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Correlates of Postpartum Sexual Activity and Contraceptive Use in Kano, Northern Nigeria

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Abstract

Practices related to resumption of coitus after childbirth remains poorly documented in Nigeria. This study examined factors associated with sexual intercourse, delivery-coitus interval, and contraceptive use among postpartum women attending a tertiary centre in Kano, northern Nigeria. A cross section of 317 women attending immunization, postnatal and family planning clinics within 12 months of childbirth was interviewed using a structured questionnaire. Vaginal intercourse was resumed by most women (*n*=212; 66.9%, 95% Confidence Interval (CI) = 61.8%, 72.2%) with delivery-coitus resumption interval (mean ± SD) of 9.6±5.2 weeks postpartum. The majority (67.9%) resumed sexual activity within 8 weeks of delivery. Nearly two-thirds 65.6% (*n*=139/212) of the sexually active women reported current use of contraceptives. Onset of postpartum sexual activity was independently associated with mode of delivery adjusted odds ratio (AOR) (95%CI)= 1.10 (1.03,1.78), baby's age AOR (95%CI) =2.10 (1.27, 8.70), number of living children AOR (95%CI)=1.21 (1.07,1.79), onset of menstruation AOR (95%CI)=0.34 (0.17,0.69) and co-habitation AOR (95%CI)=0.47 (0.016, 0.14). Contraceptive use was predicted by educational status, sexual activity, baby's age and menstruation. Most women attending maternal and child health clinics resumed sexual intercourse within 2 months of delivery, but only two-thirds used modern contraceptive methods. Contraceptive counseling should commence early, preferably during pregnancy. *(Afr J Reprod Health 2018; 22[1]:103-112).*

Keywords: sexual intercourse, postpartum, contraceptive use, predictors, Nigeria

Résumé

Les pratiques liées à la reprise du coït après l'accouchement restent peu documentées au Nigeria. Cette étude a examiné les facteurs associés aux rapports sexuels, à l'intervalle entre accouchement et à l'utilisation de contraceptifs chez les femmes post-partum qui fréquentent un centre tertiaire à Kano, dans le nord du Nigéria. Un échantillon de 317 femmes qui fréquentent des cliniques de vaccination, postnatales et de planification familiale dans les 12 mois suivant l'accouchement a été interviewé à l'aide d'un questionnaire structuré. Les rapports sexuels par voie vaginale ont été repris par la plupart des femmes (n = 212, 66,9%, 95% Intervalle de confiance (IC) = 61,8%, 72,2%) avec intervalle de reprise de l'accouchement-coït (moyenne ± écart-type) de 9,6 ± 5,2 semaines après l'accouchement. La majorité (67,9%) a repris l'activité sexuelle dans les 8 semaines suivant l'accouchement. Près des deux tiers 65,6% (n = 139/212) des femmes sexuellement actives ont déclaré avoir utilisé des contraceptifs. Le début de l'activité sexuelle post-partum était indépendamment associé au mode d'accouchement modifié odds ratio (95% CI) = 1,10 (1,03,1,78), l'âge de bébé AOR (IC à 95%) = 2,10 (1,27-8,70), le nombre de enfants AOR (IC 95%) = 1,21 (1,07,1,79), début de la menstruation AOR (IC à 95%) = 0,34 (0,17-0,69) et AOR de cohabitation (IC à 95%) = 0,47 (0,016, 0,14). L'utilisation de la contraception a été prédite par le statut éducatif, l'activité sexuelle, l'âge du bébé et la menstruation. La plupart des femmes qui fréquentent les centres de santé maternelle et infantile ont repris leurs relations sexuelles dans les deux mois suivant l'accouchement, mais seulement les deux tiers ont utilisé des méthodes contraceptives modernes. La consultation de contraceptif devrait commencer tôt, de préférence pendant la grossesse. *(Afr J Reprod Health 2018; 22[1]: 103-112).*

Mots-clés: rapports sexuels, post-partum, utilisation de contraceptifs, indice, Nigeria

Introduction

Childbirth is a unique but challenging experience. For the mother it exerts profound physical, mental and emotional strain, which could influence health and the time to resumption of sexual activities[1,2]. Yet the postnatal period extending up to six weeks (42 days) after birth receives less attention from health care providers than pregnancy and childbirth[3].Postpartum sexual changes may not be easy to discuss, for both patient and provider. Yet sexual concerns are common, and the majority of patients welcome help from their primary care provider[4].

