

Perineal Injury and Its Association with Postpartum Sexual Dysfunction among First Delivery Women

N. Zalina, M. N. Ainy, and P. Hafizah

ABSTRACT

Background: Female sexual dysfunction (FSD) following childbirth imposes significant burden to the marital institution around the world. The perineal injury may potentially be one of the main risk factors contributing to postpartum female sexual dysfunction (PPFSD). The study aimed to determine the effect of perineal injury and patients' characteristics on PPFSD.

Methodology: This cross-sectional questionnaire study was conducted in six different health clinics in the district of Kuantan from April 2019 to October 2019. Eligible women who came to the family health clinics at 6 months postpartum were recruited as study population. The participants completed their biodata and socio-demographic form and the Malay-validated Female Sexual Function Index (MVFSFI) questionnaire given. A cut-off point of 26.55 and below on MVFSFI scoring system was used as a measure of the primary outcome of sexual dysfunction.

Results: Out of 240 women who delivered vaginally, 34 (14%) had intact perineum, 107 (44.6%) sustained 1st degree perineal tear, 96 (40%) 2nd degree tear and three (1.25%) 3rd degree tear. Among the respondents, 60.9% of the sexually active respondents who had vaginal delivery, reported to have PPFSD. The timing of sexual resumption does not correlate with the severity of perineal tear. The severity of perineal tear is significantly associated with age ($p=0.018$), duration of marriage ($p=0.008$), body mass index (BMI) ($p=0.019$) and instrumental delivery ($p=0.025$). The level of personnel skill whom performed the repair were also found to have a significant relationship to PPFSD ($p=0.001$). The relationship of participants' mean age ($p=0.271$), marriage duration ($p=0.903$), race ($p=0.928$), religion ($p=0.852$), education level ($p=0.549$), employment status ($p=0.102$), family income ($p=0.460$) and BMI ($p=0.159$) with presence of PPFSD were all found to be statistically not significant.

Conclusion: Occurrence of PPFSD is high among sexually active women who had vaginal delivery complicated by perineal tear, especially among those requiring instrumentation. The severity of perineal tear is associated with age, duration of marriage, BMI and mode of delivery. However, PPFSD does not significantly relate to the severity of perineal tear. None of the socio-demographic factors show a significant difference to sexual dysfunction.

Keywords: perineal tear, post-partum female sexual dysfunction, vaginal delivery, instrumental delivery.

Published Online: June **, 2021

ISSN: 2736-5476

DOI: 10.24018/ejclinimed.2021.2.3.74

N. Zalina*

Obstetrics and Gynaecology Department,
International Islamic University,
Malaysia.

(e-mail: drzalina@iiu.edu.my)

M. N. Ainy

Obstetrics and Gynaecology Department,
International Islamic University,
Malaysia.

(e-mail: ainy_79@gmail.com)

P. Hafizah

Department of Community Medicine,
International Islamic University,
Malaysia.

(e-mail: drhafizah@iiu.edu.my)

*Corresponding Author

I. BACKGROUND OF THE STUDY

Female sexual dysfunction (FSD) is impairment in a women's sexual function or inadequate ability of a woman to engage in or enjoy satisfactory sexual intercourse and orgasm. It affects 41% of reproductive-age women worldwide, making it a highly prevalent medical issue [1]. The prevalence of FSD in the local setting ranges from 12 to 45%, depending on the study population [2]-[4].

FSD following childbirth is often neglected by patients and

health care providers. The patient may be too shy to complaint, in fear of social taboo. It is also possible that patients feel uncomfortable to enquire about sexual related problems. Malaysia is a multiracial and multicultural society, but most are still conservative, and sexual matters are rarely discussed openly. Local healthcare providers, too, may not enquire about patient's sexual health after childbirth, hence leaving the issue unresolved.

Despite of 67% of women reported experiencing pain during intercourse postpartum, 72.3% of them did not seek care [5]. Embarrassment and preoccupation with the newborn

are some of the reasons why many women do not find help. There is also a matter of lack of professional awareness, expertise and recognition which form part of the prerequisite in the definition of sexual dysfunction [6].

With regards to perineal tear, Doğan et al. [7] noted that vaginal deliveries with mediolateral episiotomy were found to be associated with a decreased sexual functioning in terms of sexual desire, arousal, and orgasm within the first five years postpartum. Obstetric anal sphincter injury was a strong and independent predictor for both postponed coital resumption after delivery and for dyspareunia one year postpartum. Higher-degree perineal tears negatively affect female sexual function up to one year after childbirth [8]. In contrast, episiotomy and spontaneous second-degree lacerations do not significantly affect sexual function [9].

