

## The impact of parity on sexual function in Somali women: A prospective study

The impact of parity on sexual function

Adil Barut, Deka Omer Mohamud  
Department of Obstetrics and Gynaecology, Somali-Mogadishu Recep Tayyip Erdoğan Research and Training Hospital, Mogadishu, Somalia

### Abstract

**Aim:** Childbirth is considered a celebrated and respected event in almost all societies, particularly in developing and underdeveloped countries. This study aimed to document the sexual problems of Somali women in multiparous or grand multiparous women.

**Material and Methods:** This prospective study included 363 consecutive women who had presented to the Department of Gynaecology. Data included age, number of parities, delivery method, education, and residence area. The participants were asked to complete the Female Sexual Function Index (FSFI).

**Results:** Of the 363 participating women, 12.1%, 16.8%, 34.7% and 36.4% were classified as nulliparous, primiparous, multiparous (2-4 deliveries) and grand multiparous women, respectively. The overall mean age was  $30.1 \pm 7.8$  years. The overall incidence of sexual dysfunction was 57.3%, 38.6%, 54.1%, 61.2%, and 65.9% among nulliparous, primiparous, multiparous (2-4 deliveries), and grand multiparous women, respectively.

Total FSFI and orgasm scores were significantly higher among nulliparous, primiparous, and multiparous (2-4 deliveries) women than among grand multiparous women ( $p < 0.05$ ). In addition, grand multiparous women had a significantly higher incidence of sexual dysfunction as compared with nulliparous women (65.9% vs 38.6%,  $p = 0.014$ ). Grand multiparous status showed a significant inverse association with the orgasm score. Multiparous (2-4 deliveries) and grand multiparous status had significant associations with sexual dysfunction (OR:2.05,  $p = 0.045$ ; OR:3.07,  $p = 0.002$ , respectively).

**Discussion:** Our findings showed an incremental rise in the incidence of sexual dysfunction through the forms of parity from nulliparity to grand multiparity, with the latter showing a significant difference from the former.

### Keywords

Multiparous Women, Grand Multiparous Women, Sexual Dysfunction, Somalia

DOI: 10.4328/ACAM.21886 Received: 2023-08-21 Accepted: 2023-09-21 Published Online: 2023-09-23 Printed: 2023-09-25 Ann Clin Anal Med 2023;14(Suppl 2):S192-196

Corresponding Author: Adil Barut, Department of Obstetrics and Gynaecology, Somali-Mogadishu Recep Tayyip Erdoğan Research and Training Hospital, Mogadishu, Somalia.

E-mail: dradilbarut@gmail.com P: +252 610267232

Corresponding Author ORCID ID: <https://orcid.org/0000-0002-1121-4923>

This study was approved by the Ethics Committee of Mogadishu Somali Turkey Training and Research Hospital (Date: 2022-05-09, No: MSTH/10163/09.05.2022/558)

## Introduction

Female sexual function is an important component of quality of life, affected by a wide range of factors in an individual's psychological, relational, and physical life. Although motherhood represents a celebrated event in a woman's life, in physical and psychosocial terms, it can potentially negatively impact female sexual function [1].

Similarly, childbirth is also considered a celebrated and respected event in almost all societies, particularly in developing and underdeveloped countries. This is particularly true among African populations. On the one hand, women who are not able to conceive are often underestimated and disgraced, while on the other hand, they are expected to give birth to as many children as possible, mainly because of the preference for large families on economic grounds and due to very limited availability to contraception. However, multiparity or even grand multiparity ( $\geq 5$  births) are associated with adverse obstetrical outcomes, resulting in weakening of the pelvic floor and/or a urogenital prolapse, both of which may affect sexual function [2].

The number of studies assessing the relationship between multiparity/grand multiparity and sexual function among healthy women has been very limited, with none reported from Sub-Saharan African (SAA) countries.

This study sought to examine the adverse effects of multiparity/grand multiparity on women's sexual function in a relatively large sample of Somali women, in comparison with their nulliparous married counterparts.

