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The Effect of Ejaculatory Abstinence Period on Semen Quality among Nigerian Men: A Cross-Sectional Study

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ABSTRACT **Published Online: July 22, 2026**

Background: One significant pre-analytical factor affecting semen quality and semen analysis interpretation is the length of ejaculatory abstinence. The World Health Organization advises abstinence for two to seven days before semen collection; however, the ideal length of time is still debatable, especially for men whose semen quality is compromised. This study examined the relationship between the length of ejaculatory abstinence and the quality of semen in Nigerian men who were oligozoospermic and normozoospermic and undergoing fertility testing.

Methods: A retrospective cross-sectional study was conducted using laboratory semen analysis records of 268 male partners of infertile couples who underwent fertility evaluation between January 2023 and December 2025. Participants were categorized into normozoospermic ($\geq 15 \times 10^6$ sperm/mL) and oligozoospermic ($<15 \times 10^6$ sperm/mL) groups according to WHO 2010 criteria. The period of ejaculatory abstinence was divided into three categories: 2–3 days, 4–7 days, and >7 days. Standardized WHO laboratory protocols were used to analyse semen samples. Semen characteristics were examined between abstinence groups, including volume, sperm count, concentration, motility, morphology, and proportion of dead spermatozoa. To find correlations between age, semen characteristics, and the length of abstinence, correlation analyses were conducted. Statistical significance was set at $P < 0.05$.

Results: Of the 268 participants, 126 (47.0%) were normozoospermic, and 142 (53.0%) were oligozoospermic. The majority of participants (66.8%) stated that they had abstained for four to seven days. Sperm count, sperm concentration, percentage of dead spermatozoa, motility, and morphology all showed significant differences between the two groups ($P < 0.05$). Abstinence time had a significant impact on sperm count and concentration in oligozoospermic men, while it had a significant impact on sperm count, concentration, semen volume, motility, and morphology in normozoospermic men. In oligozoospermic men, abstinence duration was significantly correlated negatively with both rapid progressive and non-progressive motility, whereas in normozoospermic men, it was positively correlated with semen volume.

Conclusion: Although its effects vary depending on baseline semen quality, ejaculatory abstinence length has a considerable impact on conventional semen characteristics. Long-term abstinence seems to negatively impact sperm motility, especially in oligozoospermic males, even if it may increase semen volume and sperm concentration. These results support tailored recommendations on the length of abstinence during assisted reproductive treatment and fertility assessment.

KEYWORDS: Ejaculatory abstinence, Semen quality, Male infertility, Sperm motility, Oligozoospermia, Normozoospermia, Nigeria, Semen analysis

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1. INTRODUCTION

About 17.5% of adults (about 1 in 6 persons) of reproductive age worldwide suffer from infertility, making it a significant public health concern. [1] Nearly half of all cases of infertility are caused by male factors, either alone or in combination with female causes. This emphasizes the vital need for a comprehensive assessment of male fertility to effectively diagnose and treat infertility. [2,3] Semen analysis is still the

predominant method for evaluating male infertility because it gives objective, measurable data on sperm production, maturation, and overall functional capacity.[4] This evaluation usually includes conventional semen parameters such as semen volume, sperm concentration, total sperm count, sperm motility (ability to move), morphology (shape and structure), and vitality (% of live sperm). These parameters are commonly used to determine a man's reproductive potential and inform healthcare decisions. Despite acknowledged limits in accurately predicting fertility outcomes, these semen analysis parameters remain vital in ordinary clinical practice and in assisted reproductive technology (ART), where they help personalize treatment regimens. [5]

Several physiological, environmental, and lifestyle factors all have an impact on semen quality.[6,7] Age, endocrine abnormalities, obesity, cigarette smoking, alcohol intake, reproductive tract infections, exposure to environmental toxins, medication use, nutritional status, and oxidative stress are among the risk factors.[8] Among these, the time of ejaculatory abstinence before semen collection is particularly essential and modifiable. This is because it has a direct impact on semen quality and may be easily modified without requiring extra medical intervention, making it an important factor in maximizing semen quality.