Women who delivered vaginally without episiotomy, reported significantly lower perineal pain at weeks one, two and six postpartum compared to women who had an episiotomy [10]. This is contrary to the finding of pain scores being indifferent between the sutured and un-sutured groups [11]. Postpartum reports of urinary or anal incontinence, sexual inactivity, or sexual function scores did not vary between groups. At six months postpartum, primiparous women who delivered with anal sphincter laceration are less likely to report sexual activity [12].

Among the studies done, patients' characteristics were also looked upon to determine their relationship with sexual dysfunction; patient's age, race, religion, husband's age, duration of marriage, presence of comorbidities such as medical illness and obesity, mode of delivery, perineal injury sustained, suturing of the perineal tear, breastfeeding and contraception [3]-[5]. Local study on the prevalence of FSD among overweight and obese women was reported to be low 12.3% [2].

A healthy sexual relationship has pivotal role in a marriage, and PPFSD is not uncommon. Previous studies regarding this issue showed contradicting results. To date, there is still no published study exploring PPFSD among Malaysian women following the severity of perineal injury. Therefore, we aim to study the relationship between sexual dysfunction and the severity of perineal injury, and other possible co-factors, among first delivery women in our local setting.

II. STUDY DESIGN

This cross-sectional study was approved by the Medical Research Ethics Committee (MREC) with National Medical Research Register (NMRR) reference number NMRR17-3526-36872. It was conducted in 6 health clinics in the district of Kuantan from April 2019 to October 2019. The instruments used in this study include The Malay version of the Edinburgh Postnatal Depression Scale (EPDS), the patient sociodemographic and obstetrical background form and The Malay-Validated Female Sexual Function Index (MVFSFI) questionnaire.

The inclusion criteria were: primiparous women six months after a term singleton delivery, aged 18 to 45 years, married, and living with the husband and must be Malay literate as the questionnaire is in Malay Language.

This study used universal sampling method therefore all first delivery women who attended health clinics at 6 months

post-delivery either for follow up or their baby's vaccination was screened based on the mentioned inclusion and exclusion criteria. Antenatal book reviewed and the Malay version of the EPDS questionnaire was used to screen patient for postpartum depression [13]. Patient was asked regarding their background medical and psychiatric problem if there were uncertainties. They were then approached by the investigator and explained regarding the research, what was required from them; to answer the questionnaire honestly as the score will reflect whether she does or does not have the sexual dysfunction. Once the patient agreed and consented to participate, she was brought to a private/secluded area in the clinic and given the biodata and sociodemographic profile form and the MVFSFI questionnaire.

Women who had preterm birth, any history of chronic systematic disease (e.g., diabetes mellitus, hypertension, Systemic Lupus Erythematosus, kidney disease), depression or postpartum depression, pregnant, those with primary sexual dysfunction prior to pregnancy or sexual trauma were excluded from the study. Those who were recruited but not sexually active at the time of interview, will still be included in the study.

The Female Sexual Function Index (FSFI) had been Malay-validated locally and had been accepted to be used in the assessment of FSD within the Malaysian population [4]. The MVFSFI has 19 items for the assessment of the six domains of sexual function in woman which include: desire, arousal, lubrication, orgasm, satisfaction, and pain. A cut off total score of 26.55 and below indicates presence of sexual dysfunction.

The sociodemographic data includes variables such as name, age, education level, employment status, monthly income, body mass index (BMI) etc. Low income (B40) is monthly household income of RM4360 or less, moderate income (M40) is monthly income between RM4360 and RM9619, and the high-income group (T20) is those with monthly earning of RM9620 and above [14].

The sample size was calculated based on the 25% female sexual dysfunction prevalence in the local setting [2]. A sample size of 288 subjects was calculated to be sufficient with power of 90% and significance level of 5%. However, this number was increased to 320 to allow for predicted dropouts of 10% during the study. The sampling was discontinued once the targeted sample size achieved.

Statistical analysis was performed using Statistical Package for Social Sciences for Window software (SPSS version 24.0). All the numerical data were presented in means and standard deviation (SD) while categorical data was expressed as number and percentage (%). The Pearson chi-square test was used to determine the significant relationship between two categorical variables; in this case the relationship of sexual dysfunction and mode of delivery. A calculated probability p value < 0.05 was considered as statistically significant.

