

Perceptions, motivations and patterns of masturbation among tertiary students in southwest Nigeria: a cross-sectional study

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Abstract

Background

Masturbation is a common form of sexual expression, but it remains culturally sensitive and under-discussed in many Nigerian tertiary settings. Evidence is limited on how students interpret masturbation, what motivates it, and which contexts shape reported frequency. This study examined perceptions, motivations and patterns of masturbation among tertiary students in southwest Nigeria.

Methods

A cross-sectional questionnaire-based study was conducted among 410 students selected from five departments of a health technology institution in Sagamu, Ogun State, Nigeria. Data were collected using an adapted self-administered questionnaire and analysed in IBM SPSS version 25. Descriptive statistics, Pearson correlation and multiple linear regression were used to examine associations among perception, pattern, reason and frequency scores. Statistical significance was set at $p < 0.05$.

Results

Respondents had a mean age of 23.95 years (SD 5.15); 232 (56.6%) were female and 296 (72.2%) were single. Past-year masturbation was reported by 309 respondents (75.4%), although monthly engagement was more common than daily engagement. Perceptions were ambivalent: many respondents endorsed masturbation as normal, private and tension-relieving, while many also associated it with harm, addiction, guilt and moral wrongness. Perception score correlated positively with frequency score ($r = 0.497$, $p < 0.001$), whereas pattern and reason scores were strongly correlated with each other ($r = 0.682$, $p < 0.001$). In regression analysis, perception was the strongest positive predictor of frequency (beta = 0.450, $p < 0.001$), followed by reason score (beta = 0.264, $p < 0.001$). Pattern score was a negative predictor (beta = -0.257, $p < 0.001$). The model explained 28.8% of variance in frequency.

Conclusions

Masturbation among students in this health training institution was common, contextually shaped and morally ambivalent. Sexual health education in tertiary settings should create evidence-based, culturally aware and non-judgemental spaces that distinguish ordinary sexual self-exploration from distress, misinformation and compulsive patterns.

Background

Sexual health is increasingly understood as more than the absence of disease or reproductive risk. International public health frameworks emphasize wellbeing, rights, autonomy, respect, pleasure, safety

and access to accurate information as integral to sexual health [1–4]. This broader framing is important because public health programmes often remain more comfortable discussing sexually transmitted infections, pregnancy prevention and sexual violence than discussing sexual wellbeing, sexual self-knowledge or the social meanings attached to private sexual practices. Masturbation sits at this boundary. It is a common form of sexual expression and may be part of sexual development, self-knowledge and tension release, yet it is often absent from sexual health education and policy conversations.

Young people in tertiary institutions occupy a particularly important sexual health context. Students commonly experience increased autonomy, wider peer networks, academic pressure, changing living arrangements and greater access to digital media. In sub-Saharan Africa, adolescent and young adult sexual health remains shaped by gender norms, religion, family communication, school environments and access to confidential services [5–7]. Evidence-based sexuality education can improve sexual health knowledge and outcomes when it is comprehensive, age-appropriate and attentive to gender and power, although implementation remains uneven and politically sensitive [8–11]. In African contexts, communication about sexuality between parents, educators and young people is often constrained by silence, discomfort, fear of encouraging sexual activity and moral gatekeeping [12, 13]. Peer environments and social media may therefore become important informal sources of sexual knowledge, stimulus and norms [14, 15].

The evidence base on masturbation in Africa is still small compared with research on partnered sex, HIV, contraception and pregnancy. A recent Nigerian study among sexually active people in Ibadan reported high levels of self- and mutual masturbation and identified associations with gender, smartphone ownership, alcohol consumption, ethnicity and sexual partnering patterns [16]. A study among tertiary students in Ghana also found that masturbation practices were linked with psychological wellbeing and other sexual behaviours [17]. More general Nigerian and West African research on youth sexual behaviour shows that sexual practices and protective behaviours are patterned by gender, ethnicity, education, social context and institutional setting [18–20]. These studies are valuable, but they do not fully explain how students think about masturbation, what meanings they attach to it, or why the same behaviour may be viewed simultaneously as normal, private, sinful, harmful, pleasurable or shameful.

International studies show that masturbation varies by age, gender, relationship status, sexual attitudes, sexual fantasy, media exposure and broader sociocultural conditions [21–27]. Contemporary studies challenge the idea that masturbation is simply a substitute for partnered sex or a marker of sexual dissatisfaction. It may be pleasurable, exploratory, stress-relieving, compensatory, complementary to partnered sexual activity, or relatively autonomous from partnered sexual frequency [22, 28–34]. This means that frequency alone is an incomplete public health indicator. The same behaviour may carry different psychological and moral meanings across settings.

Perception is therefore central. A student may consider masturbation biologically normal while also fearing addiction, guilt or spiritual wrongdoing. Recent work on masturbation attitudes, cultural beliefs

about sexuality, pornography-related moral incongruence and compulsive sexual behaviour shows that sexual distress can arise not only from behaviour frequency, but also from moral conflict, misinformation, perceived loss of control and stigma [35–41]. Social cognitive theory also suggests that behaviour is shaped through reciprocal interactions among personal beliefs, social environments and behavioural experience [42]. In this study, perception, reasons, patterns and frequency were therefore treated as interacting psychosocial dimensions rather than isolated variables.