Previously, women were culturally obliged to stay away from their husbands to breastfeed for as long as 2-3 years[5].Recent reports indicate that duration of postpartum abstinence is becoming considerably shortened to an average of six to eight weeks[5,6]. Most women resumed intercourse in the early postnatal period while a small proportion delayed till up to six months[5,6].Many gynecologists now recommend waiting for 4 to 6 weeks after delivery to allow cessation of lochial loss and healing of episiotomies, tears or other birth-related perineal injuries[7,8].Although the delivery-coitus resumption interval has been reported from different countries, including Nigeria[5,9],we are not aware of any such study from Kano, a highly populous and culturally distinct city in northern Nigeria, where polygamy is common, and the region has consistently reported the highest fertility preferences, total fertility rate and lowest contraceptive uptakes in the country[10-12].

This study determined the prevalence of postpartum sexual activity, delivery-coitus interval, and their determinants among women who delivered within 12 months of the study and attended the postnatal/family planning and child welfare/immunization clinics at Aminu Kano Teaching Hospital in Kano, Nigeria. In addition, the study assessed sexual morbidity, contraceptive use and associated predictive factors. The findings could inform health workers' counseling protocols and treatment readiness.

Methods

Setting/study population

The study was conducted among recently delivered women (≤12 months of study initiation) attending the postnatal clinic, family planning and immunization/child welfare clinics of Aminu Kano Teaching Hospital (AKTH), Kano, Nigeria from January to February 2015. Immunization services are offered free of charge, but mothers attending the other clinics pay consultation fees and need not to have delivered at AKTH.AKTH is a 500-bed tertiary facility that serves as a referral centre for more than 9 million people in Kano and neighboring states. Majority of the patients are from the middle socioeconomic strata and are of the indigenous Hausa-Fulani ethnic group, although Igbo and Yoruba groups also constitute a substantial proportion of attendees[13].

Study design/population

A cross-sectional study design was used. The minimum sample size of 337 was estimated using the hypothesis testing method[14], prevalence of sexual intercourse in the postpartum period in a previous study (67.6%)[9] and error rate of 5%. The estimated sample size was increased by 10% to account for anticipated subject non-response, giving a final sample size of 371. Mothers attending the postnatal/family planning clinics and those who brought their children for immunization were eligible. Women who 1) had stillbirths or 2) were medically advised to abstain from sexual intercourse or 3) who delivered >12 months earlier were excluded.

A multistage sampling method was used. In the first stage, sample sizes were proportionately allocated based on attendance at the postnatal, family planning and immunization/child welfare clinics. In the second stage a systematic sampling technique was used in each clinic to select the study subjects. A sampling interval was first determined using the clinic registers as sampling frame and the assigned sample size.

Sequential serial numbers were then allocated to the women as they registered in the three clinics. Women whose serial numbers coincided with the sampling process were invited for an interview after obtaining informed consent. The first respondent in each clinic was selected at random between 1 and the clinic's sampling interval. Thereafter, subsequent respondents were identified by adding the sampling interval to the serial number of the previous respondent. Four Hausa-speaking female medical students were trained to conduct the interviews. The training included reading through the questionnaire, standardization of translations, interview techniques and the process of sampling and obtaining informed consent. Ethical clearance was obtained from the AKTH ethics committee.

Instruments/data collection

A pre-tested structured interviewer-administered questionnaire adapted from previous studies[9,12] was used to collect data. The modified questionnaire had five sections. The first section sought information on socio-demographic characteristics. The second section elicited obstetric history including parity, breastfeeding status and onset of menstruation after the delivery. The third section enquired about resumption of vaginal intercourse and if so, the interval between delivery and resumption of coitus. Participants were also asked about current modern contraceptive use. Motivations for resumption of sexual intercourse or abstinence, sexual morbidity/problem(s) encountered and health seeking behavior were also ascertained. The questionnaire was translated from English Language into the local (Hausa) language and back-translated to check for consistency. Female medical students were trained to conduct the interviews in a culturally acceptable manner. The questionnaire was validated by pre-testing on 30 postpartum women attending postnatal care in a different hospital (Murtala Muhammad Specialist Hospital) to ascertain the appropriateness of the items included in the different measures.