III. RESULTS

There were 320 participants recruited into the study. Two hundred twenty-three (69.7%) women had spontaneous vertex delivery (SVD), 17 (5.3%) had instrumental delivery while the remaining 80 (25%) had Caesarean delivery.

Among these 240 vaginal delivery groups, 34 had intact perineum (15.2%), 102 (45.7%) sustained 1st degree perineal tear, 85 (38.1%) had 2nd degree perineal tear and only 3 (1.0%) had 3rd degree perineal tear. Episiotomy is included under 2nd degree perineal tear.

Nine women (3.8%) did not resume sexual intercourse (SI) yet by six months at the time of interview. Among the reasons listed for the delay on time of SI resumption include the women's unpreparedness to do so in view of sudden dramatic change to the role of a mother, phobia from the childbirth experience, fear of disrupting the perineal repair and strict compliance to local traditional confinement period that includes sexual abstinence of up to 100 days. Therefore, they were excluded from subsequent sexual analysis.

Table I shows the sociodemographic characteristics of the study population who had vaginal deliveries (n=240). The mean age of the participants was 27.3±4.7 years and the mean duration of their marriage was 3±2.9 years. The younger age

group women (26.4±4.4) had more severe perineal tear (p=0.018) compared to the older age group. The duration of marriage revealed the severity of perineal tear is less in those women with longer duration of marriage (p=0.008). A majority (90.8%) were the Malays and 91.6% were Muslims. Among the correspondents, 45.0% obtained secondary education level, 57.2% were unemployed housewives and 57.1% were from the low social income group (B40). There were 37.5% of the participants who were overweight, and this subgroup made up the 52.9% (nine out of the seventeen) women who had instrumental delivery. There were 15 (6%) participants who were under weight and this subgroup had lowest risk of 2nd degree and 3rd perineal tear (p=0.019). Out of seventeen women who had instrumental delivery, 12(70%) sustained 2nd and 3rd degree perineal tear. The race, religion, educational level, socioeconomic status, and birth weight of the babies did not influence the severity of perineal tear.

TABLE I: THE RELATIONSHIP OF PATIENT'S SOCIODEMOGRAPHIC AND CLINICAL CHARACTERISTICS BY DEGREE OF PERINEAL TEAR AMONG RESPONDENTS (N=240)

Patient's demographic and clinical characteristics	Intact n (%) (N=34)	1 st degree n (%) (N=107)	2 nd and 3 rd n (%) (N=99)	χ^2 (df)	p value
Age (yrs)	29.0±5.4	27.1± 4.8	26.4± 4.4	4.067(2) ^a	0.018*
Marriage duration (yrs)	4.4±3.9	2.8±2.9	2.6±2.5	4.873(2) ^a	0.008*
Race					
Malay	31 (14.2)	95 (43.6)	92 (42.2)	1.066 (2)	0.587
Non Malay	3 (13.6)	12 (54.5)	7 (31.8)		
Religion					
Muslim	31 (14.1)	97 (44.1)	92 (41.8)	0.361 (2)	0.835
Non-Muslim	3 (15.0)	10 (50.0)	7 (35.0)		
Education Level					
Primary	3 (6.4)	22 (46.8)	22 (46.8)	7.543 (4)	0.110
Secondary	22 (20.4)	48 (44.4)	38 (35.2)		
Higher	9 (10.6)	43.5	45.9		
Occupation					
Employed	14 (14.0)	43 (43.0)	43 (43.0)	0.228 (2)	0.892
unemployed	19 (13.7)	64 (46.0)	56 (40.3)		
Family Income					
Low	23 (14.4)	68 (42.5)	69 (43.1)	2.723 (4)	0.605
Middle	10 (15.6)	29 (45.3)	25 (39.1)		
High	1(6.3)	10 (62.5)	5 (31.3)		
Body Mass Index (kg/m ²)					
Underweight	2 (13.3)	9 (60.0)	4 (26.7)	15.101 (6)	0.019*
Normal	4 (4.7)	41 (48.2)	40 (47.1)		
Overweight	23 (23.5)	38 (38.8)	37 (37.8)		
Obese	5 (11.9)	19 (45.2)	18 (42.9)		
Mode of delivery					
SVD	34 (15.2)	102 (45.7)	87 (39.0)	7.354 (2)	0.025*
Instrumental	0 (0)	5 (29.4)	12 (70.6)		
Birth weight (kg)	3.1±0.4	3.0±0.4	3.1±0.4	2.316 (2) ^a	0.101

^aMean ± SD.