To reduce variability and improve standardization, the World Health Organization (WHO) advises a 2–7-day ejaculatory abstinence period before semen collection for diagnostic semen analysis.[2] However, the appropriate duration of abstinence is still debated. While longer periods of abstinence often result in increased semen volume, sperm concentration, and total sperm count due to sperm accumulation in the epididymis, research has indicated that prolonged storage within the male reproductive canal might have a deleterious impact on sperm function. This involves decreased motility, enhanced oxidative stress, and increased sperm DNA fragmentation.[9-11] As a result, having a higher sperm count does not necessarily imply improved fertilization potential.[12,13]

Reactive oxygen species (ROS) are rapidly being recognized as major factors in sperm failure. Under normal physiological conditions, modest ROS levels are required for critical sperm activities such as capacitation, hyperactivation, and the acrosomal reaction.[14] However, excessive ROS production overwhelms the limited antioxidant defenses of spermatozoa, leading to adverse effects such as lipid peroxidation of plasma membranes, mitochondrial malfunction, DNA breakage, apoptosis, and a loss in fertilizing ability.[14,16] Spermatozoa are particularly vulnerable to oxidative damage during prolonged storage in the epididymis, which is frequently linked with lengthier ejaculatory abstinence periods, due to their high quantities of polyunsaturated fatty acids and inadequate cytoplasmic antioxidant protection.[16]

Recent meta-analyses and systematic reviews found contradictory data on the association between abstinence duration and sperm quality.[9] Longer abstinence is consistently related to increased sperm volume and concentration, but its impact on other critical characteristics, including progressive motility, morphology, vitality, sperm DNA fragmentation, and reproductive outcomes, varies between populations.[10,11] Evidence also shows that men with normal semen parameters and those with poor spermatogenesis react differently to abstinence length, implying that a one-size-fits-all advice may not be appropriate for all patients.[12,13]

These uncertainties have important clinical implications, particularly for assisted reproductive technologies such as intrauterine insemination (IUI), in vitro fertilization (IVF), and intracytoplasmic sperm injection (ICSI).[18] In these procedures, the functional quality of sperm is typically more important than its quantity. As a result, some studies have proposed that shorter ejaculatory abstinence times may improve sperm motility, reduce oxidative stress, reduce DNA fragmentation, and possibly improve fertilization, embryo development, and pregnancy success.[11,19,20] However, the existing evidence is ambiguous, and further research with varied populations is required before individualized abstinence guidelines can be consistently implemented in clinical practice.

Despite growing international interest in this subject, there is still limited evidence from sub-Saharan Africa, especially Nigeria. Most research has been conducted in Europe, Asia, and North America, where genetic, environmental, nutritional, and lifestyle factors differ significantly from those in African populations.[21,22] Considering the high prevalence of infertility in Nigeria and the increasing demand for assisted reproductive services, it is crucial to generate local evidence to guide evidence-based clinical practice and optimize semen collection protocols tailored to the specific needs of the population.[23]

This study aimed to explore the relationship between ejaculatory abstinence duration and conventional semen parameters in both normozoospermic and oligozoospermic Nigerian men attending a tertiary fertility centre. Additionally, the study examined how abstinence duration and age relate to semen quality to determine whether personalized abstinence recommendations could improve the clinical interpretation of semen analysis and contribute to more effective management of male fertility.

2. MATERIALS AND METHODS

2.1 Study Design and Setting

This was a retrospective analytical cross-sectional study that reviewed the laboratory semen analysis data of 268 male partners of infertile couples who visited a fertility clinic between January 2023 and December 2025. Laboratory records were obtained from the study centre and its linked ISO-certified diagnostic lab. After excluding incomplete records, the overall data retrieval rate was 80%.

2.2 Study Population

The study population included male partners of infertile couples who had routine sperm analysis during the study period. To eliminate duplication, the study only included each participant's first semen analysis data. Cases of infertility caused by male or female factors, a combination of both male and female factors, or unexplained infertility were eligible for inclusion.