## Material and Methods

### Study design and participants

This prospective study included 363 consecutive married women (nulliparous, primiparous, multiparous) who had presented between May 10 and August 1, 2022 to the Department of Gynaecology of Mogadishu Somali Turkey Training and Research Hospital in Mogadishu, the capital city of Somalia. Data included age at marriage and at presentation, the number of parities, delivery methods, education status, and residency of area (rural or urban).

Participants were asked to complete the Female Sexual Function Index (FSFI). For those who were illiterate, the FSFI was completed by a gynecology specialist (AB or DOM), consistent with responses given by the participants.

Inclusion criteria were age of at least 18 years, being in a monogamous marriage and sexually active. Exclusion criteria included polygamous marriage, pregnancy, comorbid conditions, history of a previous major pelvic trauma, psychiatric or neurological disorders, alcoholism, illicit drug use, and use of drugs that might affect sexual function.

### Female Sexual Function Index

The FSFI was developed by Rosen and colleagues to assess six domains of female sexual function (sexual desire, sexual arousal, lubrication, orgasm, satisfaction, and pain) and has become one of the most widely used measures of female sexual function. The 19-item FSFI is easy to understand and has been adapted to a number of languages. The items are scored on a five-point (1 to 5) Likert scale, with lower scores corresponding to lower levels of sexual functioning and a score of less than 26.55 indicating sexual dysfunction. Fifteen items also include a sixth

response option scored with zero, indicating no sexual activity in the past four weeks [3, 4]. Cronbach's  $\alpha$  for the reliability of the FSFI in the Somalian language was found to be 0.79.

The study was approved by the Ethics and Research Committee of Mogadishu Somali Turkey Training and Research Hospital (Permission number: MSTH/10163/09.05.2022/558) and was performed in accordance with the principles and guidelines of the Declaration of Helsinki [5]. All participants were informed about the study and gave consent to publication of the results. Analysis and reporting of the results are in compliance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist.

### Definitions

Nullipara and primipara were used for a woman who has not yet given birth to a child and for a woman who has been pregnant and given birth once, respectively.

Multiparity was defined as giving birth more than once, and grand multiparity was defined as giving birth  $\geq 5$  times (live or stillbirth). Sexual dysfunction was defined by a total FSFI score of less than 26.55 [6].

### Data processing and analysis

Data were collected using a structured format, including relevant socio-demographic features and were processed using the Statistical Package for Social Sciences (SPSS) version 21 (IBM Corp., Armonk, N.Y.; USA). Quantitative data were expressed as means, standard deviation (SD), median, minimum, and maximum, and qualitative data as frequencies and percentages. Homogeneity was checked using Levene's test, where a  $p$ -value of  $>0.05$  was considered in favor of homogeneity. The Shapiro-Wilk normality test was used to check whether continuous variables were normally distributed.

Numerical variables were found to be normally distributed using the Kolmogorov-Smirnov test. For pairwise comparisons, numerical variables were compared using the independent  $t$ -test and multigroup comparisons were performed using the one-way ANOVA test. The post hoc multiple comparisons (Bonferroni) were used to determine between-group differences. Nominal variables were analyzed with Pearson's chi-squared test. Univariate analysis was performed to determine the effect of various types of parity on the subdomains of sexual function, and binary regression analysis was performed to determine the association of parity types with sexual dysfunction. A  $p$ -value of less than 0.05 was accepted as statistically significant. All variables were expressed with 95% confidence intervals (CI).

### Ethical Approval

Ethics Committee approval for the study was obtained.

## Results

During the study period, a total of 1106 women presented to the gynecology outpatient clinic. Due to physical limitations and the time required for the completion of the FSFI, every third presenting patient was selected. As a result, 482 women were asked to participate in the study, and 363 women (75.3%) gave consent and completed the FSFI. The questionnaires of 114 illiterate women (31.4%) were completed by the investigators in compliance with the responses obtained. Completion of the FSFI took 10-15 minutes for literate women and 20-25 minutes for illiterate women.