^bYate's correction *significant at p value <0.05.

TABLE II: TIMING OF RESUMPTION OF SEXUAL INTERCOURSE IN RELATION TO DEGREE OF PERINEAL TEAR (N=240)

Resumption of sexual intercourse	Intact n (%) (N=34)	1 st degree n (%) (N=107)	2 nd & 3 rd n (%) (N=99)	χ^2 (df)	p value
Within 6 months	33 (14.3)	105 (45.5)	93 (40.3)	2.586 (2) ^b	0.274
More than 6 months	1 (11.1)	2 (22.2)	6 (66.7)		

^bYate's correction.

There was no significant relationship between severities of perineal tear with the timing of sexual resumption (Table II). Nine participants did not resume SI 6 months post-delivery. Those who did not resume SI 6 months post-delivery were mostly from the 2nd and 3rd degree perineal tear group (66.7%) but it was not statistically significant. There were two cases of 3rd degree who were not sexually active 6 months post-delivery. In view of only one case of 3rd degree tear being

sexually active, it was group together with 2nd degree perineal tear for possible statistical analysis on FSD.

The patient demographic data such as age, race, religion, socioeconomic status, and BMI (Table III) has no statistical correlation with FSD. The overall risk of FSD amongst the study population is 60.9%. It is highest in women who had vaginal delivery compared to 48.1% caesarean section group (p=0.026).

TABLE III: THE ASSOCIATION OF PATIENT'S CLINICAL CHARACTERISTICS WITH FSD AMONG SEXUALLY ACTIVE RESPONDENTS (N=308)

Patient's demographic and clinical characteristics		Intact/ skin nick, n (%)	1 st degree, n (%)	2 nd degree, n (%)	χ^2 (df)	p value
Age	(year)	28.1±4.9	27.2± 4.7	26.3± 4.4	4.157(2) ^a	0.017*
Years of marriage	(year)	3.5±3.3	2.8±2.9	2.5±2.4	3.268(2) ^a	0.039*
Race	Malay	105 (36.2)	96 (33.1)	89 (30.7)	1.417 (2)	0.492
Religion	Non-Malay	8 (29.6)	12 (44.4)	7 (25.9)	0.428 (2)	0.807
	Muslim	105 (36.0)	98 (33.6)	89 (30.5)		
Education Level	Non-Muslim	8 (32.0)	10 (40.0)	7 (28.0)	4.172 (4)	0.383
	Primary School	15 (25.0)	23 (38.3)	22 (36.7)		
Occupation	Secondary School	52 (37.7)	48 (34.8)	38 (27.5)	0.530 (2)	0.767
	Higher	46 (38.7)	37 (31.1)	36 (30.3)		
Family Income	Employed	50 (37.3)	43 (32.1)	41 (30.6)	2.999 (4)	0.558
	Unemployed	62 (34.1)	65 (35.7)	55 (30.2)		
Body Mass Index (kg/m ²)	Low	75 (35.4)	69 (32.5)	68 (32.1)	15.383 (6)	0.017*
	Middle	27 (33.8)	29 (36.2)	24 (30.0)		
Mode of delivery	High	11(44.0)	10 (40.0)	4 (16.0)	0.200 (4)	<0.0001*
	Underweight	6 (31.6)	9 (47.4)	4 (21.1)		
Birth weight (kg)	Normal	26 (24.1)	42 (38.9)	40 (37.0)	1.042 (2) ^a	0.354
	Overweight	45 (37.8)	38 (31.9)	36 (30.3)		
Complications	Obese	36 (50.7)	19 (26.8)	16 (22.5)	1.479 (2) ^b	0.477
	SVD	34 (15.4)	102 (46.2)	85 (38.5)		
Complications	Instrumental delivery	0 (0)	5 (31.2)	11 (68.8)	0.200 (4)	<0.0001*
	Caesarean section	79 (98.8)	1 (1.2)	0 (0)		

^aMean ± SD.^bYate's correction.

*significant at p value <0.05.

TABLE IV: THE ASSOCIATION BETWEEN DEGREE OF PERINEAL TEAR AND FSD AMONG SEXUALLY ACTIVE RESPONDENTS (N=231)

FSD Intact n (%) N=34	1 st degree n (%) N= 107	2 nd degree n (%) N= 99	χ^2 (df)	P value
Yes 20 (12.7)	75 (47.8)	62 (39.5)	2.029	0.363
No 14 (16.9)	32 (38.6)	37 (44.6)	(2)	

* significant at p value < 0.05.

