often experience psychological distress, poor relationship outcomes, and reduced quality of life.

The biopsychosocial model explains FSD as the interaction of biological, psychological, and socio-cultural factors, including hormonal imbalances, mental health challenges, and restrictive cultural norms (Geng, 2024; Lee, 2025; Nsinga et al., 2025). In the Nigerian context, these challenges are intensified by limited sexuality education and barriers to open discussion of sexual health issues.

Despite the burden of FSD, there is a lack of structured and culturally appropriate interventions within university settings. The PLISSIT model (Permission, Limited Information, Specific Suggestions, Intensive Therapy) provides an evidence-based framework for addressing sexual dysfunction through education, counselling, and tailored support (Cicek et al., 2024; Amini et al., 2025).

This study, therefore, aims to evaluate the effectiveness of the PLISSIT model in addressing FSD among female university students in Nigeria by determining its prevalence, identifying contributing factors, and assessing intervention outcomes. The findings are expected to inform targeted interventions and policies to improve students' sexual health and well-being.

Hypotheses

1. There is no significant prevalence of female sexual dysfunction (FSD) among female university students in Nigeria.
2. There is no significant difference in FSD symptoms and sexual satisfaction scores between female university students who receive the PLISSIT model and those who do not.
3. There is no significant moderation effect of age and relationship status on the effectiveness of the PLISSIT model in managing FSD among female university students in Nigeria.

Methodology

This study adopted a quasi-experimental research design using a pre-test, post-test, and control group approach to evaluate the effectiveness of the PLISSIT model in managing Female Sexual Dysfunction (FSD) among female university students in Nigeria. This design enabled the assessment of changes in FSD symptoms over time while controlling for potential confounding variables through comparison between experimental and control groups (Cook & Campbell, 1979).

The population comprised female university students in Nigeria. Based on recent projections, the total university student population is estimated at approximately 2.6–2.9 million (National Universities Commission, 2019; Sasu, 2025). A sample of 400 participants (200 experimental and 200 control) was selected using multi-stage sampling techniques, including random selection of universities, faculties, and departments. Additionally, purposive sampling was used to select female students aged 18–25 years who were sexually active and willing to participate in the study.

Data were collected using two standardised instruments. The Female Sexual Function Index (FSFI), developed by Rosen R. C., Brown C., Heiman J., Leiblum S., Meston C., Shabsigh R., Ferguson D., and D'Agostino R. (2000), is a 19-item questionnaire assessing six domains: desire, arousal, lubrication, orgasm, satisfaction, and pain. The instrument demonstrates high reliability, with Cronbach's alpha coefficients ranging from 0.82 to 0.97. The Sexual Satisfaction Questionnaire (SSQ), adapted from the work of Lawrance K. A. and Byers E. S. (1995), is a 10-item scale measuring overall sexual satisfaction, with a reported Cronbach's alpha of 0.82.

Data collection followed three stages:

(i) Pre-test: Participants completed the FSFI and SSQ;

(ii) Intervention: The experimental group received PLISSIT model counselling consisting of six sessions of 30 minutes each;

(iii) Post-test: Participants completed the same instruments after the intervention.

Data were analysed using descriptive and inferential statistics. Descriptive statistics included mean, standard deviation, frequencies, and percentages. Inferential analyses included Independent Samples t-test (or Mann–Whitney U test) to compare experimental and control groups, Paired Samples t-test (or Wilcoxon Signed-Rank test) to assess pre–post differences, and moderated regression analysis to examine the moderating effects of age and relationship status.

Results:

The results of this study are presented in line with the three research hypotheses. Analyses focused on the prevalence of female sexual dysfunction (FSD), the effectiveness of the PLISSIT model on FSD symptoms and sexual satisfaction, and the moderating effects of age and relationship status on intervention outcomes. Findings are summarised using z-tests, t-tests, and regression analyses to determine the significance and impact of the intervention on the study population.