This study examined the psychosocial determinants of masturbation among tertiary students in Sagamu, Ogun State, Nigeria. Specifically, it assessed masturbation frequency across selected timeframes and contexts, described students' perceptions and reasons for masturbation, examined relationships among perception, pattern, reason and frequency scores, and identified predictors of masturbation frequency. The study contributes to sexual health scholarship by situating masturbation within the cultural, psychological and institutional realities of Nigerian tertiary students rather than treating it as either a purely private habit or a purely moral problem.

Methods

Study design and reporting

A cross-sectional questionnaire-based study design was used. The design was appropriate because the study sought to estimate the distribution of perceptions, reasons, patterns and frequency of masturbation at a single point in time and to examine associations among these variables. The manuscript was in line with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidance for cross-sectional studies [43].

Study setting

The study was conducted at South Western Nigeria College of Health Technology, Sagamu, Ogun State, Nigeria. The institution trains mid-level health personnel and includes several academic departments with students from varied social and religious backgrounds. The setting was suitable for the study because students in health-related training are exposed to formal health information while also living within broader cultural norms that may discourage open discussion of sexuality.

Study population and eligibility criteria

The study population comprised full-time students registered in selected departments of the institution during the data collection period. Students were eligible if they were enrolled in one of the selected departments, were available during data collection and gave informed consent. Students who declined participation or returned questionnaires that were incomplete, incorrectly completed or physically damaged were excluded from the final analysis.

Sample size determination

The minimum sample size was calculated using the Leslie Kish formula for single proportions [45]. Because no reliable prior estimate for the immediate study setting was available, the expected proportion was set at 50% to maximise sample size. With a standard normal deviate of 1.96, a 5% margin of error and $p = 0.50$, the minimum sample size was 384. A 10% allowance for non-response increased the target sample to 422 students.

Sampling procedure

A multistage sampling procedure was used to improve representativeness across departments. First, a sampling frame of academic departments was compiled. The departments included Community Health, Public Health, Medical Laboratory Technology, Physiotherapy, Orthopaedics, Pharmacy Technician, Radiography, Health Information Management and Dental Technology. Five departments, Community Health, Public Health, Medical Laboratory Technology, Physiotherapy and Orthopaedics, were selected by simple random sampling using balloting without replacement.

Second, the sample was allocated proportionately across the five selected departments using departmental population sizes. The combined population of the selected departments was 1615 students. The allocation formula was $n_i = (N_i / N_t) \times n$, where n_i is the number sampled from a department, N_i is the department population, N_t is the total population of selected departments and n is the total target sample size of 422 (as seen in Table 1). Third, students were selected within each department by simple random sampling from official departmental registers. Where a selected student was unavailable, a replacement was randomly drawn from the same departmental frame.

Table 1
Proportionate sample allocation by department

S/N	Selected department	Population (Ni)	Proportionate calculation (Ni / 1,615 x 422)	Sample (ni)
1	Community Health	800	$(800 / 1,615) \times 422$	209
2	Public Health	215	$(215 / 1,615) \times 422$	56
3	Medical Laboratory Technology	300	$(300 / 1,615) \times 422$	78
4	Physiotherapy	180	$(180 / 1,615) \times 422$	47
5	Orthopaedics	120	$(120 / 1,615) \times 422$	32
	Total	1,615		422

Instrument and measures

Data were collected with an adapted structured self-administered questionnaire. Items were drawn and modified from established sexual behaviour instruments and surveys, including the Derogatis Sexual Functioning Inventory and the National Survey of Sexual Health and Behavior [21, 44]. The adaptation focused on clarity, cultural sensitivity and reduced respondent burden. Sensitive items were worded in a non-judgemental manner to encourage truthful reporting, while context-specific items on academic stress, privacy and media exposure were included to reflect student life. With this, the questionnaire used in this study was developed specifically for this study by adapting relevant items from the Derogatis Sexual Functioning Inventory and the National Survey of Sexual Health and Behavior, together with additional context-specific items designed to reflect the experiences of Nigerian tertiary students (supplementary file 1).

The questionnaire contained sections on sociodemographic characteristics, frequency of masturbation, perceptions of masturbation, patterns and reasons for masturbation. Frequency items covered different recall periods and contexts, including the past year, past six months, past three months, past month, past two weeks, academic stress, holidays, being alone and media exposure. Responses were coded from never (0) to daily (4), producing a possible frequency score of 0–36. Perception was assessed using ten Likert-type items coded from strongly disagree (0) to strongly agree (4), with a possible score of 0–40. Pattern and reason scores were each derived from nine items coded from never (0) to always (4), with possible scores of 0–36. Higher scores indicated stronger endorsement of the relevant construct.

Recruitment and training of research assistants

Three research assistants with prior experience in questionnaire-based data collection were recruited. Training focused on ethical conduct in sensitive research, informed consent, privacy during questionnaire completion, neutral participant engagement, and procedures for checking returned questionnaires for completeness without breaching confidentiality.