The majority of women who had vaginal delivery, 67.9% (209/231) have SFD. Those who sustained perineal injury, 59.0% (137/231) have FSD. The only participant with 3rd degree perineal tear who are sexually active also has FSD. However, it does not correlate with the severity of perineal tear. Women with intact perineum, 12.7% are also suffering from SFD (Table IV).

TABLE V: THE ASSOCIATION BETWEEN LEVEL OF PERSONNEL SKILLS WHOM PERFORM THE PERINEAL TEAR REPAIR WITH FSD AMONG SEXUALLY ACTIVE RESPONDENTS (N=201)

Healthcare Personnel	FSD Present n (%)	FSD Absent n (%)	χ^2 (df)	P value
Midwife	93 (66.9)	46 (33.1)	18.252 (4) ^b	0.001*
House Officer	15 (93.8)	1 (6.2)		
Medical Officer	24 (53.3)	21 (46.7)		
Specialist	1 (100)	0 (0)		

^bYate's correction.

* significant at p value <0.05.

Referring to Table V there was a significant relationship between the level of personnel skills who performed the perineal tear repair with presence of FSD in the sexually active respondents ($p=0.001$). The perineal tears were repaired mostly by the midwives (45.1%). Only one case was repaired by the specialist which was the third-degree perineal

tear. However, the FSD was found significantly higher among women who had their perineal tear repaired by the House Officer (93.8%).

TABLE VI: THE ASSOCIATION OF MVFSFI DOMAIN SCORES BASED ON DEGREE OF PERINEAL TEAR AMONG RESPONDENTS

FSFI score	Intact mean (SD) (N=34)	1 st degree		F ^c (df)	P value
		mean (SD) (N=107)	2 nd degree mean (SD) (N=99)		
Desire	3.5 (0.7)	3.3 (0.9)	3.2 (1.0)	1.059 (2)	0.348
Arousal	3.6 (1.3)	3.7 (4.6)	3.1 (1.6)	0.815 (2)	0.444
Lubrication	4.1 (1.6)	3.7 (1.9)	3.4 (2.2)	1.721 (2)	0.181
Orgasm	4.3 (1.8)	4.2 (4.7)	3.6 (2.3)	0.972 (2)	0.380
Satisfaction	4.8 (1.5)	4.4 (1.6)	4.1 (1.8)	2.539 (2)	0.081
Pain	3.9 (2.0)	3.5 (1.9)	3.4 (3.9)	0.349 (2)	0.706

^cOne-way ANOVA.

The total MVFSFI score who sustained PPFSD is highest among respondents with intact perineum (25.09±7.24) and about the same among 1st degree perineal tear and 2nd degree (21.76± 9.02 and 21.31 ±9.94) respectively. A further analysis on the FSFI domains score for participants with FSD, 2nd degree perineal tear showed lowest scores for all domains compared to others with the most domain affected is arousal and pain, however, this finding is not statistically significant (Table VI).

IV. DISCUSSION

Referring to our study, 60.7% of overall participants have PPFSD. It is significantly more in vaginal delivery group compared to caesarean section group. This is actually much

higher than what was quoted in previous local studies which was 12-45% among Malaysian general female population [2]-[4]. However, this percentage is more consistent with previous similar studies done in other countries. The vaginal delivery group: both the SVD group and the instrumental delivery group, showed up to more than 74.9% with PPFSD [5].

This paper is focussing mainly on 240 women who had vaginal delivery and sustained perineal tear. Women who had vaginal delivery, 67.9% suffered from PPFSD, and majority of them sustained some degree of perineal tear upon delivery. Majority of these women also did not resume sexual intercourse within the first six months. Women, who had major trauma in labour and delivery, tend to have less desire to be held, touched, and stroked by their partner compared to women with minor trauma. This gives the impression that caesarean delivery may give protective effect in term of sexual functioning. It was stated that there was a decrease in the percentage of occurrence of sexual problems following caesarean delivery postpartum [15], [16].

Signorello et al. [7] stated that women who delivered with intact perineum reported the best outcomes overall, whereas perineal trauma and the use of obstetric instrumentation were factors related to the frequency or severity of postpartum dyspareunia. This is further supported by Leeman et al. [11] as he stated that deeper perineal tear usually causes more dyspareunia and subsequently affects the sexual function. He described a perineal trauma of more than 2cm depth will cause dyspareunia. In this study, we found that there is no significant association between degrees of perineal tear with risk of having FSD. Our respondents both from first and second degree perineal injury have almost similar percentage of FSD. This is inconsistent with the theory of deeper perineal injury may cause more pain.