Measurements

Although, sexual activity refers to engagement in any form of act intended to arouse or gratify the sexual interest of an individual such as touching, kissing, vaginal intercourse and other mutually pleasurable techniques[15],in order to avoid ambiguity and ensure cultural sensitivity this study focused on resumption of vaginal intercourse. Contraception was also considered as informed voluntary adoption of methods of spacing, deferment or limiting child birth by the woman or her partner[16].

Measurements were operationalized as used previously[9,12] as follows: Respondents were categorized as having resumed sexual intercourse if they report having had vaginal intercourse following the last delivery. The delivery-coitus interval was recorded in weeks. The current use of modern contraceptive methods had 'Yes' or 'No' response options. A woman was said to have sexual morbidity if she reported one or more sexual problems on resumption of sexual intercourse (e.g., vaginal discharge, vaginal irritation, lack of libido, dyspareunia, etc.). The response options for motivation for resumption of sexual intercourse were categorized as 'husband's request', 'initiation by self', 'cultural demand' and 'feeling it was convenient'.

Data analysis

Data was analyzed using SPSS (version 21)[17].Incomplete, inaccurate and inconsistent data were excluded pre-analysis following data cleaning. Frequencies and simple percentages were used to describe categorical variables. Measures of central tendency and variability were employed to describe quantitative variables, depending on the distribution of the variable. Bivariate analysis was performed using Pearson's Chi-square test, Chi-square test for trend or Fisher Exact test as appropriate. Differences between means were tested using the Student t-test. Type I error was fixed at 5% for all tests of significance. Variables with $P < 0.05$ on bivariate analysis were

included in a multivariate logistic model to identify independent predictors of sexual intercourse after the last child birth. Adjusted odds ratios generated from the logistic models were used to quantify magnitude of relationships/associations.

Results

Of the 371women approached, 317 completed the interviews, giving a response rate of 85.4%.Participants' mean age ± standard deviation (SD)was 27.0 ± 5.4years.Participants were predominantly Hausa (51.1%, *n*=162) or Fulani (25.2%, *n*=80) and Muslim (82.0%, *n*=260).Of those that were married (89.0%, *n*=282),a third (33%, *n*=94) were in polygamous unions. Median (range) duration of marriage was 6 years (1-29 years) and majority (89.7%, *n*=253/282) were co-habiting with their husbands at the time of the study. About a third of respondents had secondary (32%, *n*=101) or post-secondary (31%, *n*=98) education. Almost half (48%, *n*=152) of the respondents were stay at home mothers.

Obstetric characteristics

Median parity (range) was two (one to nine) with mean (±SD) age of babies of 4.9 ± 3.3 months. Nearly two-thirds (61%*n*=193) of the participants had spontaneous vaginal delivery, 23% (*n*=73) had caesarean section while 16.1% (*n*=51) had instrumental vaginal delivery. More than half (52.1%, *n*=165) of the participants had episiotomies done. In addition, (15.1%, *n*=48) women sustained genital injuries. The most common injuries were vaginal lacerations (70.8%, *n*=34/48) and perineal tears (25.0%, *n*=12/48).More than three-fourths (78%, *n*=247) of the women were breastfeeding their babies at the time of the study and most of the women (61%, *n*=193) had resumed menstruation.

Resumption of sexual intercourse postpartum

Two thirds of the respondents (66.9%, *n*=212/317) (95%CI=61.8% to 72.2%) had resumed sexual intercourse after their last delivery. The interval between delivery and resumption of coitus ranged from 4 weeks to 28 weeks (mean±SD=9.6±5.2weeks). Of those who had sexual intercourse after delivery (*n*=212), the proportions resuming <6 weeks, 6 to <8 weeks, 8 to <12 weeks, 12 to ≤28 weeks were 21.7%, 46.2%, 16.5%, and 15.6% respectively. Motivations for resumption of coitus were mainly 'husband's demand' (67.5%, *n*=143/212), and self-wish (14.6%, *n*=31). In contrast, the main reasons proffered by sexually abstinent women (33.0%, *n*=105) included 'baby too young' (81.0%, *n*=85), 'don't want to get pregnant just yet' (13.3%, *n*=14), 'not interested' (2.9%, *n*=3) and 'partner not available as a result of divorce or widowhood' (2.9%, *n*=3).

