

Impact of Trauma on Marital Life

¹Tahir S.M., ²Asadullah Makhdoom, ³Shazia,
⁴Syed Asad Ali, ⁵Muhammad Qasim Rahopoto,
⁶Saadia Rasheed and ⁴Abdul Razaque Shaikh

¹Department of Burn Surgery,
²Department of Orthopaedic Surgery & Traumatology,
³Medical Research Centre, ⁴Department of Surgery,
⁵Department of Medicine, ⁶Department of Plastic Surgery,
Liaquat University of Medical & Health Sciences Jamshoro, Pakistan

Abstract: Currently improvement in intensive care throughout the world has resulted in improved survival of trauma victim and therefore paradigm has also shifted accordingly. The outcome, instead of mortality and morbidity, is now measured in term of “Activities of daily living” (ADLs) and “quality of life” (QoL). However most of the scoring systems that measure QoL do not adequately address sexual dysfunction. Therefore the issue has yet not been fully quantified; consequently it is still unresolved. In our part of the world problem is squared as sex is considered something that “SHOULD NEVER BE TALKED ABOUT”. The patients of orthopedic trauma and burn victims’ have many common features that includes prolong hospitalization, repeated surgical procedure, some residual morbidity and intensive rehabilitation; we therefore design this cross sectional study to investigate the sexual functions in these patients. We used translated version of two different questionnaires for male and female patients’. To evaluate erectile dysfunction in male, IIEF-5 questionnaire, which is an abbreviated version of the International Index of Erectile Function (IIEF) 17, was used. For sexual dysfunction in female we used modified Female Sexual Function Index (FSFI) that focuses sexual dysfunction. Patients who survive major orthopedic/burn trauma and successfully completed their rehabilitation phase were enroll for the study. During 30 months (July 2011 to Dec 2013) total 870 patients (318 female patients and 552 male patients) were interviewed. Among these 368 were Burn Survivors (210 male, 158 female), 252 sustained orthopedic (male 174, female 78), while 250 were control (male 168, Female 82). Data analysis was done using MedCalc version 12.5.0.0. Demographic variables presented as frequency, mean or proportion. The study groups were compared with controls using independent student t test. The level of statistical significance was taken as $p < 0.05$. Results showed marked reduction in sexual functions for both male and female of study groups. Male experienced predominately decreased libido and erectile dysfunction while female failed to find pleasure in sex. Although sexual dysfunction observed in control group, majority were satisfied with their sexual life ($SD \pm 1.24$). Only 11 patients were enjoying their sex life after incidence of trauma as it was before the incidence. In conclusions, Sex is fundamental right of all humans. Therefore sexual dysfunction may lead to psychosocial problems with all its attendant risks and hazards. NGOs come forward to offer prolong sexual functions surveillance of all trauma survivors if we have to return useful person to the society.

Key words: Sexual dysfunction • Trauma victim • Marital life

INTRODUCTION

Currently improvement in intensive care throughout the world has resulted in improved survival of trauma victim and therefore paradigm has also shifted accordingly. The outcome, instead of mortality and morbidity, is now measured in term of “Activities of daily living” (ADLs) and “quality of life” (QoL) [1, 2]. However most of the scoring system that measures’ QoL do not adequately address “sexual function”[3]. Therefore issue of sexual problem has yet not been fully quantified; consequently it is impossible to estimate the true prevalence of this issue in trauma victims. This could be due to the lack of appropriate definition of sexual function, measurement tools and most important to get information relevant to sexual life.

Recently it has been shown that 80% of male patients who reported very much satisfied before spinal cord injury, their number fell to 47.5% in post lesion period [4]. Paul Kettl conducted similar study with female patients and reported that after spinal cord injury 49% patients’ were not satisfied with their sexual life [5]. More importantly he also reported that 52% female rated their bodies as “being only half as attractive after their injury as before”. This change in body image could also be important factor to make sexual life dissatisfied. Ponsford J[6] and Kreuter M et al.[7]has investigated changes in sexual functioning after traumatic brain injury; and reported that more than 50% patients after traumatic brain injury, in some way, were dissatisfied with sexual life.

So far various studies has been done to assess QoL after Burns and orthopaedic trauma however little research is conducted to identify problem of sexual function after burn [8] and orthopaedic trauma. Many studies reported that burn injuries lead to change in body image which leads to significant negative impact on sexual function of burn survivors making rehabilitation of these patients a more difficult task [9].

The patients of orthopedic trauma and burn victims’ have many common features that includes prolong hospitalization, repeated surgical procedure, some residual morbidity and intensive rehabilitation; the objective of this study is therefore to investigate the sexual functions in these patients after recovery and rehabilitation.

MATERIALS AND METHODS

Patients: The adult married patients aged between 16-50 years who survive major orthopaedic/burn trauma and successfully completed their rehabilitation phase

were enroll for the study. Patients having previous history of some sexual disorder, taking antipsychotic medication, known case of Diabetes, Systemic Hypertension were excluded from the study. Survivor having history of pelvic bone fracture or burns involving perineal area was excluded from the study. To serve as control, ill patients with no history of hospitalization/ trauma were also interviewed. These were from outpatient department of the hospital attending surgical/medical OPDs of the hospital. Patients were recruited after their informed consent with reassurance that their identity will never be disclosed at any stage and what they report will be used only for research purpose and will not be communicated to their family members.