The only one participant with 3rd degree perineal tear and sexually active was also found to have FSD. It is well known that 3rd and 4th degree tears are strongly associated with post-partum sexual dysfunction and episiotomy does not adversely affect sexual function [9], [17]. Our patient's demographic factors such as age, duration of marriage, BMI, educational level as well as baby's birth weight do not influence the risk having FSD which is inconsistent with other studies [5], [3].

We found that older age group first delivery women and those with longer duration of marriage sustain less severe degree of perineal injury. This result is in consistent with Hardeman A et al. [18] in his retrospective case-control analysis of 2,967 first deliveries women. He concluded that advanced maternal age, vaginal operative delivery, higher fetal birth weight, mediolateral and median episiotomy, and abnormal cephalic presentation were associated with severe lacerations. Waldenström and Ekéus [19] in their population-based register study which includes 959,559 live singleton vaginal births recorded in the Swedish Medical Birth Register found that maternal age is an independent risk factor for obstetrics anal sphincter injury. The age-related risks by parity are also relatively similar.

Additional findings that we have discovered in our study is the relationship between the level of personnel who perform the perineal tear repair with presence of FSD which was found to be statistically significant ($p = 0.010$). Among

patients repaired by house officers, fifteen (93.8%) of them were found to have sexual dysfunction. House officers were our young doctors who mostly have less than 4 months of O&G training experience. Comparing this to those repaired done by trained midwives, a lesser percentage of 67.4% of the women has sexual dysfunction. This finding could explain why FSD is not significantly associated with severity of perineal injury but how and who did the repair is important. There was no detail on type of suture and method of suturing used for the repair i.e. continuous or interrupted. These could be another reason why FSD is not related to the severity of tear but more of how or who did the repair. An earlier study by Hasanpoor et al. [20] showed that pain severity was similar if repaired by either method. A recent study however showed that women who had a continuous suture repair had lower levels of pain [21]. These factors can be suggested to be taken into consideration in future studies.

Further analysis on sexual domain causing PPFSD, was made based on the severity of perineal tear. The relationship between MVFSFI domain scores was found to be statistically significant in all aspect of domains. The desire and arousal domains are among the lower score which explained the theory that sexual dysfunction is most likely due to the hypoestrogenism state women experiencing postpartum together with the high levels of prolactin due to breastfeeding. This is supported by finding in previous studies stating that breast-feeding may alter sexual function as a result of vaginal dryness produced by the high levels of prolactin and lowered estrogen [16], [22].

There were several limitations in this study. As it is a questionnaire-based study, the scoring given by the patient is subjective and may be affected by patient's conception of the importance of the study [22]. Other factors such as breastfeeding and type of contraception also play important roles in the patient's sexual function especially in desire and lubrication domain, thus affecting the other domains and scoring. Future studies should include these two important factors to eliminate confounding effect in the end result. Ideally, a prospective cohort study with much bigger sample size will probably reveal more accurate findings and better understanding of the impact of perineal tear on a woman's sexual function. Future studies should include the base sexual function score taken when a woman first got pregnant, to score her sexual function pre-pregnancy, and then to compare with the scores at six months and subsequently twelve months post-delivery. More details on which sexual domain was affected most and the type of suture and method of suturing used for the repair could also be included in future studies.

V. CONCLUSION

This study concluded that there was no significant relationship between severity of perineal tear on the six-month postpartum sexual function. PPFSD was found involving 67.9% of the sexually active respondents who delivered vaginally especially in those who sustained perineal injury. The socio-demographic factors do not significantly affect FSD. The severity of injury is influenced by maternal age, duration of marriage, BMI, and instrumental delivery.

VI. RECOMMENDATION

Intrapartum episiotomy and instrumental deliveries should be avoided when necessary and perineal tear should be repaired by experienced personnel. FSD is high in this region, therefore clinicians need to be more inquisitive on their patient's postpartum sexual function during their encounter in the postnatal clinics.

ACKNOWLEDGEMENTS

Special thanks to staffs in Klinik Kesihatan Ibu dan Anak Jalan Gambut, Klinik Kesihatan Beserah, Klinik Kesihatan Balok, Klinik Kesihatan Jaya Gading, Klinik Kesihatan Indera Mahkota and Klinik Kesihatan Paya Besar in the district of Kuantan who had contributed a lot in recruiting and collecting data for my research. Last and not least is to Dr Ainol Suraya Ismail for her proof reading of this article.