- **Normozoospermic group:** sperm concentration ≥15 × 10^6 spermatozoa/mL.
- **Oligozoospermic group:** sperm concentration <15 × 10^6 spermatozoa/mL.

The mean age of participants was 40.02 ± 8.12 years, with most participants aged between 30 and 49 years**.**

2.3 Eligibility Criteria

The study comprised male partners of infertile couples who provided complete demographic information and semen analysis data throughout the study period. The analysis removed records with incomplete demographic data, missing age, undocumented ejaculatory abstinence duration, or incomplete semen characteristics relevant to the study aims.

2.4 Semen Collection and Analysis

Semen samples were collected by masturbation following an ejaculatory abstinence period of 2–7 days. Coitus interruptus collection was allowed for those who were unable to produce a specimen through masturbation. All samples were taken directly to the laboratory and examined within an hour of collection.

Semen volume, colour, pH, and viscosity were all assessed macroscopically. Following liquefaction, sperm volume was measured, pH was determined using pH indicator paper, and viscosity was examined using the thread creation method with a Pasteur pipette.

Microscopic examination involves evaluating sperm concentration, total sperm count, motility, vitality, and morphology. Sperm concentration was estimated using a counting chamber, and sperm motility was evaluated under light microscopy and classified as progressive, non-progressive, or immotile. Sperm morphology was assessed using Papanicolaou (Pap) and haematoxylin and eosin (H&E) staining techniques as per the laboratory's normal operating procedures.

2.5 Classification of Ejaculatory Abstinence

Semen parameters were classified as normal or abnormal using the reference values specified in the World Health Organization (WHO) Laboratory Manual for the Examination and Processing of Human Semen, 5th Edition (2010). A normal semen study included sperm concentration, morphology, progressive motility, and total motility within the WHO reference limits; semen analyses with one or more parameters below these reference values were categorized as abnormal.

2.6 Data Collection

A structured data extraction proforma was used to gather relevant demographic and laboratory information from laboratory records, such as age, period of ejaculatory abstinence, semen features, and conventional semen parameters.

2.7 Statistical Analysis

The data were analysed with IBM Statistical Package for the Social Sciences (SPSS) version 23.0 (IBM Corp., Armonk, NY, USA). Continuous data were summarized using mean ± SD or median with interquartile range (IQR), whereas categorical variables were provided as frequencies and percentages.

Comparisons between study groups were made using the independent-samples t-test for normally distributed continuous variables and the Chi-square or Fisher's exact test for categorical variables, as needed. One-way analysis of variance was used to assess differences in semen parameters between ejaculatory abstinence groups. Pearson's or Spearman's correlation coefficients were utilized to determine the correlations between age, ejaculatory abstinence length, and sperm characteristics based on the data distribution. Statistical significance was determined with a two-tailed P value of <0.05 and a 95% confidence range.

2.8 Statistical Analysis

Data were retrieved from laboratory records and analysed using **IBM SPSS Statistics version 23** (IBM Corp., Armonk, NY, USA). Continuous variables were summarized as mean ± standard deviation (SD), while categorical variables were presented as frequencies and percentages. Semen parameters were categorized as normal or abnormal according to the **World Health Organization (WHO) 2010 reference criteria**. Comparisons between categorical variables were performed using the Chi-square test or Fisher's exact test, as appropriate. Differences in continuous variables across ejaculatory abstinence groups were assessed using one-way analysis of variance (ANOVA), while correlations between continuous variables were evaluated using Pearson's or Spearman's correlation coefficients, as appropriate. A two-tailed *P* value <0.05 was considered statistically significant.

Records with incomplete data on relevant study variables were excluded from the analysis. The overall data retrieval rate was **80%**.

2.9 Ethical considerations

The study was based on anonymized retrospective laboratory records, with no direct participant contact or gathering of identifiable personal information. To preserve confidentiality and privacy throughout the study, all data were de-identified before analysis began.