**Table 1.** Socio-demographic and clinical characteristics of 363 women.

	Mean±SD	Count	Percentage
Current age (years)	30.1±7.8	19-56	
Age at marriage (years)	19.9±3.9	11-30	
<b>Parity</b>			
Nulliparity		44	12.1
Primiparity		61	16.8
Multiparity (2-4 deliveries)		126	34.7
Grand multiparity (≥5)		132	36.4
<b>Delivery methods</b>			
Normal vaginal delivery		267	83.7
C-section		52	16.3
<b>Residency</b>			
Rural		325	89.5
Urban		38	10.5
<b>Education status</b>			
Illiterate		114	31.4
Primary school		58	16.0
Secondary or/and high school		109	30.0
University		82	22.6
<b>FSFI total score</b>			
Desire	4.3±1.3		
Arousal	4.4±1.2		
Lubrication	4.0±1.1		
Orgasm	4.3±1.1		
Satisfaction	4.6±1.3		
Pain	3.4±0.9		
<b>Sexual dysfunction *</b>			
Nulliparous women		17	38.6
Primiparous women		33	54.1
Multiparity (2-4 deliveries)		71	56.3
Grand multiparous women (≥5)		87	65.9

\*A FSFI score of <26.55 indicates sexual dysfunction. FSFI: Female Sexual Function Index; SD: Standard deviation

### Socio-demographic characteristics

The socio-demographic data of the participants are summarised in Table 1. Of 363 participating women, 44, 61, 126 and 132 were classified as nulliparous, primiparous, multiparous (2-4 deliveries) and grand multiparous women, respectively. The overall mean age was 30.1±7.8 years (range 19-56). The overall mean age at marriage was 19.9±3.9 years (range 11-30). There were no significant differences in total FSFI and subdomain scores between women having normal vaginal delivery and C-section.

### Incidences of sexual dysfunction

The overall mean FSFI total score was 25.0±4.8, which was below the cut-off value of 26.55, indicating sexual dysfunction in 205 women. The overall incidence of sexual dysfunction was 57.3%, being 38.6%, 54.1%, 61.2%, and 65.9% among nulliparous, primiparous, multiparous (2-4 deliveries), and grand multiparous women, respectively.

### Between-group comparisons

For group comparisons, multiparous women were further classified into two groups, i.e., multiparous women having 2-4 deliveries (n=126) and grand multiparous women (n=132). Comparisons of the four groups with respect to

sociodemographic features and FSFI scores are presented in Table 2. Illiteracy rates were significantly higher among grand multiparous women than among primiparous. The four groups were similar with respect to age at marriage, education status, and area of residency ( $p>0.05$ ). Total FSFI and Orgasm scores were significantly higher among nulliparous, primiparous, and multiparous (2-4 deliveries) women than among grand multiparous women ( $p<0.05$ ). In addition, grand multiparous women had a significantly higher incidence of sexual dysfunction compared to nulliparous women (65.9% vs 38.6%,  $p=0.014$ ). Nulliparous, primiparous, and multiparous (2-4 deliveries) women had similar total FSFI and subdomain scores as well as similar incidences of sexual dysfunction (Table 2).

### Univariate and binary regression analysis

The results of univariate and binary regression analyses are summarised in Table 3. Grand multiparous status showed a significant inverse association with the orgasm score. Multiparous (2-4 deliveries) and grand multiparous status were in significant associations with sexual dysfunction (for multiparity with 2-4 deliveries, OR:2.05, 95% CI 1.02-4.14,  $p=0.045$ ; for grand multiparity OR:3.07, 95% CI 1.52-6.22,  $p=0.002$ ).

