

Evaluation of Post Hysterectomy Sexual Function in Two Developing Countries

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Abstract: Although many patients are reported to feel better after hysterectomy, there are several reports on sexual dysfunction. A large number of papers are published on comparison between routes and techniques, however; there is a paucity of literature to compare the outcome of Total Abdominal Hysterectomy (TAH) between two different countries. The present study is an attempt to evaluate the results of TAH on sexual markers in respondents from Bangladesh (group 1) and Pakistan (group 2). A total of 60 women, thirty (each from the two groups) were evaluated by a questionnaire, which included important markers of sexual function in women. The response to question on erectile dysfunction and/or premature ejaculation in men of the respondents in both the groups showed lack of any positive influence, which removed any bias due to this defect. The others were the markers on obstacles (vaginal bulge, negative emotional feelings) in sexual activity. A certain proportion of respondents in both the groups tend to avoid sex due to these markers. The overall results suggest that the urge to sex is not affected in both the groups, while in some, the desire might be related to intake of hormones (group 2), while in group 1, three showed no desire to sex at all. Dyspareunia, intensity of orgasms and frequency of intercourse were affected in both the groups. Difficulty to reach orgasm was felt by about 1/3 respondents. Taken together, the results of this study suggest an obvious impact of hysterectomy, which is not significantly gruesome. The intergroup differences were statistically insignificant. Our results indicate oneness in the findings of global literature on hysterectomy-related sexual dysfunction.

Key words: Post Hysterectomy • Sexual Dysfunction • Incidence • Comparison • Developing Countries

INTRODUCTION

Hysterectomy is performed for serious gynecological problems (pelvic pain, endometriosis, dyspareunia, uterine fibroids, endometrial hyperplasia, adenomyosis and uterine or vaginal prolapse, placenta praevia or percreta, obstetrical hemorrhage, benign conditions and cancers. [1,2]. There are three main types of hysterectomies namely; Total hysterectomy (complete removal of uterus and cervix), Subtotal hysterectomy (removal of the uterus, leaving the cervix in situ and Radical hysterectomy (complete removal of uterus, cervix, upper vagina and parametrium [3-6]. The different approaches to hysterectomies are (i) Abdominal (2) Vaginal and (3)

Laparoscopy Assisted Vaginal Hysterectomy (LAVH). Most hysterectomies (60-80%) in the United Kingdom and the United States are done via abdominal incision and at least 95% of these are total rather than subtotal [7]. The abdominal hysterectomy technique provides the most effective way to explore the abdominal cavity and perform complicated surgeries [8]. Vaginal hysterectomy is performed through vagina and has clear advantages over abdominal surgery such as fewer complications, shorter hospital stay and shorter healing time [9]. Laparoscopic hysterectomy is a new procedure that has both advocates and detractors. In perfect hands, the complication rate of laparoscopic hysterectomy does not exceed that of traditional hysterectomy methods [10, 11].

Hysterectomy has a number of complications, including hemorrhage, infection, injuries to adjacent organs, unintended major surgical procedures and second operations [11]. The predominant adverse effects of hysterectomy are related with sexual dysfunction [12]. The scenario is worst in post-menopausal women who underwent hysterectomy by either abdominal or vaginal routes. In both the routes the sexual function was badly affected. The impact was such that even estrogen replacement therapy had no effect [13]. In a comparative study on treatment of dysfunctional uterine bleeding by trans-cervical endometrial resection/ablation or subtotal and total hysterectomy, McPherson *et al.* [14] found the prevalence of psychosexual problems (loss of interest in sex, difficulty in becoming sexually excited and vaginal dryness) was more after hysterectomy than after transcervical endometrial resection/ablation. However, most of the patients are reported to feel better after hysterectomy, except one third, who reported low libido and less frequent orgasms. Although, the psychosexual impact of hysterectomy is limited, but is not more frequent when vaginal surgery is performed [15].