3. RESULTS

3.1 Participant Characteristics

A total of **268 men** undergoing fertility evaluation were included in this study. The mean age of the participants was 40.02 ± 8.12 years (range: 20–69 years). The largest age group was 30–39 years (47.4%), followed by 40–49 years (35.4%). Overall, participants were classified as oligozoospermic, while 126 (47.0%) were normozoospermic according to WHO criteria.

Most participants (**66.8%**) reported an ejaculatory abstinence period of **4–7 days**, whereas **27.2%** reported abstinence for **2–3 days** and only **6.0%** reported abstinence exceeding **7 days**. Semen samples were obtained predominantly by masturbation (**78.4%**), while **21.6%** were collected through coitus interruptus. Macroscopic examination showed that most semen samples were of moderate consistency (49.6%) and greyish-white in colour (55.2%).

Table 1. summarizes the demographic characteristics and baseline semen collection variables of the study participants.

Characteristics	n	%
Age (years)		
Mean ± SD	40.02±8.12	
20 - 29years	16	6.0
30 - 39years	127	47.4
40 - 49years	95	35.4
50 - 59years	24	9.0
60 - 69years	6	2.2
Category of semen		
Oligozoospermia	142	53.0
Normozoospermia	126	47.0
Category of sexual abstinence		
2 - 3days	73	27.2
4 - 7days	179	66.8
More than 7days	16	6.0
Mode of collection		
Masturbation	210	78.4
Coitus Interruptus	58	21.6
Consistency		
1hour Opaque	41	15.3
Hypo	57	21.3
Hyper	23	8.6
Moderate	133	49.6
Watery	14	5.2
Colour		
Creamy	115	42.9
Greyish white	148	55.2
Yellow / White	5	1.9
Total	**268**	**100.0**

3.2 Comparison of Baseline Characteristics Between Participants with Normal and Abnormal Semen Analysis

No statistically significant differences were observed between participants with normal and abnormal semen analyses regarding age, method of semen collection, semen consistency, or semen colour (all $P > 0.05$). These findings indicate that baseline demographic and collection characteristics were comparable between the two groups.

3.3 Association Between Ejaculatory Abstinence Duration and Semen Parameters

Among oligozoospermic men, ejaculatory abstinence length was strongly associated with sperm count (P = 0.016) and concentration (P = 0.030). There were no statistically significant variations in semen volume, pH, sperm vitality, motility, or morphology between the three abstention categories.

In contrast, among normozoospermic males, the period of abstinence had a significant impact on a larger variety of semen parameters. There were significant differences in

sperm count (P = 0.011), sperm concentration (P < 0.001), semen volume (P = 0.017), fast progressive motility (P = 0.002), slow progressive motility (P = 0.039), non-progressive motility (P < 0.001), and normal and abnormal morphology (P < 0.001). No significant differences were found for semen pH or sperm vitality.

Direct comparison between oligozoospermic and normozoospermic participants further demonstrated statistically significant differences in sperm count, sperm concentration, semen volume, percentage of dead spermatozoa, fast progressive motility, normal morphology, and abnormal morphology (all $P < 0.05$), indicating distinct responses to abstinence duration based on baseline semen quality.

Table 2a: Impact of ejaculatory abstinence period on semen parameters in oligozoospermic and normozoospermic patients