**Table 2.** Comparisons across nulliparous, primiparous, and multiparous women.

Parameters	Nulliparous (n=44)	Primiparous (n=61)	Multiparous (2-4 deliveries) (n=126)	Grand Multiparous (n=132)	P
Current age (years), mean±SD	24.0±6.7	24.3±4.2	28.3±5.6	36.4±6.9	0.0001
Age at marriage (years), mean±SD	20.2±3.9	19.9±3.4	20.1±4.3	19.7±3.8	0.300
Area of residency, n (%)					
Urban	40 (90.9)	54(88.5)	113 (89.7)	118 (89.4)	0.984
Rural	4 (9.1)	7 (11.5)	13 (10.3)	14 (10.6)	
Education status, n (%)					
Illiterate	13 (29.5)	12 (19.7)	34 (27.0)	55 (41.7)	0.026
Primary school	8 (18.2)	10 (16.4)	19 (15.1)	21 (15.9)	
Secondary and/or high school	10 (22.7)	19 (31.1)	41 (32.5)	39 (29.5)	
University	13 (29.5)	20 (32.8)	32 (25.4)	17 (12.9)	
Delivery methods, n (%)					
Normal vaginal delivery	-	48 (78.7)	97 (77)	122 (92.4)	0.002
C-section	-	13 (21.3)	29 (23)	10 (7.6)	
FSFI total score, mean±SD	26.3±5.2	26.0±4.4	25.3±4.6	23.8±4.8	P1:0.018
					P2:0.021
					P3:0.039
Desire	4.4±1.3	4.5±1.1	4.4±1.2	4.2±1.3	0.331
Arousal	4.5±1.3	4.6±1.0	4.4±1.2	4.2±1.3	0.113
Lubrication	4.2±1.0	4.2±1.2	4.0±1.0	3.9±1.1	0.202
Orgasm	4.8±1.1	4.6±1.0	4.4±1.0	4.1±1.1	P1:0.0001
					P2:0.0001
					P3:0.0001
Satisfaction	4.7±1.4	4.7±1.2	4.6±1.3	4.4±1.3	0.316
Pain	3.6±0.8	3.4±0.8	3.4±0.9	3.3±0.9	0.282
*Sexual dysfunction n (%)	17 (38.6)	33(54.1)	71 (56.3)	87 (65.9)	P3:0.014

FSFI: Female Sexual Function Index; N: Number; %: Percentage; SD: Standard deviation; \*Chi-squared test; NS: Not significant; \*\*One-Way ANOVA test (Bonferroni); aA FSFI score of <26.55 indicates sexual dysfunction, P: Across-group comparisons; P1: Nulliparity-Grand multiparity; P2: Primiparity- Grand multiparity; P3: Multiparity (2-4 deliveries)- Grand multiparity.

## Discussion

We evaluated the impact of parity on sexual dimensions as determined by the FSFI scores among Somali women. To our knowledge, this is the first study in Somalia to examine the sexual impacts of parity in monogamous marriages. Similar studies are extremely rare and have been conducted in regions other than Africa [1, 7, 8], with none addressing sexual dysfunction among grand multiparous women. Previous studies on sexual dysfunction have primarily been performed in the presence of conditions that may adversely affect sexual function, such as cancer, diabetes, menopause, infertility, and pregnancy [9-12]. In our sample, grand multiparous women accounted for more than a third of the participants (36.4%) and had significantly lower total FSFI and orgasm scores than each of the other parity groups (nulliparity, primiparity, and multiparity with 2-4 deliveries), as well as a significantly higher incidence of sexual dysfunction compared to nulliparous women. These findings were consistent with the results of univariate and binary regression analyses, where grand multiparity showed a significant inverse association with orgasm in univariate analysis, and both multiparity with 2-4 deliveries and grand multiparity showed significant associations with sexual dysfunction in binary regression analysis. Importantly, the overall incidence of sexual dysfunction was considerably high (57.3%) in the cohort, representing the third highest incidence across all sub-Saharan Africa (SAA) countries, following Nigeria (80%) [13] and Ethiopia (68%) [7]. No studies from Africa

investigated sexual dysfunction based on parity. Moreover, we found a remarkably increased incidence of sexual dysfunction at 38.6% among nulliparous women, which merits further studies in this population.