The selection of the type and approach to hysterectomy is the most important decision influenced by reason for performing the hysterectomy, the size of the uterus and the experience and preference of the individual gynecologist and the option of the patient. Beyond all the decision grossly depends on the economic status of not only the patient, but also the facilities existing in the country of residence. A large number of papers are published on the comparison of the techniques and routes of performing hysterectomy, [9,10,16] however; there is a paucity of literature to compare the outcome (specially the sexual function) of the same route and technique performed in different countries. The present study is an attempt to evaluate the outcome of TAH on sexual markers in respondents from Bangladesh and Pakistan, the South East Asian countries, which are geographically apart from each other and have a different status of civilization, climate, culture, economic development and medical facilities.

Methodology: A total of 60 women, thirty each from Bangladesh (group 1) and Pakistan (group 2) underwent total hysterectomy via abdomen for benign uterine pathology were evaluated for sexual function by a questionnaire. The total abdominal hysterectomy (TAH) was selected as the subject to study as these were the most commonly undertaken hysterectomies, not only in underdeveloped but also the developed countries [7]. The

women (now onwards, respondents) were married and had children as an evidence of the effective sexual function of the couples. The respondents were in the reproductive age group of 35-45 years. The sexual function was evaluated six months postoperatively. The settings were Obstetrics and Gynecology Departments of hospitals of Bangladesh (Shaheed Suhrawardy Medical College, Dhaka) and Pakistan (Services Hospital, Lahore).

The questionnaire (Likert type) included the following queries on relevant markers of post-hysterectomy sexual function; (i) sexual function in men of the post-hysterectomy responders (ii) bulging in vagina and negative emotional feelings (disgust, guilt, shame and fear) of the responders as the obstacles in sexual function (iii) desire to sex (iv) use of hormones, if any (v) general parameters of sexual function, arousal, enjoyment during foreplay and excitement in sexual activity (vi) dyspareunia during sex and difficulty to reach orgasm (vii) intensity of orgasms and (viii) frequency of intercourse. The data obtained was statistically computed by Chi square test.

RESULTS

Erectile Dysfunction and Premature Ejaculation:

Different intensities of erectile dysfunction, as observed by the respondents were casually present in men of both the groups, group 1 (26.67%) and group 2 (40.0%). Dysfunction was never felt by majority of the respondents in group 1 (73.33%) and group 2 (56.67%). The intergroup differences in both the frequencies were statistically insignificant ($P > 0.05$). A casual frequency (43.33%) of premature ejaculation was observed in both the groups. This was never felt by an equal number of respondents (46.67%) in both the groups. The intergroup differences were statistically insignificant ($P < 0.05$) (Table 1, Figure 1).

Avoidance of Sex Due to Bulging in Vagina and Negative Emotional Feelings:

The avoidance of sex was usually felt by respondents in group 1 (6.67%) and group 2 (23.33%). This was casually felt by 16.67% and 26.67% of group 1 and group 2, respectively.. Majority of the respondents in group 1 (76.67%) and group 2 (50.0%) never felt the drawback of bulging in vagina. The negative emotional feelings were casually observed in group 1 and usually (16.67%) and casually (23.33%) observed in group 2. Majority of the respondents in group 1 (70.0%) and group 2 (60.0%) never felt the negative emotional feelings. The intergroup differences were statistically insignificant ($p > 0.05$) (Table 2, Figure 2).

Table 1: A study on the sexual function in men of the post-hysterectomy responders

Serial	Evaluated markers by respondents	Group 1				Group 2			
		Always	Usually	Casually	Never	Always	Usually	Casually	Never
1	Erectile dysfunction	0 (0.00%)	0 (0.00%)	8 (26.67%)	22 (73.33%)	0 (0.00%)	1 (3.33%)	12 (40.00%)	17 (56.67%)
2	Premature ejaculation	1 (3.33%)	2 (6.67%)	13 (43.33%)	14 (46.67%)	0 (0.00%)	3 (10.00%)	13 (43.33%)	14 (46.67%)

Total respondents for each parameter/country: 30; Chi square - p>0.001

Table 2: A study on obstacles with post-hysterectomized women to proceed with the sexual function

Serial	Evaluated markers	Group 1				Group 2			
		Always	Usually	Casually	Never	Always	Usually	Casually	Never
1	Avoidance of sex due to bulging in vagina	0 (0.00%)	2 (6.67%)	5 (16.67%)	23*** (76.67%)	0 (0.00%)	7 (23.33%)	8 (26.67%)	15 (50.00%)
2	Emotional feelings (fear, disgust, guilt)	1 (3.33%)	1 (3.33%)	7 (23.33%)	21*** (70.00%)	0 (0.00%)	5 (16.67%)	7 (23.33%)	18 (60.00%)