Semens parameter	Oligozoospermia				Normozoospermia				
	2-3days	4-7days	>7days	P value	2-3days	4-7days	>7days	P value	P value
PH	7.86±0.24	7.75±0.35	-	0.626	7.74±0.73	7.50±0.00	-	0.663	0.613
Sperm count	5.22±4.05	4.37±3.92	12.20±0.00	0.016*	68.18±59.53	42.73±32.15	57.10±29.57	0.011*	0.000*
Sperm concentration	5.16±4.08	4.51±4.18	12.20±0.00	0.030*	93.10±89.38	41.96±32.75	57.24±29.49	0.000*	0.000*
Volume	3.43±2.29	3.84±2.14	5.00±0.00	0.432	3.11±2.28	3.49±1.48	4.82±2.64	0.017*	0.390
Dead_%	46.58±25.31	47.45±28.88	60.00±0.00	0.802	35.69±17.39	38.51±17.25	43.93±14.57	0.310	0.002*
Fast motility	22.24±19.61	16.47±16.89	15.00±0.00	0.223	45.80±22.06	33.22±16.14	33.21±14.49	0.002*	0.000*
Slow motility	18.55±12.14	16.22±16.12	20.00±0.00	0.688	17.94±9.05	18.29±10.00	11.43±3.63	0.039*	0.732
Non-progressive motility	7.24±4.30	7.22±6.28	5.00±0.00	0.865	3.48±4.59	9.53±5.97	11.43±4.57	0.000*	0.197
Normal morphology	80.50±30.03	79.98±31.53	95.00±0.00	0.794	79.14±19.35	90.68±8.29	93.93±2.13	0.000*	0.012*
Abnormal morphology	11.61±18.53	6.83±6.32	5.00±0.00	0.071	18.57±14.83	8.81±6.83	6.07±2.13	0.000*	0.019*

Table 2b: Mean ± SD or median & IQR values of semen parameters for men with normal & abnormal SA

	Normal	Abnormal	t-value	P value
PH	7.88±0.25	7.73±0.63	-0.455	0.653
Sperm count	56.91±55.58	20.19±28.67	-6.554	0.000*
Total Sperm Count	271.26±337.94	70.75±134.47	-6.692	0.000*
Volume	3.95±2.06	3.58±2.14	-1.106	0.270
Dead_%	53.91±16.26	40.84±24.43	-3.506	0.001*
Fast motility	21.83±12.61	27.85±21.51	1.851	0.065
Slow motility	15.45±10.40	17.51±13.12	1.011	0.313
Non-progressive motility	8.81±6.19	7.38±5.89	-1.495	0.136
Normal morphology	88.94±10.05	82.78±26.43	-1.572	0.117
Abnormal morphology	11.49±11.23	9.14±10.84	-1.339	0.182