Our findings showed an incremental rise in the incidence of sexual dysfunction through the forms of parity from nulliparity to grand multiparity, with the latter showing a significant difference with the former. However, a study from Iran reported an inverse relationship; hence, the greater the parity, the greater sexual activity compared with primiparous women [8]. This discrepant finding may be due to the fact that the FSFI was completed by the participants between 2 and 12 months' postpartum. Another study from Finland compared multiparous and nulliparous women and found orgasm and pain problems to a lesser extent and more satisfaction with sexual activity among multiparous women [14].

### Limitations

Although our study provides clear-cut data with a considerably large sample size about the levels of sexual dysfunction among Somali women in a wide spectrum of parity, it reflects a single-centre experience. It thus may not be representative of the general population.

### Conclusion

Our study points to a relatively overlooked issue concerning sexual dysfunction, the effects of parity on sexual function. Our findings suggest that particularly grand multiparous women experience more adverse effects as to orgasm and sexual

**Table 3.** Results of univariate and binary regression analysis.

Dependent variables	Estimate	SE	95% CI	T	P *	
<b>Primiparity</b>						
Total FSFI score	-0.308	0.946	-2.17	1.55	-0.326	0.745
Desire	0.147	0.248	-0.341-	0.635	0.594	0.553
Arousal	0.0908	0.243	-0.387	-0.568	0.374	0.709
Lubrication	-0.0803	0.212	-0.497	0.3368	-0.378	0.705
Orgasm	-0.148	0.216	-0.574	0.277	-0.686	0.493
Satisfaction	-0.0650	0.255	-0.566	0.436	-0.255	0.799
Pain	-0.253	0.178	-0.602	0.09631	-1.42	0.155
<b>Multiparity (2-4 deliveries)</b>						
Total FSFI score	-1.031	0.833	-2.67	0.607	-1.238	0.216
Desire	0.0132	0.220	-0.491	0.445	0.0601	0.952
Arousal	-0.1035	0.215	-0.525	0.3184	-0.482	0.630
Lubrication	-0.2338	0.188	-0.603	0.1356	-1.244	0.214
Orgasm	-0.343	0.186	-0.709	0.0232	-1.842	0.066
Satisfaction	-0.1177	0.225	-0.561	0.325	-0.523	0.601
Pain	-0.254	0.157	-0.563	0.05557	-1.61	0.108
<b>Grand Multiparity</b>						
Total FSFI score	-2.468	0.837	-4.12	-0.820	-2.950	0.746
Desire	-0.186	0.223	-0.625	0.252	-0.837	0.403
Arousal	-0.3295	0.212	-0.748	0.0887	-1.552	0.122
Lubrication	-0.3432	0.189	-0.716	0.0292	-1.816	0.071
Orgasm	-0.971	0.189	-1.343	-0.600	-5.151	0.0001
Satisfaction	-0.3348	0.225	-0.779	0.109	-1.486	0.139
Pain	-0.303	0.154	-0.607-	0.00575	-1.97	0.051
<b>Sexual dysfunction</b>						
		OR	95% CI	Z	P**	
Primiparity		1.87	0.85-4.12	1.56	0.119	
Multiparity (2-4 deliveries)		2.5	1.02-4.14	2.75	0.045	
Grand Multiparity		3.7	1.52-6.22	3.12	0.002	

\*Univariate analysis; \*\*Binary regression analysis; Reference: Nulliparity. FSFI: Female Sexual Function Index; SE: Standard estimate; OR: Odds ratio; CI: Confidence interval.

function. Further studies are needed on the relationship of parity with sexual function.

#### Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

#### Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

**Funding:** None

#### Conflict of interest

The authors declare no conflict of interest.

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#### How to cite this article:

Adil Barut, Deka Omer Mohamud. The impact of parity on sexual function in Somali women: A prospective study. *Ann Clin Anal Med* 2023;14(Suppl 2):S192-196

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