Study Design: Cross sectional questionnaires based study.

Duration of Study: 30 months from July 2011 to Dec 2013.

Setting: Department of Orthopedics and Traumatology and Department of Burns Liaquat University of Medical & Health Sciences’ Jamshoro.

Data Collection Tools: We used translated versions (Urdu/Sindhi) of two different questionnaires for male and female patients’. To evaluate erectile dysfunction in male, IIEF-5 questionnaire, which is an abbreviated version of the International Index of Erectile Function (IIEF), [10] was used. It has a maximum score of 25. With cutoff < 22 points, IIEF-5 has a sensitivity of 98% and specificity of 88% [11]. Score above 22 is considered as normal without any erectile dysfunction while score of 5-7 is considered severe erectile dysfunction [12] (annexure I).

For sexual dysfunction in female we used modified Female Sexual Function Index (FSFI). Originally FSFI is a 19-item questionnaire developed by R.Rosen[13]; that assesses sexual desire, arousal, lubrication, orgasm, satisfaction and pain; that has been validated in many studies [12,14]. Very recently Gerstenberger EP [15] validated sexual desire domain of FSFI and showed that it has sensitivity of 75.5% and specificity of 83.5% and therefore very adequate to identify women having sexual dysfunction. As objective is to identify prevalence of sexual dysfunction after trauma, therefore only sexual dysfunction domain of FSFI was used (annexure II).

Data Collection Procedure: Each patient was interview separately and in complete privacy. Those literate were given questionnaire to mark answers as applicable, while illiterate did helped by asking questions from the

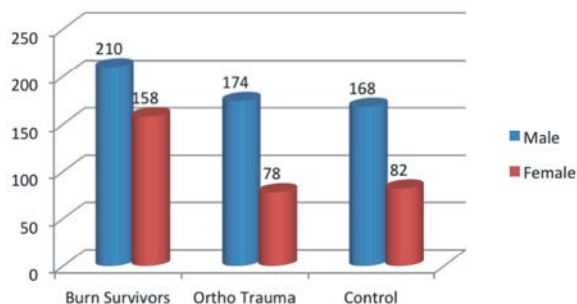
questionnaire and response marked. To get most appropriate answers from female patients, these were interviewed by female investigator.

Definition: As biological, psychological, sociological, spiritual and cultural factors play important role for the development of interpersonal sexual relationship, the definition of sexual health is defined diversely by different organizations. For this study we used working definition of sexuality as proposed by World Health Organization, which states that “Sexual health is a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity”. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled.

Data Analysis: Data analysis was done using MedCalc version 12.5.0.0. Demographic variables presented as Frequency, mean or proportion. To know the difference between groups independent t test was used. The level of statistical significance was taken as $p < 0.05$.

RESULTS

During period of study total 870 patients (318 female patients and 552 male patients) were interviewed. Among these 620 patients were study subjects with history of orthopedic/burn trauma while 250 were control. Study group comprises of 368 patients recovered after Burns and 252 from orthopedic trauma. Among 368 female patients those with history of Burn were 158, orthopedic trauma were 78 and those without any trauma were 82. Among 552 males, burn survivors were 210 and those recovered after orthopedic trauma was 174 and control male were 168. Graphical presentation of sex distribution is shown in table no 1.



Mean duration of marriage was 4.6 years ranging from 10 months to 17 years at the time of incidence. Mean age of male from control group was 31.41 years with range of 20-48 years, mean age of male burn survivor was 29.51 years ranging from 20-48 years, while age range of male patients who sustained orthopedic trauma was 18-48 years (mean= 31.55). The mean age of female patients having no history of hospitalization/trauma was 29.49 years ranging from 17-47 years, age range of female who survive burn trauma was 19-47 years (mean 29.35 years) and those had orthopedic trauma were between 22-46 years of age (mean 31.59). The IIEF-5 score of three groups is shown in table 1. In all three groups the highest score reported was 25, while minimum score was 19 for male of control group, for burn survivor it was 5 and among ortho trauma victim it was 8.

IIEF-5 Score	Minimum	Maximum	Mean	SD±	Variance
Control (n=168)	19	25	23.02	1.492	2.227
Burn Survivor(n=210)	5	25	16.51	4.442	19.734
Ortho trauma (n=174)	8	25	18.07	3.386	14.712

The maximum FSFI score for female from three different groups was 10; however minimum score was 5 for controls while it was 2 for both ortho trauma victims' and burn survivors'. Variability of the FSFI score with SD± among three groups is shown in table no 2.