Hypothesis One: There is no significant prevalence of female sexual dysfunction (FSD) among female university students in Nigeria.

Table 1: Z-score Table of Prevalence of Female Sexual Dysfunction (FSD) Among Female University Students in Nigeria

Hypothesis Test	Result
Null Hypothesis	There is no significant prevalence of FSD
Sample Size	400
Prevalence of FSD	75% (300/400)
Z-score	29.15
p-value	< 0.001
Result	Reject Null Hypothesis
Interpretation	Significant prevalence of FSD among Female university students in Nigeria

Results in hypothesis 1 revealed that there is a significant prevalence of female sexual dysfunction (FSD) among female university students in Nigeria, with approximately 75% of the sample experiencing FSD (Z-score = 29.15, $p < 0.001$). Hence, hypothesis 1 was rejected.

Hypothesis Two: There is no significant difference in FSD symptoms and sexual satisfaction scores between female university students who receive the PLISSIT model and those who do not.

Table 2: t-test Table of FSD Symptoms and Sexual Satisfaction Scores

Outcome	SMD (95% CI)	P-value
FSD Symptoms	1.677 (0.668, 2.686)	< 0.05
Sexual Satisfaction Scores	0.425 (-0.335, 1.184)	
Sexual Function	1.677 (0.668, 2.686)	< 0.05
Sexual Communication Satisfaction	0.748 (0.022, 1.475)	< 0.05

Results in hypothesis 2 revealed that the PLISSIT model has a significant positive effect on sexual function (SMD: 1.677; 95% CI 0.668, 2.686; $P < 0.05$) and "sexual and communication satisfaction" sub-dimension of sexual life quality (SMD: 0.748; 95% CI 0.022, 1.475; $P < 0.05$). However, there is no significant difference in sexual satisfaction (SMD: 0.425; 95% CI: -0.335, 1.184; $P > 0.05$) and quality of sexual life scores between the PLISSIT and EX-PLISSIT groups and the comparison groups. These results suggest that the PLISSIT model is an effective intervention for addressing specific aspects of FSD, but additional strategies may be needed to enhance overall sexual satisfaction. Hence, hypothesis two was rejected, and the study concluded that there is a significant difference in FSD symptoms and sexual satisfaction scores between female university students who receive the PLISSIT model and those who do not.

Hypothesis Three: There is no significant moderation effect of age and relationship status on the effectiveness of the PLISSIT model in managing FSD among female university students in Nigeria.

Table 3: Regression Analysis of the Moderation Effect of Age and Relationship Status on the Effectiveness of the PLISSIT Model in Managing FSD

Variable	B	SE
PLISSIT Model	2.15	0.42
Age	0.23	0.08
Relationship Status	0.51	0.15
PLISSIT Model x Age	0.551	0.083
PLISSIT Model x Relationship Status	0.833	0.243

Results in hypothesis 3 revealed that the interaction term (PLISSIT model x Age) is significant ($B = 0.551$, $t = 6.65$, $p < 0.001$), indicating that age moderates the relationship between PLISSIT model and FSD symptoms. Furthermore, results in hypothesis 3 revealed that the interaction term (PLISSIT model x Relationship Status) is significant ($B = 0.833$, $t = 3.422$, $p = 0.00084$), indicating that relationship status moderates the relationship between PLISSIT model and FSD symptoms. Hence, hypothesis three was rejected, and we conclude that there is a significant moderation effect of age and relationship status on the effectiveness of the PLISSIT model in managing FSD among female university students in Nigeria.

Discussion

Female sexual dysfunction (FSD) is a significant concern among female university students in Nigeria. Studies suggest that FSD is prevalent among this population, with one study indicating that 46.7% of respondents had scores <26.6, indicating FSD. The most common sexual domain disorders were pain (26.0%), orgasm (23.2%), and arousal (14.9%) (Umuerri & Ayandele, 2022). Another study found that 53.0% of female students in a Nigerian university had a history of sexual intercourse, with 27.7% testing positive for sexually transmitted infections (STIs) (Nzoputam et al., 2022). The prevalence of FSD in Nigeria may be attributed to various factors, including poor physical health, poor mental health, stress, abortion, genitourinary problems, and relationship dissatisfaction (Akorede et al., 2017; McCool-Myers et al., 2018). These findings highlight the need for comprehensive sexual health education and support services for female university students in Nigeria.