Sexual morbidity

Almost two-thirds 64.2% (*n*=136/212) of respondents who had resumed sexual intercourse reported asexual problem at some point. These included reduced sexual desire (31.6%, *n*=67), dyspareunia (32.5%, *n*=69), vaginal dryness/soreness (15.6%, *n*=33), vaginal 'looseness' (15.6%, *n*=33) and vaginal discharge (6.1%, *n*=13). However, less than two-thirds of those who experienced sexual morbidity (63.2%, *n*=86/136) sought help. The main sources of help were friends 70.9% (*n*=61/86), mother 29.1% (*n*=25/86), doctor 11.6% (*n*=10/86), or the internet 8.1% (*n*=7/86). Reasons for not seeking advice included shyness (42.0% *n*=21/50), problem resolved (52.0%, *n*=26/50), cultural/religious factors (26.0%, *n*=13/50), and 'no female doctor' (16.0%, *n*=8/50).

Contraceptive use

Of respondents that resumed coitus (*n*=212), almost two-thirds 65.6% (*n*=139) were currently using modern contraceptives. The popular methods were: injectables (33.1%, *n*=46/139), implants (21.6%, *n*=30/139), oral contraceptives (20.1%, *n*=28/139), and intrauterine device (10.8%, *n*=15/139). Less popular ones included the rhythm method (5.0%, *n*=7/139), male condom

Table 1: Socio-demographic and Obstetric Characteristics of Postpartum Women in Kano, Nigeria

Characteristics	Frequency
Age groups (years)	No. (%)
<25	115 (36.2)
25-29	101 (31.9)
≥30	101 (31.9)
Total	317 (100)
Education	
No formal	65 (20.5)
Primary	51 (16.1)
Secondary	103 (32.5)
Tertiary	98 (30.9)
Total	317 (100.0)
Ethnicity	
Hausa	162 (51.1)
Fulani	80 (25.2)
Igbo	29 (9.1)
Yoruba	25 (7.9)
Others	21 (6.6)
Total	317 (100.0)
Religion	
Muslims	260 (82.0)
Christians	57 (18.0)
Total	317 (100.0)
Marital Status	
Married	282 (88.9)
Widowed/Divorced	35 (11.1)
Total	317 (100.0)
Occupation	
Stay at home mothers	152 (48.0)
Traders	92 (29.0)
Civil servant	25 (8.0)
Others	48 (15.0)
Total	317 (100.0)
No. of living children	
0-1	90 (28.4)
2-4	183 (57.7)
≥5	44 (13.9)
Total	317 (100.0)
Mode of delivery	
Spontaneous vaginal	199 (62.8)
Caesarean section	73 (23.0)
Instrumental	45 (14.2)
Total	317 (100.0)
Baby's age (months)	
<1	47 (14.8)
1-6	169 (53.3)
>6-12	101 (39.9)
Total	317 (100.0)

(3.6%, *n*=5/139), female condom (2.9%, *n*=4/139), and female sterilization (2.9%, *n*=4/139).

Predictors of postpartum resumption of sexual intercourse and contraceptive use

At bivariate level, postpartum sexual intercourse was significantly associated with respondent's age, education, co-habitation, duration of marriage, number of living children, mode of delivery, baby's age and resumption of menstruation (P<0.05).After adjusting for confounders using logistic regression analysis, number of living children, mode of delivery, baby's age, resumption of menstruation and co-habitation remained significant predictors(Table 2).

At bivariate level contraceptive use was significantly associated with respondent's age, education, duration of marriage, number of living children, resumption of sexual intercourse, baby's age, and resumption of menstruation (P<0.05). After adjusting for potential confounders, education, baby's age, resumption of sexual intercourse, and menstruation remained independent predictors (Table 3).

Discussion

The proportion of women that had resumed sexual intercourse after delivery (66.9%) was comparable with reports from other parts of Nigeria [Jos (67.6%)[9], Sagamu (65%)[5]] and from Kampala, Uganda (66.4%)[18]. However, it is higher than the figures found in Ghana (23.8%)19 and Germany (47%)[20] but lower than the those from the UK (89%)[21] and USA (90%)[22]. The mean time to resumption of coitus postpartum was longer than the reported figures from Uganda (7.06 weeks)[18] and Turkey (7.87 weeks)[23].Most women in this study had resumed sexual intercourse within a fortnight after puerperium.

Apart from variations in follow up period (range; 3 to 12 months) and study populations, the differences between our findings and others likely reflect tradition, culture or religious peculiarities.