Data management and statistical analysis

Completed questionnaires were checked manually, coded and entered into IBM SPSS version 25. Of the 422 questionnaires distributed, 410 were complete and usable, giving a valid response rate of 97.2%. Twelve questionnaires were excluded because they were incomplete, incorrectly completed or physically damaged. Composite perception, pattern, reason and frequency scores were calculated by summing the relevant items.

Descriptive statistics were used to summarise sociodemographic characteristics, item-level responses and composite scores. Means and standard deviations were reported for continuous variables, while frequencies and percentages were reported for categorical variables. Pearson product-moment correlation was used to examine associations among perception, pattern, reason and frequency scores.

Multiple linear regression using the enter method was conducted to identify predictors of frequency score. Perception, pattern and reason scores were entered simultaneously as independent variables. Effect estimates were reported as unstandardized coefficients, standard errors, standardized beta coefficients, t values and p values. Statistical significance was set at $p < 0.05$.

Bias reduction

Several procedures were used to reduce information and social desirability bias. Questionnaires were self-administered rather than interviewer-administered, no personal identifiers were collected, and respondents completed the questionnaire privately. Research assistants were trained to use neutral language and not to discuss item responses with participants. Nevertheless, because masturbation is culturally sensitive, under-reporting or selective reporting may still have occurred.

Ethical considerations

Ethical approval

was obtained from the Research Ethics Committee of South Western Nigeria College of Health Technology (Approval No: SWNCHT/S23/CH117). The study followed the principles of the Declaration of Helsinki. Participation was voluntary and informed consent was obtained before questionnaire administration. Respondents were informed that they could withdraw at any time without penalty. No personal identifiers were collected, and completed questionnaires were handled confidentially. Because the topic was sensitive, questionnaires were completed privately and respondents were not required to discuss their answers with research assistants.

Use of AI-assisted editorial tools

AI-based editorial assistant (OpenAI ChatGpt) was used to support language editing only.

Results

Sociodemographic characteristics

The analysis included 410 respondents (as seen in Table 2). The mean age was 23.95 years (SD 5.15). The largest age group was 20–24 years (153/410, 37.3%), followed by 16–19 years (93/410, 22.7%), while 25–29 years and 30–35 years each accounted for 82 respondents (20.0%). Females constituted 232 respondents (56.6%) and males 178 respondents (43.4%). Most respondents were single (296/410, 72.2%), Christian (231/410, 56.3%) and resident off-campus (252/410, 61.5%). Year 1 students formed the largest academic group (205/410, 50.0%), followed by Year 3 students (112/410, 27.3%).

Table 2
Sociodemographic characteristics of respondents

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	16–19	93	22.7
	20–24	153	37.3
	25–29	82	20.0
	30–35	82	20.0
	Mean +/- SD	23.95 +/- 5.15	
Gender	Male	178	43.4
	Female	232	56.6
Level of study	Year 1	205	50.0
	Year 2	93	22.7
	Year 3	112	27.3
Marital status	Single	296	72.2
	Married	50	12.2
	Cohabiting	64	15.6
Religion	Christianity	231	56.3
	Islam	162	39.5
	Traditional	1	0.2
	None/other	16	3.9
Residence	On-campus	158	38.5
	Off-campus	252	61.5
Note: SD, standard deviation.			

Frequency of masturbation

As seen in Table 3, past-year masturbation was reported by 309 respondents (75.4%), while 101 respondents (24.6%) reported no masturbation in the past year. Across recall periods, monthly engagement was the most common pattern: 166 respondents (40.5%) reported monthly masturbation in the past year, 167 (40.7%) in the past six months and 167 (40.7%) in the past three months. Daily engagement across recall periods was less common, ranging from 44 respondents (10.7%) in the past six months to 51 respondents (12.4%) in the past year.

Patterns of masturbation suggested that privacy and media exposure were especially relevant. When alone, 165 respondents (40.2%) reported monthly masturbation and 88 (21.5%) reported masturbation several times per week. After media exposure, respondents reported the highest daily frequency (65/410, 15.9%) and a high level of several-times-per-week engagement (92/410, 22.4%). Academic stress showed a comparatively weaker high-frequency pattern, with 74 respondents (18.0%) reporting several-times-per-week masturbation and 51 (12.4%) reporting daily masturbation.

Table 3
Masturbation frequency by timeframe and context

Item	Never n (%)	Monthly n (%)	Weekly n (%)	Several times/week n (%)	Daily n (%)
Frequency in the past year	101 (24.6)	166 (40.5)	11 (2.7)	81 (19.8)	51 (12.4)
Frequency in the past 6 months	110 (26.8)	167 (40.7)	10 (2.4)	79 (19.3)	44 (10.7)
Frequency in past 3 months	101 (24.6)	167 (40.7)	13 (3.2)	82 (20.0)	47 (11.5)
Frequency in past 1 month	123 (30.0)	134 (32.7)	15 (3.7)	90 (22.0)	48 (11.7)
Frequency in past 2 weeks	119 (29.0)	138 (33.7)	11 (2.7)	96 (23.4)	46 (11.2)
Frequency during academic stress	125 (30.5)	149 (36.3)	11 (2.7)	74 (18.0)	51 (12.4)
Frequency during holidays	113 (27.6)	151 (36.8)	14 (3.4)	80 (19.5)	52 (12.7)
Frequency when alone	98 (23.9)	165 (40.2)	11 (2.7)	88 (21.5)	48 (11.7)
Frequency after media exposure	94 (22.9)	150 (36.6)	9 (2.2)	92 (22.4)	65 (15.9)