Total respondents for each parameter/country: 30; Chi square (P>0.05)

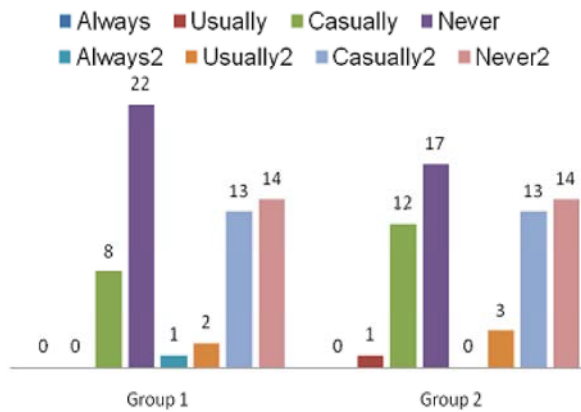


Fig. 1: A study on the sexual function in men of the post-hysterectomy responders From Left to Right: First 4 bars denote erectile function; Last 4 bars denote premature ejaculation

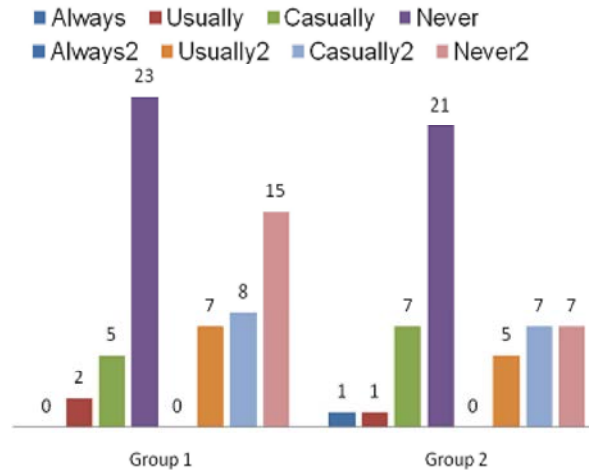


Fig. 2: A study on obstacles with post-hysterectomized women to proceed with the sexual function

From Left to Right: First 4 bars denote avoidance of sex due to bulging in vagina; Last 4 bars denote emotional feelings (fear, disgust, shame and guilt).

Desire to Sex: The results on desire to sex showed sharp differences in the weekly (group 1, 56.67% and group 2, 33.33%), monthly (group 1, 13.33% and group 2, 33.33%) > month (group 1, 16.67%, group 2, 33.33%). Sharp differences were increased weekly frequency in group 1, while in group 2, this was more in monthly and > month frequency. One negative point observed was that 10.0% of the respondents in group 1 had no desire to sex. The intergroup differences were statistically insignificant (p<0.05), except that of a monthly frequency in group 2, which was statistically significant (p<0.05) as compared to group 1 (Table 3, Figure 3).

Use of Hormones: Hormones (mostly estrogens) were used by 20.0% of the respondents in group 2 (p<0.05), as compared to 3.3% in group 1. Those who used noticed significant improvement (p<0.05). The difference among those who did not use hormones between the two groups was statistically insignificant (p>0.05) (Table 4, Figure 4).

Sexual Arousal, Foreplay, Excitement: The usual and casual feeling of sexual arousal was 23.33 and 40.0% in group 1 and 33.33% in group 2. There were no intergroup differences (p>0.05). The frequency of responders, who did not feel sexual arousal were 6.67 and 10 percent in group 1 and 2, respectively. Enjoyment in foreplay as revealed always (group 1, 16.67%, group 2, 6.67) usually (group 1, 23.33%, group 2, 46.67%)

Table 3: Data on Comparative Post-Hysterectomy Desire to Sex

Country	Daily	Weekly	Monthly	> Month	Never
Group 1	1(3.33%)	17(56.67%)	4(13.33%)	5(16.67%)	3(10.00%)
Group 2	0(0.00%)	10(33.33%)	10*(33.33%)	10(33.33%)	0(0.00%)

Total Number of Participating Respondents in each country = 30; Intergroup significance (Chi square - *p<0.05)