Sexual intercourse within the puerperium (<6weeks post-delivery) was not rare (21.7%), as was earlier reported from Ekiti (27.6%), south west Nigeria[24].An even higher proportion of women resumed sexual intercourse soon after the puerperium in Nnewi (48.7%), south east Nigeria[25]. The puerperium is usually followed by a postnatal check commonly at 6 weeks when women are examined to ensure that episiotomies and perineal tears are healed, thereby re-assuring couples that all is well[26]. With this re-assurance, couples are more likely to resume sexual activity soon afterwards. The tendency towards early

Table 2: Predictors of Postpartum Sexual Intercourse in Women in Kano, Nigeria

Characteristics	Sexual activity No. (%) Resumed	Not resumed	Crude OR (95% CI)	Adjusted OR(95%CI)	P-value
Age Group					
<25	56(48.7)	59(51.3)	1.00		
25-29	72 (71.3)	29 (28.7)	1.46 (1.17-1.83)*	2.47 (0.83-7.34)	0.10
≥30	78 (77.2)	23 (22.8)	1.59 (1.28-1.97)*	1.63 (0.60-4.48)	0.34
Education					
No formal	35(53.8)	30(46.2)	1.00		
Primary	28 (54.9)	23 (45.1)	1.02 (0.73-1.43)	1.50 (0.59-3.80)	0.40
Secondary	69 (67.0)	34(33.0)	1.24 (0.96-1.62)	0.82 (0.28-2.38)	0.71
Tertiary	74 (75.5)	24(24.5)	1.40 (1.09-1.80)*	1.11 (0.49-2.50)	0.80
Co-habitation with husband					
Yes	194 (68.3)	90(31.7)	1.00		
No	12 (36.4)	21(63.6)	0.53 (0.34-0.84)*	0.47 (0.016-0.14)	0.001*
Mode of delivery					
Spontaneous vaginal	139(69.8)	60(30.2)	1.43 (1.04-1.95)*	1.10 (1.03-1.78)	0.05*
Caesarean	45 (61.6)	28(38.4)	1.26 (0.89-1.79)	0.46 (0.19-1.11)	0.084
Instrumental	22(48.9)	23(51.1)	1.00		
Baby's age (months)					
<1	17(36.2)	30(63.8)	1.00		
1-6	104(61.5)	65(38.5)	1.70 (1.14-2.53)*	1.53 (1.22-7.52)	0.017*
>6-12	85(84.2)	16(15.8)	2.33 (1.58-3.43)*	2.10 (1.27-8.70)	0.001*
Duration of marriage (years)					
≤2	31(42.5)	42(57.5)	1.00		
>2-10	137(72.1)	53(27.9)	1.70 (1.28-2.25)*	1.06 (0.25-4.41)	0.94
>10	38(70.4)	16(29.6)	1.66 (1.21-2.28)*	0.35 (0.11-1.07)	0.065
No. of living children					
0-1	47(52.2)	43(47.8)	1.00		
2-4	126(68.9)	57(31.1)	1.32 (1.06-1.64)*	1.10 (0.53-2.29)	0.79
≥5	33(75.0)	11(25.0)	1.44 (1.11-1.86)*	1.21 (1.07-1.79)	0.034*
Resumption of menstruation					
Yes	152 (80.4)	37 (19.6)	1.00		
No	54 (42.2)	74 (57.8)	0.52 (0.42-0.65)*	0.34 (0.17-0.69)	0.003*

OR=Odds Ratio; 95%CI=95% Confidence Interval; *=Significant at P≤0.05

coital resumption following child birth contrasts with the long established culture of prolonged abstinence and 1-2 years of breastfeeding which protected against pregnancy in traditional cultures[5,27]. While most gynecologists recommend waiting for 4 to 6 weeks after delivery to allow cessation of lochial loss and healing of episiotomies, tears or other birth-related perineal injuries[7,8], the importance of preventing unplanned pregnancy soon after childbirth cannot be stressed enough. Although the uptake of contraceptives seems to be higher than in the general populace, the effects of selection factors cannot be ruled out, whereby women presenting to tertiary centers were more likely to be educated and of higher socioeconomic status. The link between education/socioeconomic status and contraceptive use is consistent[28-30].