Perceptions of masturbation

Respondents' perceptions were mixed rather than uniformly permissive or restrictive (Table 4). Many respondents strongly agreed that masturbation is a normal part of sexual development (188/410, 45.9%), acceptable in private (187/410, 45.6%), helps relieve sexual tension (174/410, 42.4%) and is influenced by hormones (181/410, 44.1%). At the same time, negative beliefs were also common: 196 respondents (47.8%) strongly agreed that masturbation is harmful to mental health, 185 (45.1%) strongly agreed that it leads to addiction, 162 (39.5%) strongly agreed that it is associated with guilt and 155 (37.8%) strongly agreed that it is wrong or bad.

Table 4
Perceptions of masturbation

Item	Strongly disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly agree n (%)
Masturbation is a normal part of sexual development	15 (3.7)	59 (14.4)	57 (13.9)	91 (22.2)	188 (45.9)
Masturbation is harmful to mental health	17 (4.1)	47 (11.5)	63 (15.4)	87 (21.2)	196 (47.8)
Masturbation helps relieve sexual tension	8 (2.0)	45 (11.0)	60 (14.6)	123 (30.0)	174 (42.4)
Masturbation is acceptable in private	13 (3.2)	41 (10.0)	65 (15.9)	104 (25.4)	187 (45.6)
Masturbation is influenced by hormones	7 (1.7)	41 (10.0)	66 (16.1)	115 (28.0)	181 (44.1)
Masturbation leads to addiction	6 (1.5)	53 (12.9)	63 (15.4)	103 (25.1)	185 (45.1)
Masturbation should be openly discussed	13 (3.2)	48 (11.7)	71 (17.3)	90 (22.0)	188 (45.9)
Masturbation is wrong/bad	17 (4.1)	54 (13.2)	77 (18.8)	107 (26.1)	155 (37.8)
Masturbation can be part of a healthy sexual life	20 (4.9)	73 (17.8)	65 (15.9)	76 (18.5)	176 (42.9)
Masturbation is associated with guilt	14 (3.4)	51 (12.4)	78 (19.0)	105 (25.6)	162 (39.5)

Reasons for masturbation

Most reasons for masturbation were reported as rare or absent (as seen in Table 5), suggesting that respondents did not strongly endorse explicit motivations even when frequency was moderate. The most common response category was "rarely" for pleasure or sexual arousal (280/410, 68.3%), relieving sexual tension (250/410, 61.0%), relaxation or leisure (233/410, 56.8%), stress or anxiety (232/410, 56.6%) and boredom (226/410, 55.1%). Peer influence was the least endorsed reason, with 219 respondents (53.4%) reporting "never".

Table 5
Reasons for masturbation

Reason	Never n (%)	Rarely n (%)	Sometimes n (%)	Often n (%)	Always n (%)
To relieve sexual tension	82 (20.0)	250 (61.0)	43 (10.5)	12 (2.9)	23 (5.6)
For relaxation/leisure	118 (28.8)	233 (56.8)	36 (8.8)	15 (3.7)	8 (2.0)
When feeling stressed or anxious	137 (33.4)	232 (56.6)	24 (5.9)	9 (2.2)	8 (2.0)
Out of boredom	124 (30.2)	226 (55.1)	36 (8.8)	11 (2.7)	13 (3.2)
To help with sleep	154 (37.6)	208 (50.7)	34 (8.3)	7 (1.7)	7 (1.7)
For pleasure/sexual arousal	58 (14.1)	280 (68.3)	30 (7.3)	18 (4.4)	24 (5.9)
Curiosity or experimentation	164 (40.0)	192 (46.8)	29 (7.1)	14 (3.4)	11 (2.7)
Peer influence or discussion	219 (53.4)	141 (34.4)	28 (6.8)	14 (3.4)	8 (2.0)
To cope with loneliness	148 (36.1)	207 (50.5)	29 (7.1)	10 (2.4)	16 (3.9)

Descriptive statistics of key constructs

As seen in Table 6, the perception score had the highest mean relative to its scale range (mean 29.30, SD 6.18), indicating generally strong endorsement of perception items, although item-level findings showed that these perceptions combined positive and negative beliefs. Pattern (mean 9.15, SD 6.02) and reason (mean 8.17, SD 6.13) scores were lower, suggesting weaker endorsement of structured triggers and explicit motivations. The mean frequency score was 13.88 (SD 6.92), indicating moderate engagement across the measured timeframes and contexts.

Table 6
Descriptive statistics for study constructs

Variable	N	Minimum	Maximum	Mean +/- SD
Perception score	410	1.00	40.00	29.30 +/- 6.18
Pattern score	410	0.00	33.00	9.15 +/- 6.02
Reason score	410	0.00	35.00	8.17 +/- 6.13
Frequency score	410	0.00	35.00	13.88 +/- 6.92
Note: SD, standard deviation.				