Table 4: Comparison of Post Hysterectomy use of hormones

Country	Used hormones	Not used any hormone	Improvement when used hormones	Type of hormone used
Group 1	1(3.33%)	29(96.67%)	1	Estrogen
Group 2	6*(20.00%)	24(80.00%)	6*	Estrogen

Total Number of Participating Respondents in each country = 30; Intergroup significance (Chi square - *p<0.01)

Table 5: Comparison Of General Parameters (Arousal, Foreplay, Excitement) Of Post Hysterectomy Sexual Function

Serial	Evaluated parameters	Group 1				Group 2			
		Always	Usually	Casually	Never	Always	Usually	Casually	Never
1.	Feeling of Sexual arousal	1(3.33%)	7(23.33%)	12(40.00%)	2(6.67%)	2(6.67%)	10(33.33%)	10(33.33%)	3(10.00%)
2.	Enjoyment in Foreplay	5 (16.67%)	7 (23.33%)	15 (50.00%)	3 (10.00%)	2 (6.67%)	14* (46.67%)	13 (43.33%)	1 (3.33%)
3.	Excitement during sexual activity	7(23.33%)	5 (16.67%)	13 (43.33%)	5 (16.67%)	2 (6.67%)	7 (23.33%)	19 (63.33%)	2 (6.67%)

Total Number of Participating Respondents in each country= 30; Intergroup Significance (Chi square - *p<0.05)

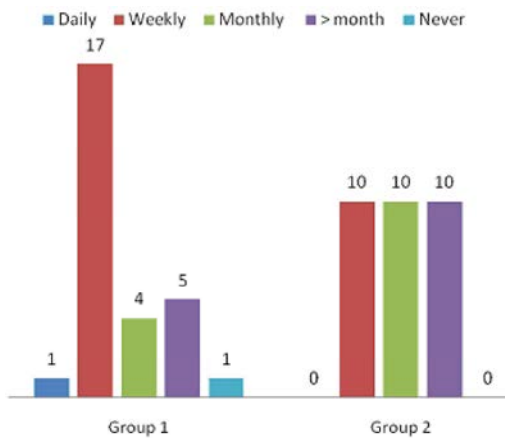


Fig. 3: Data on Comparative Post-Hysterectomy Desire to Sex From Left to Right denote daily, weekly, monthly, > month and never.

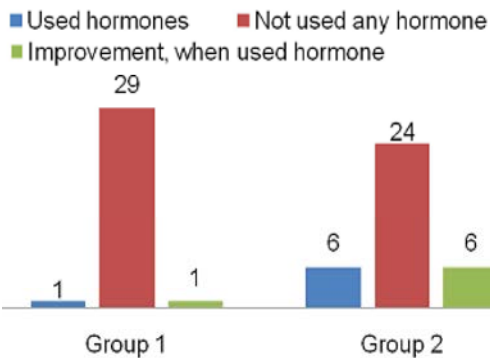


Fig. 4: Comparison of Post Hysterectomy use of hormones From Left to Right: (1) Used hormones, (2) Not used any hormones, (3) Improvement, when used hormone (Estrogen was the only hormone used)

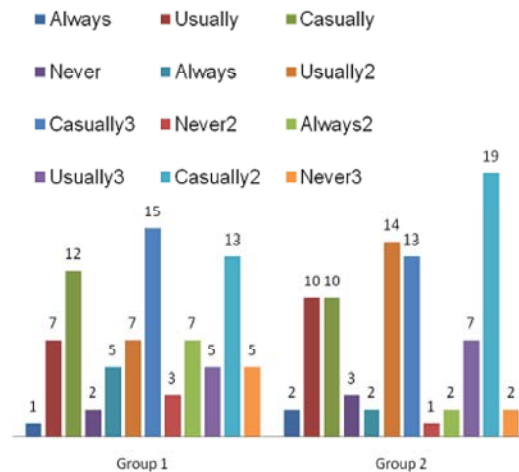


Fig. 5: Comparison of General parameters of Post Hysterectomy Sexual Function From Left to Right: Bars 1-4 = Feeling sexual arousal; Bars 5-8 = Foreplay; Bars 9-12 = Excitement during sexual activity

casually (group 1, 50.0%, group 2, 43.33%), Never (group 1, 10.0%, group 2, 3.33%). The excitement during sexual activity was observed, always (group 1, 23.33%, group 2, 6.67) usually (group 1, 16.67%, group 2, 23.33%) casually (group 1, 43.33%, group 2, 63.33%), Never (group 1, 16.67%, group 2, 6.67%). The sharp differences in the results were observed in the frequency of usual and casual for the three different markers. There were no intergroup differences except the marker on enjoyment in foreplay, which was statistically significant (p<0.05) in the usual frequency, as compared to group 1 (Table 5, Figure 5).