Apart from maintaining marital harmony, some of our respondents considered early resumption of sexual intercourse as a strategy to prevent their partners from seeking sexual gratification elsewhere, a logical presumption. However, sexual intercourse increases the risk of unwanted pregnancy in the absence of contraception. Predominance of husband-initiated

Table 3: Predictors of Postpartum Contraceptive use in Women in Kano, Nigeria

Characteristics	Contraceptive use No. (%) Yes	No	Crude OR (95% CI)	Adjusted OR(95%CI)	P-value
Age group					
<25	22 (19.1)	93 (80.9)	1.00		
25-29	44 (43.6)	57 (56.4)	2.28 (1.47-3.52)*	0.96 (0.46-1.99)	0.90
≥30	53 (52.5)	48 (47.5)	2.74 (1.80-4.17)*	2.05 (0.87-4.84)	0.10
Education					
No formal	18 (27.7)	47 (72.3)	1.00		
Primary	12 (23.5)	39 (76.5)	0.85 (0.45-1.60)	1.78 (0.79-4.03)	0.16
Secondary	40 (38.8)	63 (61.2)	1.40 (0.88-2.23)	1.35 (0.70-2.58)	0.37
Tertiary	49 (50.0)	49 (50.0)	1.81 (1.16-2.80)*	2.62 (1.03-6.69)	0.043*
Resumed sexual activity					
Yes	107 (51.9)	99 (48.1)	1.00		
No	12 (10.8)	99 (89.2)	0.21 (0.12-0.36)*	0.18 (0.088-0.38)	0.001*
Baby's age (months)					
≤1	12 (25.5)	35 (74.5)	1.00		
>1-6	50 (29.6)	119 (70.4)	1.16 (0.67-1.99)	1.34 (0.50-3.61)	0.56
>6-12	57 (56.4)	44 (43.6)	2.21 (1.31-3.71)*	1.93 (1.06-3.49)	0.031*
Duration of marriage (years)					
≤2	14 (19.2)	59 (80.8)	1.00		
>2-10	76 (40.0)	114 (60.0)	2.09 (1.26-3.45)*	2.82 (0.82-9.68)	0.10
>10	29 (53.7)	25 (46.3)	2.80 (1.64-4.77)*	2.18 (0.79-5.96)	0.13
No. of living children					
0-1	21 (23.3)	69 (76.7)	1.00		
2-4	76 (41.5)	107 (58.5)	1.78 (1.18-2.69)*	0.99 (0.3-3.30)	0.99
≥5	22 (50.0)	22 (50.0)	2.14 (1.33-3.45)*	0.73 (0.27-2.02)	0.54
Resumption of menstruation					
Yes	96 (50.8)	93 (49.2)	1.00		
No	23 (18.0)	105 (82.0)	0.35 (0.24-0.53)*	0.40 (0.21-0.75)	0.004*

OR=Odds Ratio; 95%CI=95% Confidence Interval; *=Significant at P≤0.05

resumption of coitus (77.4%) in the present study concurs with reports from Jos, Nigeria[9] and from Uganda[18] and Cote d'Ivoire[31]. It is culturally untenable for such requests to be turned down in our study setting where 22.7% of women agreed that a husband is justified in hitting or beating his wife when she refuses to have sexual intercourse with him[12].This contrasts with the developed world where women are more assertive.

Men's interest in early resumption of sexual activity highlights the need to engage them in discussions about appropriate timing of sexual activities after child birth, unplanned pregnancy, and contraceptive use well before the birth of the baby. Such couple-centered prenatal counseling could allay anxiety and encourage informed choices about when to safely and comfortably resume sexual activity. Health workers also need the capacity and confidence to initiate such sensitive discussions. Secondly, a tenth of the women reportedly resumed sexual intercourse on their own accord. This is unusual as sexual norms and assumptions in many African settings do not expect women to want sex or find it pleasurable[9]. Nonetheless, effects of cultural inhibitions are by no means uniform even in the same part of the country[9,32].

A third of women were yet to resume sexual intercourse after delivery, mostly because the baby was too young or they were afraid of getting pregnant too soon. This contrasts with the reasons proffered by women in Jos, Nigeria[9] and Kampala, Uganda[18]. In both instances the main reason was non-availability of the husband.

Elsewhere, in Ontario, Canada[33], decline in sexual desire was the main reason for non-resumption of coitus postpartum. This difference may be due to the patriarchal nature of the study setting, where women are less assertive compared to developed countries where women are empowered and aware of their sexual and reproductive rights[21, 33]. The other reasons given for abstinence from coitus are like earlier studies[18,25].