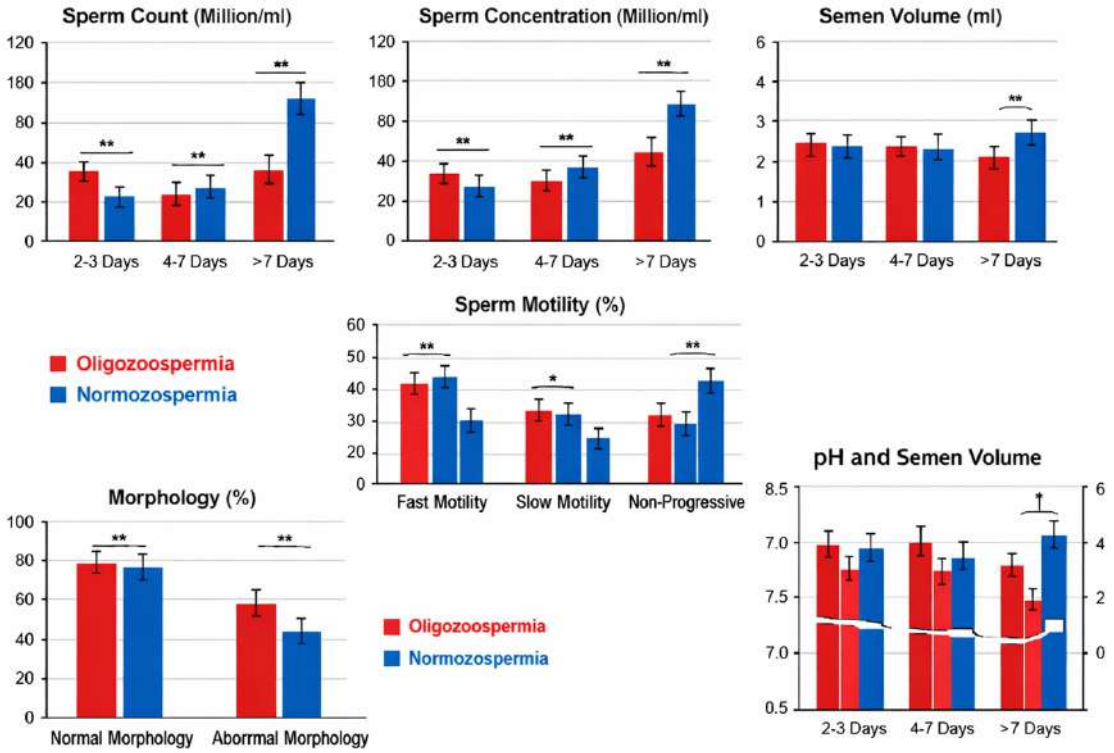

Fig.1: Impact of ejaculatory abstinence period on semen parameters in oligozoospermic and normozoospermic patients

3.4 Comparison of Conventional Semen Parameters Between Normal and Abnormal Semen Analysis

Participants with normal semen analysis demonstrated significantly higher sperm count (56.91 ± 55.58 × 10^6/mL vs. 20.19 ± 28.67 × 10^6/mL, $P < 0.001$) and total sperm count (271.26 ± 337.94 × 10^6 vs. 70.75 ± 134.47 × 10^6, $P < 0.001$) than those with abnormal semen analysis. Significant differences were also observed in sperm vitality ($P = 0.001$). Conversely, semen volume, pH, sperm motility, and sperm morphology did not differ significantly between the two groups.

3.5 Correlation Between Ejaculatory Abstinence Duration and Semen Quality

Correlation analysis demonstrated different patterns according to baseline semen quality.

Among oligozoospermic men, ejaculatory abstinence duration showed a significant negative correlation with fast progressive motility ($r = –0.196$, $P = 0.019$) and non-progressive motility ($r = –0.173$, $P = 0.040$). No significant correlations were observed for sperm count, sperm concentration, semen volume, sperm vitality, or morphology.

Among normozoospermic men, abstinence duration demonstrated a weak but statistically significant positive correlation with semen volume ($r = 0.203$, $P = 0.023$). No significant associations were identified between abstinence duration and other semen parameters.

Table 3: Correlational studies between abstinence and sperm quality in oligozoospermic and normozoospermic subjects

Semen parameters	Oligozoospermia		Normozoospermia	
	Ejaculatory Abstinence	P value	Ejaculatory Abstinence	P value
Sperm count	0.019	0.827	0.118	0.190
Sperm concentration	0.042	0.623	0.041	0.649
Volume	0.110	0.193	0.203	0.023*
Dead_%	0.146	0.083	-0.095	0.292
Fast motility	-0.196	0.019*	0.087	0.333
Slow motility	-0.075	0.372	-0.153	0.087
Non-progressive motility	-0.173	0.040*	0.177	0.050
Normal morphology	0.012	0.884	0.157	0.078
Abnormal morphology	-0.129	0.126	-0.165	0.065

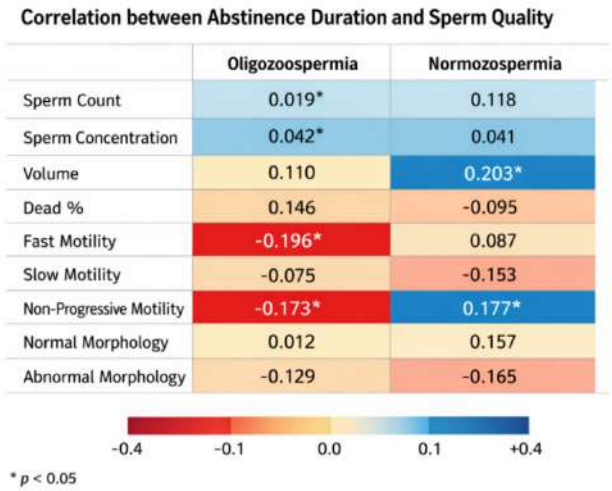

Fig. 2: Correlational studies between abstinence and sperm quality in oligozoospermic and normozoospermic subjects

3.6 Correlation Between Age and Semen Parameters

Among oligozoospermic participants, age was not significantly associated with any measured semen parameter.