Correlation analysis

As seen in Table 7, perception score was positively correlated with frequency score ($r = 0.497$, $p < 0.001$), indicating that stronger endorsement of perception items was associated with higher reported frequency. Perception score was negatively correlated with pattern score ($r = -0.452$, $p < 0.001$) and reason score ($r = -0.261$, $p < 0.001$). Pattern and reason scores were strongly and positively correlated ($r = 0.682$, $p < 0.001$), suggesting that patterns of masturbations and motivations overlapped. Frequency score was negatively correlated with pattern score ($r = -0.280$, $p < 0.001$) but was not significantly correlated with reason score ($r = -0.028$, $p = 0.569$).

Table 7
Correlations among study constructs

Variable	Perception score	Pattern score	Reason score	Frequency score
Perception score	1	-0.452** ($p < 0.001$)	-0.261** ($p < 0.001$)	0.497** ($p < 0.001$)
Pattern score	-0.452** ($p < 0.001$)	1	0.682** ($p < 0.001$)	-0.280** ($p < 0.001$)
Reason score	-0.261** ($p < 0.001$)	0.682** ($p < 0.001$)	1	-0.028 ($p = 0.569$)
Frequency score	0.497** ($p < 0.001$)	-0.280** ($p < 0.001$)	-0.028 ($p = 0.569$)	1
Note: ** Correlation is significant at the 0.01 level (two-tailed).				

Regression analysis

Multiple linear regression (Table 8) showed that perception, pattern and reason scores jointly predicted masturbation frequency, $F(3, 406) = 54.788$, $p < 0.001$. The model explained 28.8% of the variance in frequency score ($R = 0.537$; $R^2 = 0.288$; adjusted $R^2 = 0.283$). Perception score was the strongest positive predictor ($B = 0.504$, $\beta = 0.450$, $p < 0.001$), followed by reason score ($B = 0.298$, $\beta = 0.264$, $p < 0.001$). Pattern score was a significant negative predictor ($B = -0.295$, $\beta = -0.257$, $p < 0.001$).

Table 8
Regression predictors of masturbation frequency

Predictor	B	Standard error	Beta	t	p-value
Constant	-0.631	1.841		-0.343	0.732
Pattern score	-0.295	0.071	-0.257	-4.132	< 0.001
Perception score	0.504	0.053	0.450	9.565	< 0.001
Reason score	0.298	0.065	0.264	4.601	< 0.001
Note: B, unstandardized regression coefficient; beta, standardized regression coefficient.					

Discussion

Principal findings

This study found that masturbation was commonly reported among students in a Nigerian health technology institution, with 75.4% reporting masturbation in the past year. However, monthly engagement was more common than daily engagement, suggesting that high prevalence did not necessarily indicate high-frequency behaviour. Privacy and media exposure appeared more salient contexts than academic stress. Perceptions were markedly ambivalent: students often described masturbation as normal, private and tension-relieving while also endorsing beliefs that it is harmful, addictive, guilt-producing or morally wrong. Perception was the strongest predictor of frequency, whereas pattern of masturbation score was a negative predictor after controlling for perception and reasons.

Interpretation in relation to previous research

The prevalence of past-year masturbation in this study is consistent with the growing evidence that masturbation is not marginal in young adult sexual life. Studies from the United States, Europe, Australia and Asia have shown that masturbation is common, varies across gender and relationship contexts, and cannot be understood solely as a substitute for partnered sex [21–24, 28–33]. The Nigerian and Ghanaian studies provide closer regional comparison and show that masturbation is also reported in West African populations despite cultural sensitivity and possible under-reporting [16, 17]. The present study adds a more detailed institutional perspective by examining perceptions, reasons and contexts among students in a health training environment.

The finding that media exposure and being alone were important contexts is plausible in light of the wider literature on digital sexual media and youth sexual socialization [14, 39]. However, the data is not interpreted as showing that media exposure simply causes masturbation. Media may provide stimulus, but privacy, personal beliefs, peer norms and moral acceptability shape whether students act on arousal and whether they disclose the behaviour. This layered interpretation is important for public health

messaging because it avoids both moral panic about digital media and uncritical normalization of all sexual media use.

The coexistence of permissive and punitive beliefs is one of the most important findings. Many students endorsed masturbation as biologically normal and acceptable in private while also strongly endorsing harm, addiction, guilt and moral wrongness. Similar tensions appear in research on negative masturbation attitudes, cultural sexuality beliefs and perceived addiction to sexual media, where distress may arise from moral incongruence as well as from behaviour itself [35–38]. The present findings suggest that Nigerian students may be negotiating competing truth systems: biomedical or developmental explanations on one hand, and religious, moral or culturally restrictive interpretations on the other. Sexual health education that treats students as simply uninformed may therefore miss the deeper issue. Students may have information but still lack a safe framework for reconciling knowledge, values, autonomy, guilt and distress.