REFERENCES

- [1] McCool-Myers, M. (2018). Predictors of Female Sexual Dysfunction: A Systematic Review and Qualitative Analysis through Gender Inequality Paradigms. *BMC Women's Health*, 18(1), 108. [https://doi: 10.1186/s12905-018-0602-4](https://doi.org/10.1186/s12905-018-0602-4).
- [2] Abidin, A., Draman, N., Ismail, S., Mustaffa, I. & Ahmad, I (2016). Female Sexual Dysfunction among Overweight and Obese Women in Kota Bharu, Malaysia. *Journal of Taibah University Medical Sciences*, 11(2), 159-167. <https://doi.org/10.1016/j.jtumed.2016.01.009>.
- [3] Ishak, I. H., Low, W. Y. & Othman, S. (2010). Prevalence, Risk Factors, and Predictors of Female Sexual Dysfunction in a Primary Care Setting: A Survey Finding. *Journal of Sexual Medicine*, 7(9), 3080-3087. [https://doi: 10.1111/j.1743-6109.2010.01848.x](https://doi.org/10.1111/j.1743-6109.2010.01848.x).
- [4] Sidi, H., Abdullah, N., Puteh, S. E. W. & Midin, M. (2007a). The Female Sexual Function Index (FSFI): Validation of the Malay Version. *Journal of Sexual Medicine*, 4(6), 1642-1654. [https://doi: 10.1111/j.1743-6109.2007.00476.x](https://doi.org/10.1111/j.1743-6109.2007.00476.x).
- [5] De Lima, H., Bento, J., De Sá Vieira Abuchaim et al (2014). Sexual Dysfunction and Associated Factors Reported in the Postpartum Period. *ACTA Paulista de Enfermagem*, 27(6), 573-578. <https://doi.org/10.1590/1982-0194201400093>.
- [6] Abdool, Z., Thakar, R. & Sultan, A. H. (2009). Postpartum Female Sexual Function. *European Journal of Obstetrics and Gynecology and Reproductive Biology*, 145(2), 133-7. [https://doi: 10.1016/j.ejogrb.2009.04.014](https://doi.org/10.1016/j.ejogrb.2009.04.014).
- [7] Doğan B, Gün İ, Özdamar Ö, Yılmaz A, Muççu M. Long-term impacts of vaginal birth with mediolateral episiotomy on sexual and pelvic dysfunction and perineal pain. *J Matern Fetal Neonatal Med*. 2017 Feb;30(4):457-460. doi: 10.1080/14767058.2016.1174998. Epub 2016 Apr 25. PMID: 27112425.
- [8] Hanan Abd Elwahab El Sayed, Soad Abd el Salam Ramadan, Heba Abdel-Fatah Ibrahim, Huda Abd Allah Moursi, The Effect of Mode of Delivery on Postpartum Sexual Function and Sexual Quality of Life in Primiparous Women, *American Journal of Nursing Science*. Vol. 6, No. 4, 2017, pp. 347-357. doi: 10.11648/j.ajns.20170604.19.
- [9] Fodstad K, Staff AC, Laine K. Sexual activity and dyspareunia the first year postpartum in relation to degree of perineal trauma. *Int Urogynecol J*. 2016 Oct;27(10):1513-23. doi: 10.1007/s00192-016-3015-7. Epub 2016 May 16. PMID: 27185318.
- [10] Chang, S. R., Chen, K. H., Lin, H. H., Chao, Y. M., Yeur-Hur, L. & Lai, Y. H. (2011). Comparison of the Effects of Episiotomy and No Episiotomy on Pain, Urinary Incontinence, and Sexual Function 3 Months Postpartum: A Prospective Follow-up Study. *International Journal of Nursing Studies*, 48(4), 409-418. [https://doi: 10.1016/j.ijnurstu.2010.07.017](https://doi.org/10.1016/j.ijnurstu.2010.07.017).
- [11] Leeman, L., Rogers, R., Borders, N., Teaf, D. & Qualls, C. (2016). The Effect of Perineal Lacerations on Pelvic Floor Function and Anatomy at 6 Months Postpartum in a Prospective Cohort of Nulliparous Women. *Birth*, 43(4), 293-302. [https://doi: 10.1111/birt.12258](https://doi.org/10.1111/birt.12258).