Table 6: Comparison Of General Parameters (dyspareunia, difficult orgasm) Of Post Hysterectomy Sexual Function

Serial	Evaluated parameters	Dyspareunia		Difficult to reach orgasm	
		Felt	Not felt	Felt	Not felt
1.	Group 1	6(20.00%)	24 [@] (80.00%)	7(23.33%)	23 [@] (76.67%)
2.	Group 2	8(26.67%)	22 [@] (73.33%)	10(33.33%)	20(66.67%)

Total Number of Participating Respondents in each country = 30; Intra marker significance (Chi square= [@]p<0.001)

Table 7: Comparison of Intensity of Post-Hysterectomy Orgasms

Country	Less intense	Same intensity	More intense
Group 1	19*(63.33%)	10(33.33%)	1(3.33%)
Group 2	8(26.67%)	19*(63.33%)	3(10.00%)

Total Number of Participating Respondents in each country = 30; Intergroup comparison (Chi square *p<0.01)

Table 8: Comparative Frequency of Intercourse on Post-Hysterectomy

Country	Once a week	Once a fortnight	Once more than a month
Group 1	6(20.00%)	15*(50.00%)	9(30.00%)
Group 2	3(10.00%)	16**(53.33%)	11**(36.67%)

Total Number of Participating Respondents in each country = 30; The intergroup differences are insignificant.

The intra marker differences are statistically significant at Chi square *p<0.01; **p<0.001

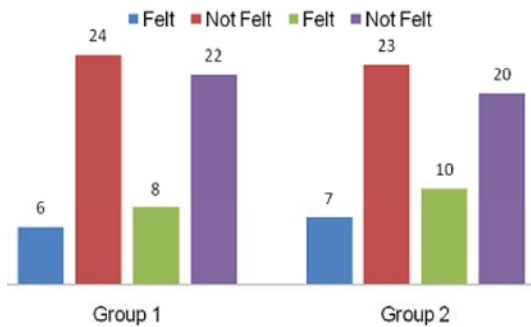


Fig. 6: Comparison Of General Parameters (dyspareunia, difficult orgasm) Of Post Hysterectomy Sexual Function From Left to Right:= Dyspareunia Bars 1 (felt), 2 (not felt) Difficult orgasm = Bars 3 (felt), 4 (not felt); Dyspareunia Bars 5 (felt), 6 (not felt) Difficult orgasm = Bars 7 (felt), 8 (not felt)

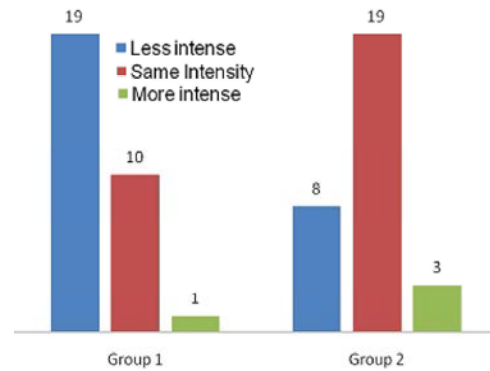


Fig. 7: Comparison of Intensity of Post-Hysterectomy Orgasms Left to Right: 1 and 4 = Less intense; 2 and 5 = Same intensity; 3 and 6 = More intense;