The low endorsement of explicit reasons despite moderate reported frequency also deserves attention. Pleasure, arousal, relaxation and stress relief are common motives in other studies, but motives are not always easy to disclose, especially where pleasure itself may be morally sensitive [21, 22, 31–34]. In the present study, respondents may have been more willing to report frequency than to name pleasure, loneliness or curiosity as reasons. The weak endorsement of peer influence may reflect genuine privacy, but it may also reflect the social risk of admitting sexual discussion with peers. Thus, low reason scores is not interpreted as absence of motivation; they may indicate a gap between lived motivation and speakable motivation.

The correlation and regression findings point to a more complex pathway than a simple sequence from reasons to patterns to frequency. Perception score was positively associated with frequency and remained the strongest predictor in the regression model. This supports a social cognitive interpretation in which beliefs and perceived acceptability help shape behaviour [42]. In contrast, pattern score was negatively associated with frequency after adjustment. One interpretation is that highly contextualized masturbation may be situational and bounded: students who masturbate only under specific conditions may do so less often than students for whom masturbation is internally acceptable and less dependent on specific triggers. This distinction matters because frequency alone is not equated with harm or compulsivity. Contemporary clinical framing of compulsive sexual behaviour emphasizes impaired control, persistence despite adverse consequences, distress and functional impairment, not frequency alone [40].

Public health implications

The findings have several implications for tertiary institutions and sexual health programmes. First, masturbation should not be ignored simply because it is culturally sensitive. Silence may leave students reliant on peers, social media, pornography, myths or moral fear as their main sources of information. Second, sexual health education should avoid both promotion and condemnation. A balanced approach

would distinguish ordinary masturbation, guilt-laden masturbation, misinformation about physical or mental harm, distressing or compulsive patterns, and contexts involving unwanted exposure or coercion. Third, health training institutions may be especially important settings for non-judgemental sexual health communication because students are future health workers and may later counsel others. Fourth, interventions should recognize that digital media, privacy and moral climate interact. Addressing only media exposure without addressing misinformation, shame and confidential access to guidance is unlikely to be sufficient.

Strengths and limitations

This study addresses an under-researched sexual health topic in a Nigerian tertiary setting, used a multistage sampling procedure across departments, achieved a high valid response rate and analysed perception, context, reasons and frequency as related constructs rather than treating masturbation only as a prevalence outcome. It also contributes regional evidence on a topic that is often under-represented in African public health research. However, the cross-sectional design prevents causal inference; perception may influence frequency, but behavioural experience may also reshape perception. Data were self-reported and the topic was sensitive, so social desirability bias may have led to under-reporting of masturbation or under-reporting of motives such as pleasure. The study was conducted in one health technology institution, limiting generalisability to non-health students and other regions.

Conclusions

Masturbation among tertiary students in this Nigerian health training institution was common, contextually shaped and morally ambivalent. Perception was the most important predictor of frequency, suggesting that how students interpret masturbation may matter more than the explicit reasons they provide for it. The coexistence of permissive and punitive beliefs indicates a need for evidence-based, culturally aware and non-judgemental sexual health education in tertiary settings. Such education should not frame masturbation as inherently harmful or universally beneficial. Instead, it should help students distinguish ordinary sexual self-exploration from misinformation, guilt, distress, loss of control and coercive or harmful contexts. Future research should include multiple institutions, validate measures for Nigerian settings, examine gender and religious differences, and use qualitative or mixed-methods designs to understand how students narrate masturbation in their own words.

Abbreviations

B
unstandardized regression coefficient
BMC
BioMed Central
ORCID
Open Researcher and Contributor ID
SD

standard deviation

SPSS

Statistical Package for the Social Sciences

STROBE

Strengthening the Reporting of Observational Studies in Epidemiology.

Declarations

Ethics approval and consent to participate

Ethical approval was obtained from the Research Ethics Committee of South Western Nigeria College of Health Technology (Approval No: SWNCHT/S23/CH117). All respondents provided informed consent before participation.

Consent for publication

Not applicable. The manuscript does not contain any individual person's data, images or videos.

Competing interests

The authors declare that they have no competing interests.

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Author Contribution

JSO conceived the study; JSO, AOA, JBE, AAO, TMA and TMO contributed to study design; JSO and JBE coordinated data collection; JSO analysed the data; JSO drafted the manuscript; AOA, AAO, TMA and TMO critically revised the manuscript for intellectual content. All authors read and approved the final manuscript.

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Data Availability

The datasets generated and analysed during the current study are not publicly available because of the sensitive nature of the data and participant confidentiality requirements, but are available from the corresponding author on reasonable request and subject to institutional ethics requirements.