- [12] Kahramanoglu, I., Baktiroglu, M., Hamzaoglu, K., Kahramanoglu, O., Verit, F. F., Yucel, O. (2017). The Impact of Mode of Delivery on the Sexual Function of Primiparous Women: A Prospective Study. *Archives of Gynecology and Obstetrics*, 295(4), 907-916. [https://doi: 10.1007/s00404-017-4299-7](https://doi.org/10.1007/s00404-017-4299-7).
- [13] Kadir, A. A., Nordin, R., Ismail, S. B. & Yaacob, M. J. (2004). Validation of the Malay Version of Edinburgh Postnatal Depression Scale for Postnatal Women in Kelantan, Malaysia. *Asia Pacific Family Medicine*, 3(1-2): 9-18. Khajehei, M., Doherty, M., Tilley, P. J. M. & Sauer, K. (2015). Prevalence and Risk Factors of Sexual Dysfunction in Postpartum Australian Women. *Journal of Sexual Medicine*, 12(6), 1415-1426. [https://doi: 10.1111/jsm.12901](https://doi.org/10.1111/jsm.12901).
- [14] Mahidin, M. U. (2017). Laporan Penyiasatan Pendapatan Isi Rumah Dan Kemudahan Asas 2016. Sumber Statistik Rasmi Malaysia, <https://dosm.gov.my>.
- [15] Nikpour, M., Delavar, M. A. & Abedian, Z. (2013). Type of Delivery and Self-Reported Postpartum Symptoms among Iranian Women. *Clinical and Experimental Obstetrics and Gynecology*, 40(1), 144-147.
- [16] Lurie S, Aizenberg M, Sulema V, Boaz M, Kovo M, Golan A, Sadan O. Sexual function after childbirth by the mode of delivery: a prospective study. *Arch Gynecol Obstet*. 2013 Oct;288(4):785-92. doi: 10.1007/s00404-013-2846-4. Epub 2013 Apr 16. PMID: 23589124.
- [17] Ola Gutzeit, Gali Levy, Lior Lowenstein. Postpartum Female Sexual Function: Risk Factors for Postpartum Sexual Dysfunction. *Sex Med* 2019;8:e13.
- [18] Hornemann A, Kamischke A, Luedders DW, Beyer DA, Diedrich K, Bohlmann MK. (2010). Advanced age is a risk factor for higher grade perineal lacerations during delivery in nulliparous women. *Arch Gynecol Obstet*. Jan;281(1):59-64. doi:10.1007/s00404-009-1063-7. Epub 2009 Mar 31. PMID: 19333610.
- [19] Waldenström and Ekéus (2017). Risk of obstetric anal sphincter injury increases with maternal age irrespective of parity: a population-based register study. *BMC Pregnancy and Childbirth* 17:306 DOI 10.1186/s12884-017-1473-7.
- [20] Hasanpoor, S., Bani, S., Shahgole, R. & Gojzadeh, M. (2012). The Effects of Continuous and Interrupted Episiotomy Repair on Pain Severity and Rate of Perineal Repair: A Controlled Randomized Clinical Trial. *Journal of caringsciences*, 1(3), 165-171. [https://doi: 10.5681/jcs.2012.024](https://doi.org/10.5681/jcs.2012.024).
- [21] Martínez-Galiano, J. M., Arredondo-López, B., Molina-García, L., Cámara-Jurado, A.M., Cocera-Ruiz, E. & Rodríguez-Delgado, M. (2019). Continuous versus Discontinuous Suture in Perineal Injuries Produced during Delivery in Primiparous Women: A Randomized Controlled Trial. *BMC Pregnancy and Childbirth*, 19, 499. <https://doi.org/10.1186/s12884-019-2655-2>.
- [22] De Lima, H., Bento, J., De Sá Vieira Abuchaim, E., Coca, K. P. & De Vilhena Abrão, A.C. F. (2014). Sexual Dysfunction and Associated Factors Reported in the Postpartum Period. *ACTA Paulista de Enfermagem*, 27(6), 573-578. <https://doi.org/10.1590/1982-0194201400093>.
- [23] Adam, P. and Madlon-Kay, D. J. (2012). What Is the Prevalence of Vaginal Dryness Postpartum and What Is the Best Treatment? *Evidence-Based Practice*, 15(12), 8-9.
- [24] Aşkin, M., Koç, E. M., Sözen, M. K., Sahin, E. M. and Aydoğmuş, S. (2019). Evaluation of Factors Affecting Sexual Functions and Contraceptive Method Preferences of Women. *Duzce Medical Journal*, 21(3), 172-76. [https://doi: 10.18678/dtfd.593920](https://doi.org/10.18678/dtfd.593920).