Among normozoospermic men, a significant negative correlation was observed between age and normal sperm morphology ($r = -0.191$, $P = 0.032$), indicating a decline in morphologically normal spermatozoa with advancing age. No statistically significant correlations were observed between age and sperm concentration, semen volume, motility, or vitality.

Additional analyses performed using the combined study population demonstrated a weak but statistically significant inverse correlation between age and sperm count ($r = -0.129$, $P = 0.035$), as well as between age and non-progressive motility ($r = -0.133$, $P = 0.030$). Other semen parameters were not significantly associated with age.

Table 4: Correlational studies between age and sperm quality in oligozoospermic and normozoospermic subjects

Semen parameters	Oligozoospermia		Normozoospermia	
	Age	P value	Age	P value
Sperm count	0.013	0.878	-0.113	0.207
Sperm concentration	-0.011	0.897	-0.055	0.541
Volume	-0.133	0.114	-0.089	0.322
Dead_%	0.066	0.435	0.030	0.738
Fast motility	-0.154	0.068	0.047	0.599
Slow motility	-0.041	0.624	-0.064	0.479
Non-progressive motility	-0.143	0.089	-0.103	0.255
Normal morphology	-0.077	0.360	-0.191	0.032*
Abnormal morphology	-0.027	0.754	0.063	0.484

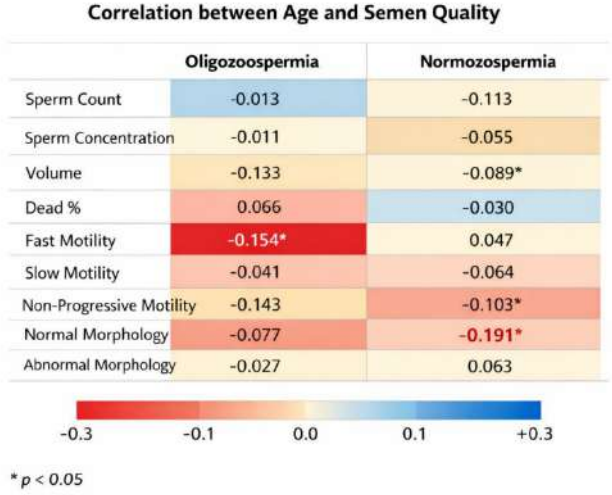

Fig. 3: Correlational studies between age and sperm quality in oligozoospermic and normozoospermic subjects

4. DISCUSSION

This study looked at how the duration of ejaculatory abstinence impacts semen quality in Nigerian men, specifically the differences between those with normal sperm counts (normozoospermic) and those with low sperm counts (oligozoospermic). The findings revealed that ejaculatory abstinence had a significant but variable effect on semen parameters, depending on the individual's baseline semen quality. Notably, extended abstinence was linked to increased sperm concentration and semen volume in some groups, but it was consistently associated with lower sperm motility, particularly among oligozoospermic men.

A notable conclusion from this study is that the period of abstinence had a substantial effect on sperm count and concentration, particularly in oligozoospermic men, but a broader range of semen parameters were changed in normozoospermic men. This suggests that men with normal spermatogenic activity are more sensitive to changes in the amount of time sperm is retained in the epididymis, whereas men with defective spermatogenesis have a more limited physiological response. Previous studies have shown similar results, suggesting that underlying testicular or post-testicular dysfunction may diminish the expected rise in sperm accumulation seen with prolonged abstinence in subfertile men.[9-11]

The positive correlation between longer periods of abstinence and greater sperm concentration is physiologically plausible. Extended intervals without ejaculation allow sperm to concentrate continually in the epididymis, resulting in increased semen volume and concentration.[13] However, an increase in numbers does not necessarily imply improved sperm function. In this study, longer periods of abstinence were consistently related to lower sperm motility, particularly fast progressive motility, which is critical for fertilization. This negative association is clinically significant since sperm motility has a considerable influence on both natural conception and success with assisted reproductive procedures.