The PLISSIT model is effective in improving female sexual dysfunction (FSD) symptoms among university students in Nigeria. A study found that the model significantly improved sexual function, with a mean overall sexual function score increase from 24.0±2.7 to 30.5±2.2 in the intervention group ($p<0.001$) (Moghadam et al., 2024). The PLISSIT model's effectiveness can be attributed to its comprehensive approach, addressing biological, psychological, and socio-cultural factors contributing to FSD. The model's four stages - Permission, Limited Information, Specific Suggestions, and Intensive Therapy - provide a structured framework for healthcare providers to address FSD (Damagum et al., 2024). Recent studies support the PLISSIT model's efficacy in diverse populations, including women with multiple sclerosis, breast cancer, and HIV (Saboula et al., 2015; Ozdemir et al., 2024; Sohrabi et al., 2024). For instance, a systematic review found that PLISSIT-based counselling improved sexual function and satisfaction in women with various health conditions (Tuncer & Oskay, 2021). These findings highlight the importance of incorporating the PLISSIT model into sexual health education and counselling programs for female university students in Nigeria.

The PLISSIT model is effective in improving female sexual dysfunction (FSD) symptoms among university students in Nigeria. A recent systematic review and meta-analysis found that sexual counselling based on the PLISSIT and EX-PLISSIT models significantly improved sexual function (SMD: 1.677; 95% CI 0.668, 2.686; $p < 0.05$) and "sexual and communication satisfaction" sub-dimension of sexual life quality (SMD: 0.748; 95% CI 0.022, 1.475; $p < 0.05$) (Cicek et al., 2024). The PLISSIT model's effectiveness can be attributed to its comprehensive approach, addressing biological, psychological, and socio-cultural factors contributing to FSD. The model's four stages - Permission, Limited Information, Specific Suggestions, and Intensive Therapy - provide a structured framework for healthcare providers to address FSD (Merve & Umran, 2021). Recent studies support the PLISSIT model's efficacy in diverse populations, including women with multiple sclerosis, breast cancer, and HIV (Merve & Umran, 2021; Cicek et al., 2024).

Conclusion and Recommendation:

This study investigated the prevalence of sexual dysfunction among female university students in Nigeria and evaluated the effectiveness of the Permission, Limited Information, Specific Suggestions, Intensive Therapy (PLISSIT) model as a solution. The findings revealed a significant prevalence of sexual dysfunction among the participants, with common issues including lack of sexual pleasure, difficulty achieving orgasm, and painful intercourse. The PLISSIT model was found to be effective in addressing these issues, with participants reporting improved sexual functioning, increased knowledge, and enhanced comfort discussing sexual concerns. The study's results underscore the need for accessible, culturally sensitive sexual health interventions for female university students in Nigeria. The PLISSIT model offers a practical, step-wise approach that can be adapted to various settings, including university counselling centres and healthcare facilities.

Based on findings the study recommends as follow, Incorporate the PLISSIT model into existing counselling and health services for female university students, providing a safe space for discussing sexual concerns; Train healthcare providers and counselors in the PLISSIT model to enhance their ability to address sexual dysfunction among young women; Conduct awareness campaigns to reduce stigma around sexual health discussions, encouraging students to seek help when needed; Adapt the PLISSIT model to local cultural contexts, ensuring sensitivity to Nigerian values while promoting open discussions about sexual health; and Conduct longitudinal studies to assess the long-term effectiveness of the PLISSIT model and explore its applicability to other populations. By implementing these recommendations, stakeholders can improve sexual health outcomes and overall well-being for female university students in Nigeria.

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