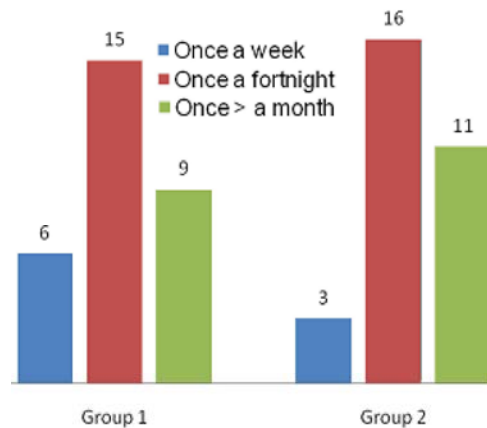


Fig. 8: Comparative Frequency of Intercourse on Post-Hysterectomy From Left to Right: 1 and 4 = Once a week; 2 and 5 = Once a fortnight; 3 and 6 = Once > a month

Dyspareunia, Difficulty to Reach Orgasm: Post hysterectomy dyspareunia was felt in group 1 (20.0%) and group 2 (26.67%), while majority in group 1 (80.0%) and group 2 (73.33%) did not feel the pain. The intra group differences were statistically significant in both the groups (p<0.001), while there were no significant intergroup differences (p>0.05). The difficulty to reach orgasm was felt in group 1 (23.33%) and group 2 (33.33%). The majority in group 1 (76.67%) and group 2 (66.67%) did not feel the difficulty to reach orgasm. The intra group differences in group 1 (p<0.001) and group 2 (p<0.01) were statistically significant, while the intergroup differences were statistically insignificant (p>0.05) (Table 6, Figure 6).

Intensity of Orgasms: The intensity of post hysterectomy orgasm was as follows: Less intense (group 1, 63.33%, group 2, 26.67%) same intensity (group 1, 33.33%, group 2, 63.33%) more intense (group 1, 3.33%, group 2, 10.00%). The sharp differences were as follows; in group 1, the frequency of less intense orgasms was significantly elevated ($p < 0.01$) and the frequency of same intensity was significantly higher in group 2 ($p < 0.01$). The difference was statistically insignificant ($p > 0.05$) (Table 7, Figure 7).

Frequency of Intercourse: The frequency of post hysterectomy intercourse was as follows: once a week (group 1, 20.0%, group 2, 10.0%) once a fortnight (group 1, 50.0%, group 2, 53.33%) more than a month (group 1, 30.00%, group 2, 36.67%). The sharp differences were the intra marker differences for once a fortnight in both the groups, which were statistically significant ($p < 0.01$, $p < 0.001$) as compared to once a week. The intra marker differences were also statistically significant ($p < 0.001$) for more than once a month as compared to once a week. The intergroup differences were statistically insignificant ($p > 0.01$) (Table 8, Figure 8).

DISCUSSION

There is a continuity and synchronization of different organs in the reproductive system to concede sexual function. Malfunction of any link is a cause of concern which demands treatment, the extreme of which is hysterectomy. The major organs of the system are cervix and the uterus, which are intimately associated with sexual activity. The uterus is shown to contribute the woman's self esteem, body image, confidence and sexuality [17]. The removal of uterus, alone, (sub-total hysterectomy) do not totally interfere with the sexual activity and/or increase in psychosexual morbidity [11], but the removal of both uterus and cervix (total hysterectomy) has been projected as critical and the removal of ovaries does mayhem. The uterus and cervix influence the excitement and plateau phase followed by uterine contractions involved in the development of orgasm [18], which depends on the stimulation of nerve endings of the utero vaginal (cervical) plexus, which is a matrix of afferent nerve fibers surrounding the cervix. The stimulation of cervix induces a pleasurable sensation, ultimately experienced as orgasm. Excision of the cervix that occurs during TAH results in the loss of a major portion of this plexus [19].

Most of the markers of study on sexual function in women are positively related with the reproductive health of their partners, hence the response to question on erectile dysfunction and/or premature ejaculation in men is very important. In the present study, the response to question on erectile dysfunction and/or premature ejaculation in men showed a higher proportion of respondents did not feel the problem, however; an element of weakness is expressed casually in both the groups. Although with marginal variations, this observation is very helpful to disregard any bias in parameters of sexual function. Nevertheless, most of the studies on sexual dysfunction in women and/or dysfunction related to post hysterectomy have never focused this aspect [13-15].