Oxidative stress pathways can explain why sperm motility decreases with extended periods of abstinence. Sperm cells are especially sensitive to ROS damage because they lack antioxidant defenses in their cytoplasm and contain polyunsaturated fatty acid-rich membranes.[15] When sperm are held in the epididymis for a lengthy amount of time, they are subjected to increased oxidative stress, which can result in lipid peroxidation, mitochondrial damage, and reduced ATP generation.[14,16] Because mitochondrial activity is essential for sperm motility, this oxidative damage leads directly to decreased motility and poor sperm function.[14]
Prolonged abstinence may also contribute to sperm aging. As sperm age, they sustain structural and molecular damage such as DNA fragmentation and membrane instability.[18] These modifications not only reduce motility but also have a deleterious impact on fertilization and embryo development.[19,20] The decline in sperm morphology and motility reported in normozoospermic males after long periods of abstinence lends support to this biological hypothesis. This finding is consistent with a prior study, which found that shorter abstinence durations can increase sperm functional quality.[11,12]

Another important discovery is that there is a strong positive association between the length of abstinence and semen volume in normozoospermic men.[13] This is to be expected given that prolonged durations of abstinence allow fluids from the seminal vesicles and prostate to accumulate. However, increased semen volume does not always improve reproductive potential and can sometimes dilute sperm quality, particularly when combined with diminished sperm motility.

The study found that normozoospermic and oligozoospermic men respond differently, which has substantial therapeutic implications. Men with normal sperm production were more sensitive to changes in abstinence time, which influenced various semen characteristics, whereas men with low sperm counts had more focused but significant changes in sperm count and concentration. This suggests that a man's baseline spermatogenic capacity is critical in determining how sperm react to the length of time stored within the reproductive canal. Similar findings have been seen in other populations, indicating that tailored abstinence guidelines may be more beneficial than a single universal rule.[9,10]

From a therapeutic standpoint, these findings have important implications for sperm analysis and ART.[2] Although current WHO standards recommend an abstinence period of 2 to 7 days, the findings of this study indicate that shorter abstinence periods may better preserve sperm motility, particularly in males with oligozoospermia.[11] Because sperm motility is an important predictor of fertilization success in procedures such as in vitro fertilization (IVF) and intracytoplasmic sperm injection (ICSI), extending the period of abstinence may improve ART results.[12]

The significant correlation between age and sperm morphology discovered in normozoospermic males supports the theory that oxidative stress and cumulative cellular damage play a role in male reproductive aging.[21] While age did not have a significant impact on most semen parameters in oligozoospermic men, the general trend still points to a gradual decline in sperm quality with age, which aligns with findings in existing research.[8]

STRENGTHS AND LIMITATIONS

This study has various advantages, including a high sample size, the inclusion of both normozoospermic and oligozoospermic groups, and the application of standardized WHO semen analytical techniques. These characteristics

improve the reliability and clinical significance of the findings.

However, certain limits should be acknowledged. The cross-sectional design restricts causal inferences. The duration of ejaculatory abstinence was self-reported, and recall bias may exist. Advanced sperm function assays, such as the DNA fragmentation index and oxidative stress markers, were not evaluated. Furthermore, the study was conducted in a single tertiary centre, which may limit its applicability to the general community.

CONCLUSON

This study demonstrates that the duration of ejaculatory abstinence has a considerable impact on conventional semen parameters in Nigerian men, with different impacts depending on baseline semen quality. While longer periods of abstinence were associated with higher sperm concentration and volume, they appeared to have a deleterious impact on sperm motility, particularly in oligozoospermic males. These findings suggest that just increasing sperm number through extended abstinence may not result in improved sperm function.

The differences in reactions between normozoospermic and oligozoospermic males support the notion that ejaculatory abstinence guidelines should be tailored rather than universally enforced. Adjusting abstinence length depending on an individual's semen profile may increase the accuracy of semen analysis and lead to improved outcomes for assisted reproductive technologies.

Future prospective multicentre studies that include sophisticated sperm function testing, such as sperm DNA fragmentation and oxidative stress markers, are required to better define the optimal abstinence period for different groups of infertile men.

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