References

1. World Health Organization. Sexual health and its linkages to reproductive health: an operational approach. Geneva: World Health Organization. 2017.
<https://www.who.int/publications/i/item/978924151288>. Accessed 8 Jul 2026.
2. Mitchell KR, Lewis R, O'Sullivan LF, Fortenberry JD. What is sexual wellbeing and why does it matter for public health? *Lancet Public Health*. 2021;6(8):e608–13. 10.1016/S2468-2667(21)00099-2.
3. Ford JV, Corona Vargas E, Finotelli I Jr, Fortenberry JD, Kismodi E, Philpott A, et al. Why pleasure matters: its global relevance for sexual health, sexual rights and wellbeing. *Int J Sex Health*. 2019;31(3):217–30. 10.1080/19317611.2019.1654587.
4. Starrs AM, Ezech AC, Barker G, Basu A, Bertrand JT, Blum R, et al. Accelerate progress—sexual and reproductive health and rights for all: report of the Guttmacher-Lancet Commission. *Lancet*. 2018;391(10140):2642–92. 10.1016/S0140-6736(18)30293-9.
5. Bearinger LH, Sieving RE, Ferguson J, Sharma V. Global perspectives on the sexual and reproductive health of adolescents: patterns, prevention, and potential. *Lancet*. 2007;369(9568):1220–31. 10.1016/S0140-6736(07)60367-5.
6. Melesse DY, Mutua MK, Choudhury A, Wado YD, Faye CM, Neal S, et al. Adolescent sexual and reproductive health in sub-Saharan Africa: who is left behind? *BMJ Glob Health*. 2020;5(1):e002231. 10.1136/bmjgh-2019-002231.
7. World Health Organization. WHO guideline on self-care interventions for health and well-being, 2022 revision. Geneva: World Health Organization. 2022.
<https://www.who.int/publications/i/item/9789240052192>. Accessed 8 Jul 2026.
8. UNESCO. International technical guidance on sexuality education: an evidence-informed approach. Revised edition. Paris: UNESCO. 2018. <https://unesdoc.unesco.org/ark:/48223/pf0000260770>. Accessed 8 Jul 2026.
9. Goldfarb ES, Lieberman LD. Three decades of research: the case for comprehensive sex education. *J Adolesc Health*. 2021;68(1):13–27. 10.1016/j.jadohealth.2020.07.036.
10. Haberland N. The case for addressing gender and power in sexuality and HIV education: a comprehensive review of evaluation studies. *Int Perspect Sex Reprod Health*. 2015;41(1):31–42. 10.1363/4103115.
11. Mason-Jones AJ, Sinclair D, Mathews C, Kagee A, Hillman A, Lombard C. School-based interventions for preventing HIV, sexually transmitted infections, and pregnancy in adolescents. *Cochrane Database Syst Rev*. 2016;2016(11):CD006417. 10.1002/14651858.CD006417.pub3.

12. Agbeve AS, Fiaveh DY, Anto-Ocrah M. Parent-adolescent sexuality communication in the African context: a scoping review of the literature. *Sex Med Rev.* 2022;10(4):554–66. 10.1016/j.sxmr.2022.04.001.
13. Bastien S, Kajula LJ, Muhwezi WW. A review of studies of parent-child communication about sexuality and HIV/AIDS in sub-Saharan Africa. *Reprod Health.* 2011;8:25. 10.1186/1742-4755-8-25.
14. Hunter J, van Blerk L, Shand W. The influence of peer relationships on young people's sexual health in sub-Saharan African street contexts. *Soc Sci Med.* 2021;288:113285. 10.1016/j.socscimed.2020.113285.
15. Gyane CO, Gmayinaan VU, Osei E. Association between social media use and adolescents' sexual behaviours: a cross-sectional study among high school students in Drobo, Ghana. *BMC Public Health.* 2025;25:537. 10.1186/s12889-025-21585-y.
16. Bello Y, Oke D, Ilori T, Adebayo SA, Olubodun T, Adewole I, et al. Unveiling masturbatory sexual behaviours in Nigeria: insights into the prevalence and factors associated with self- and mutual masturbation among the sexually active population. *BMC Public Health.* 2025;25:3326. 10.1186/s12889-025-24701-0.
17. Abu Bonsra E, Ananga MK, Aboagye P, Twumasi E, Abem MA. Sexual behaviour and masturbation practices: impacts on psychological well-being among tertiary students in Ghana. *Reprod Health.* 2025;23:2. 10.1186/s12978-025-02226-4.
18. Odimegwu C, Somefun OD. Ethnicity, gender and risky sexual behaviour among Nigerian youth: an alternative explanation. *Reprod Health.* 2017;14:16. 10.1186/s12978-017-0284-7.
19. Somefun OD, Fayehun F. Ethnic affiliation and protective sexual behaviours among youth in Nigeria. *J Biosoc Sci.* 2024;56(4):767–83. 10.1017/S0021932024000257.
20. Okonkwo B, Aduloju RA, Ogbolu CN, Iyawa J, Agofure O, Okololise LO. Risky sexual behaviours: predictors and perceived effect on the health of undergraduate students in a tertiary institution in Delta State, Nigeria. *J Interv Epidemiol Public Health.* 2025;8:51. 10.37432/jieph-d-24-02026.
21. Herbenick D, Reece M, Schick V, Sanders SA, Dodge B, Fortenberry JD. Sexual behavior in the United States: results from a national probability sample of men and women ages 14–94. *J Sex Med.* 2010;7(Suppl 5):255–65. 10.1111/j.1743-6109.2010.02012.x.
22. Herbenick D, Fu TC, Wasata R, Coleman E. Masturbation prevalence, frequency, reasons, and associations with partnered sex in the midst of the COVID-19 pandemic: findings from a U.S. nationally representative survey. *Arch Sex Behav.* 2023;52(3):1317–31. 10.1007/s10508-022-02505-2.
23. Das A. Masturbation in the United States. *J Sex Marital Ther.* 2007;33(4):301–17. 10.1080/00926230701385514.
24. Gerressu M, Mercer CH, Graham CA, Wellings K, Johnson AM. Prevalence of masturbation and associated factors in a British national probability survey. *Arch Sex Behav.* 2008;37(2):266–78. 10.1007/s10508-006-9123-6.