Post hysterectomy women often avoid sex due to bulging in vagina or emotional feelings, including disgust, shame or guilt. The results obtained in the present study revealed that respondents in both the groups tend to avoid sex due to either bulging in vagina and/or negative emotional feelings; however majority (50-70 per cent) never experienced these obstacles. The bulge in vagina is often a case with post vaginal hysterectomy infection and is of comparatively lesser incidence in TAH. Literature reports suggest presence of anaerobic micro organisms in vaginal ecology and improper hygiene might also promote such obstructions [20-22]. The operations which mutilate parts of the body or deprive some parts, have a deleterious impact on woman's self image and hence sexuality [23]. Although, there were no significant intergroup differences, the negative emotional feelings, were observed in both the groups.

On desire to sex, we observed that there were variations in the durations between the two groups, but these differences were not significant, except in group 2 (monthly group). Some in group 1 never had any desire to sex. The overall results suggest that the urge to sex is not seriously affected. Galyer *et al.*, [24] also showed no differences in sexual desire for gynecological versus non-gynecological surgery, or across the different types of hysterectomy. The positive indication of desire to sex in group 2 might be related to the intake of hormones, which was significantly more in group 2 [25]. Although, the use of hormones was comparatively more in group 2, majority of the respondents in both the groups did not use hormones. This is perhaps due to the fear of carcinogenic impact or the cost and availability of hormones [26].

The impact on arousal, fore-play and excitement was casually felt in both the groups, indicating a clear influence of hysterectomy. The negative feelings in sexual arousal, foreplay and excitement amounts to hypoactive sexual desire disorder and are related to the physiology of female sexual dysfunction [27]. The results obtained on these markers are in agreement with the observation of Meston [28], who found 4-40% sexual dysfunction after hysterectomy. This may happen due to damage of nerves in TAH, resulting into a total loss of pleasurable sensation. The excitement and the related episodes depends on the stimulation of nerve endings of the utero vaginal plexus, which is a matrix of afferent nerve fibers surrounding the cervix [19]. The impact on arousal, fore-play and excitement was casually felt in both the groups, but the intensity of the second marker was more intense in group 2.

Dyspareunia, the pain during coitus, is generally related to VH and not TAH. This may perhaps be, one of the reasons, why it was not felt by majority of the respondents in both groups. Abdelmonem [29] reported that the postoperative dyspareunia is more common after vaginal hysterectomy compared to abdominal hysterectomy. This was attributed to the post operative shortening of the vagina secondary to excessive trimming of vaginal walls. Difficulty to reach orgasm was felt by approximately 1/3 respondents in each group. This might be linked with the parameter on erectile dysfunction and premature ejaculation in some men as reported by respondents in both the groups [30].

The results on the intensity of orgasms show that this marker was not affected in both the groups, although, there were significant variations in the less intense (group 1) and same intensity (group 2). There were few instances of more intense orgasm after hysterectomy, especially in group 2, the difference was not significant. These results agree with the literature report [31] which found no significant influence of hysterectomy on the intensity of orgasms. The frequency of intercourse was reported to be affected as revealed by the delayed timing of sexual activity after hysterectomy. There were no intergroup differences. The overall results of frequency are considered to be weak, when weekly frequency of intercourse is considered. Although the present study did not involve the supra cervical hysterectomy cases for a comparison with the data of Saini *et al.*, [32], the worsening impact of TAH on frequency of intercourse is clearly demonstrated in the present study.

Taken together, the results of our study suggest that although, there is an obvious impact of hysterectomy, but it is not significantly gruesome. The comparison between the two countries revealed no significant variations

CONCLUSION

Hysterectomy is one of the most common gynecological operations performed to treat majority of the benign and malignant conditions in the reproductive system. Although, controversial, the major impact of hysterectomy is reported to be on sexual function. The different approaches and types of hysterectomy have been compared amply. Our study did not investigate the post hysterectomy sexual function, it also compared the experiences of post hysterectomy sexual function in respondents from two different countries (Bangladesh and Pakistan). The results of our study suggest that there is an obvious impact of hysterectomy, but it is not significantly gruesome. The comparison between the two countries revealed no significant variations indicating oneness in the findings of global literature on hysterectomy-related sexual dysfunction. It is recommended that more comparative studies are undertaken on different markers of the negative impact of hysterectomy, in order to analyze, if the progress in scientific literature is beyond any geographical limitation.

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