The proportion of women who encountered at least one sexual problem on resumption (40%) is higher than the figures reported from Uganda (22.2%)[18] and the Gambia (27%)[34],but less than the numbers from Turkey (58.3%)[23],Australia (64.3%)[35],the UK (83%)[21],and Canada (96.0%)[33]. Apart from differences in study populations, methods and measurements, these figures could have been influenced by under-reporting occasioned by cultural restraints and self-limiting nature of some of the symptoms. Cultural inhibition and lack of encouragement on the part of health providers could further explain the proportion of women who reportedly discussed the symptoms with health providers[5,9,18]. The range of symptoms was in concordance with earlier studies[5,18,25]. Health care providers should routinely counsel and encourage couples, especially women, to voice out sexual concerns during the postpartum period so that they can be effectively addressed. Existing guidelines could be adopted to reflect local cultural sensitivities and individual preferences[36].

More than a third (38%) of the women in this study were currently using a modern method. This is much higher than figures reported from population-based surveys (10%)[12] and postpartum women attending other Nigerian hospitals in Jos (19.1%)[9],and Enugu (14.7%)[37].Apart from variations in study population, methods and measures of the studies, this unusually high level of contraceptive uptake could be attributed to the correspondingly high proportion of women with formal education and the dominance of women from middle and high socioeconomic strata among our study participants. These factors are known to influence contraceptive use[12].Regardless of the relatively higher contraceptive uptake rate in this study compared to other studies, the fact that one-third of respondents were not using any modern contraceptive method despite early resumption of sexual intercourse in the postpartum highlights the need for prenatal counseling on family planning options.

The popular methods among the respondents were similar to the findings of the 2013 Demographic Health Survey, where injectables were the favorite among married women[12]. The higher contraceptive prevalence among women that had resumed menstruation could be due to the use of menstruation as an external sign of fecundity by health care providers and lay public alike[38]. It is a common practice to ask women to return for family planning services after resumption of menstruation[39].

The predictive effects of mode of delivery, baby's age, number of living children, menstruation, and co-habitation on resumption of coitus postpartum have been similarly reported[5,18,38]. The differences in periods of recuperation following different modes of delivery, pain and tissue injury that accompany instrumental and caesarean delivery and pre-morbid conditions of the women could account for variations in time of resumption of sexual activity.

Baby's age corresponds to the time since delivery. The longer this duration, the more likely that episiotomies and vaginal lacerations have healed. In addition, the older the baby, the more hopeful the mother is that her child would survive even if another pregnancy occurs. Sexual desire is also expected to improve the longer the interval from time of delivery. Women of high parity are more experienced and are more likely to have developed a timeline from previous births.

Unsurprisingly, contraceptive use was significantly associated with educational status, resumption of sexual intercourse, baby's age, and resumption of menstruation. The influence of these factors has been reported earlier[9].Education empowers women to plan their lives while the remaining three factors increase the risk of pregnancy. Therefore, girl-child education and economic empowerment are important long-term measures for preventing unwanted and unplanned pregnancies and their consequences.

This study was limited by at least two factors. First, selection factors at the study clinics restricted the extent to which the results could be

generalized. Being a tertiary centre, rural dwelling women and those of low literacy and socio-economic status were under-represented. Secondly, sexual issues are still taboo in the study setting. This is more so in the postpartum period when women are expected to be abstinent and to concentrate on the care of the baby. Therefore, socially desirable responses may be given. However, one-on-one confidential interviews conducted by trained female interviewers from the same culture reduced the social barrier.

Conclusion

In conclusion, majority of women in this study setting were sexually active postpartum. The time of resumption of sexual activity varied widely among couples, and was mainly influenced by partner's predisposition, socio-demographic and obstetric factors. Contraceptive uptake was higher than in the general populace and was also strongly influenced by educational status and obstetric characteristics. Couple-centered counseling and discussion about postpartum sexuality, pregnancy risks, and contraception could allay anxiety and inform individual choices about timing of sexual activity following child birth. A detailed assessment of sexual function using a standardized tool and qualitative interviews could shed more light on postpartum sexual behavior in this setting.

Contribution of Authors

Zubairu Iliyasu, Hadiza S Galadanci and Khadija M. Danlami conceived and designed the study, Khadija M. Danlami and Hadiza S Galadanci collected the data while Zubairu Iliyasu, Hadiza S Galadanci, Hamisu M Salihu and Muktar H Aliyu analysed the data and prepared the draft manuscript. All authors reviewed and approved of the final manuscript.

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