25. Richters J, de Visser RO, Badcock PB, Smith AMA, Rissel C, Simpson JM, et al. Masturbation, paying for sex, and other sexual activities: the Second Australian Study of Health and Relationships. *Sex Health*. 2014;11(5):461–71. 10.1071/SH14116.
26. Kaestle CE, Allen KR. The role of masturbation in healthy sexual development: perceptions of young adults. *Arch Sex Behav*. 2011;40(5):983–94. 10.1007/s10508-010-9722-0.
27. Pinkerton SD, Bogart LM, Cecil H, Abramson PR. Factors associated with masturbation in a collegiate sample. *J Psychol Hum Sex*. 2003;14(2–3):103–21. 10.1300/J056v14n02_07.
28. Robinson BBE, Bockting WO, Harrell T. Masturbation and sexual health: an exploratory study of low income African American women. *J Psychol Hum Sex*. 2003;14(2–3):85–102. 10.1300/J056v14n02_06.
29. Fischer N, Traeen B. A seemingly paradoxical relationship between masturbation frequency and sexual satisfaction. *Arch Sex Behav*. 2022;51(6):3151–67. 10.1007/s10508-022-02305-8.
30. Huang S, Niu C, Santtila P. Masturbation frequency and sexual function in individuals with and without sexual partners. *Sexes*. 2022;3(2):229–43. 10.3390/sexes3020018.
31. Ivanova A, Fluit S, Fischer N, von Soest T, Kozak M. Masturbation trajectories from late adolescence into mid-adulthood: a population-based longitudinal study. *J Sex Res*. 2026;63(4):510–24. 10.1080/00224499.2025.2489091.
32. Leistner CE, Briggs L, Lippmann M, Lawlor N. Reasons for and for not engaging in masturbation among college students in the United States. *Sex Cult*. 2024;28(3):929–49. 10.1007/s12119-023-10156-1.
33. Phuah LA, Teng JHJ, Goh PH. Masturbation among Malaysian young adults: associated sexual and psychological well-being outcomes. *Sex Cult*. 2024;28(1):113–33. 10.1007/s12119-023-10101-2.
34. Wehrli FSV, Bodenmann GJ, Clemen J, Weitkamp K. Exploring the role of masturbation as a coping strategy in women. *Int J Sex Health*. 2024;36(3):237–56. 10.1080/19317611.2024.2344812.
35. Karageorgou C, Agorastos A. Negative attitudes toward masturbation inventory and excessive masturbation scale: parallel investigation of their psychometric properties in a Greek adult population sample. *Curr Psychol*. 2025;44(12):12350–67. 10.1007/s12144-025-08020-6.
36. Liu D, Liu Y, Ren Z. Study on HIV knowledge and cultural attitudes about sexuality among Chinese college students. *BMC Public Health*. 2025;25:777. 10.1186/s12889-025-21809-1.
37. Grubbs JB, Exline JJ, Pargament KI, Hook JN, Carlisle RD. Transgression as addiction: religiosity and moral disapproval as predictors of perceived addiction to pornography. *Arch Sex Behav*. 2015;44(1):125–36. 10.1007/s10508-013-0257-z.
38. Grubbs JB, Perry SL, Wilt JA, Reid RC. Pornography problems due to moral incongruence: an integrative model with a systematic review and meta-analysis. *Arch Sex Behav*. 2019;48(2):397–415. 10.1007/s10508-018-1248-x.
39. Bothe B, Toth-Kiraly I, Zsila A, Griffiths MD, Demetrovics Z, Orosz G. The development of the Problematic Pornography Consumption Scale (PPCS). *J Sex Res*. 2018;55(3):395–406. 10.1080/00224499.2017.1291798.

40. Peter J, Valkenburg PM. Adolescents and pornography: a review of 20 years of research. *J Sex Res.* 2016;53(4–5):509–31. 10.1080/00224499.2016.1143441.
41. Kraus SW, Krueger RB, Briken P, First MB, Stein DJ, Kaplan MS, et al. Compulsive sexual behaviour disorder in the ICD-11. *World Psychiatry.* 2018;17(1):109–10. 10.1002/wps.20499.
42. Bandura A. Social cognitive theory: an agentic perspective. *Annu Rev Psychol.* 2001;52:1–26. 10.1146/annurev.psych.52.1.1.
43. von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP. The Strengthening of Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *PLoS Med.* 2007;4(10):e296. 10.1371/journal.pmed.0040296.
44. Derogatis LR, Melisaratos N. The DSFI: a multidimensional measure of sexual functioning. *J Sex Marital Ther.* 1979;5(3):244–81. 10.1080/00926237908403732.
45. Kish L. Survey sampling. New York: Wiley; 1965.

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