FSFI Score	Minimum	Maximum	Mean	SD±	Variance
Control (n=82)	5	10	7.96	1.242	1.542
Burn Survivor(n=158)	2	10	5.46	2.049	4.199
Ortho trauma (n=78)	2	10	6.14	1.985	1.985

The mean IIEF score of control male when compared with mean score of male burn survivor and ortho trauma victim, results were statistically highly significant as shown in table no 3

IIEF-5 Score	Minimum	Maximum	Mean	DF	P value*
Control (n=168)	19	25	23.02		
Burn Survivor(n=210)	5	25	16.51	376	<0.0001
Ortho trauma (n=174)	8	25	18.07	340	<0.0001

*Independent t-test

The mean FSSI score of control female compared with female burn survivor and ortho trauma victims' were also statistically significant, results are shown in table no 4.

FSFI Score	Minimum	Maximum	Mean	DF	P value*
Control (n=82)	5	10	7.96		
Burn Survivor(n=158)	2	10	5.46	238	<0.0001
Ortho trauma (n=78)	2	10	6.14	158	<0.0001

* Independent t-test

DISCUSSION

Sex interplay is a complex process involving hormonal, neurological and vascular systems to play vital role and therefore it is probably not surprising to see sexual dysfunction not only among those having illness but also among general population. The well recognized clinical conditions where SD may have some organic explanation includes depression, cardiovascular disease, diabetes mellitus [16-20], carcinoma breast [21] and multiple sclerosis[22].

The results of this study showed that some degree of sexual dysfunction (SD) is presents among those having some illness (Male SD± 1.492 Female SD±1.242), but the patients with history of burn/orthopedic trauma has severe SD (Male SD± 4.442/3.386 resp, Female SD± 2.049, 1.985 resp). SD found more pronounced in male patients as compare to female. Among this series of patients only 11 cases reported that they do not have any SD and enjoying life as it was before the incidence. Among these 7 (5 female & 2 male) were with history of orthopedic trauma and 4 (3 female & 1 male) were burn survivors. In current study male were more severely affected than female which is in quite contrast to the study of Lewis RW *et al* [23] who showed that 40-45% of adult women and 20-30% of adult men from general population have at least one episode of sexual dysfunction in their life. Results of this study are also in sharp contrast to the study of Nafiu Amidu *et al* [24] who reported sexual dysfunction in 70% of sexually active Ghanaian women. This could be due to the fact that Nafiu Amidu *et al* enrolled only female in their study. The female reported less SD as compared to male in this series of the patients has two probable explanations. Firstly females in our part of the world considered themselves just to procreate and therefore pay little attention to sexual satisfaction. Secondly to discuss sex is consider a taboo; all female of current study although interviewed by Female Lady Doctor, yet they might be uncomfortable while discussing sex.

There may be various determinate of SD after trauma; briefly these may biological, psychological, social and change body image. Some medication during management of trauma victims' may altered their hormonal levels that may lead to SD, among psychological factors anxiety, loss of self-esteem with resultant anxiety and depression is considered to be the major contributory factor [25]. Social factors include decreased income and more expenditure to meet the expenses during hospitalization. Change body image is also considered important factor particularly with

burn survivor with ugly scars, which may be unpleasing to the partner.

Limitations of the Study: We used questionnaires as diagnostic tools, as most of our patients were illiterates therefore it is probable that understanding, explanation of these questionnaires may be a problem that might have affected accuracy of the response by the patients.

CONCLUSION

The prevalence of sexual dysfunction amongst trauma patients is alarmingly high. Each patients of trauma must be managed by Holistic approach rather than managing the trauma only. We therefore recommend that each victim of trauma must be under prolong, strict psychological surveillance, if really want to improve quality of life of these patients.

Declarations:

Funding: No any funding source

Conflict of interest: No any conflict of interest between authors

Ethical approval: no any ethical issue was found

REFERENCES

1. Wallis, H., B. Renneberg, S. Ripper, G. Germann, G. Wind and A. Jester, 2006. Emotional distress and psychosocial resources in patients recovering from severe burn injury. *J Burn Care Res.*, 27: 734-41.
2. Bianchi, T.L., 1997. Aspects of sexuality after burn injury: outcomes in men. *J Burn Care Rehabil.*, 18: 183-6.
3. Tøien, K., I.S. Bredal, L. Skogstad, H. Myhren and O. Ekeberg, 2011. Health related quality of life in trauma patients. Data from a one-year follow up study compared with the general population. *Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine*, 19: 22.
4. Phelps, J, M. Albo, K. Dunn and A. Joseph, 2001. Spinal cord injury and sexuality in married or partnered men: Activities, function, needs and predictors of sexual adjustment. *Arch Sex Behav.*, 30: 591-602.
5. Paul Kettl, Sue Zarefoss, Kevin Jacoby, Christine Garman, Cindy Hulse, Fran Rowley, Robin Corey, Michelle Sredy, Edward Bixler and Kathy Tyson, 1991. Female sexuality after spinal cord injury". *Sexuality and Disability*; 9(4): 287-295.

6. Ponsford, J., 2003. Sexual changes associated with traumatic brain injury. *Neuropsychol Rehabil.* 13(1-2): 275-89.
7. Kreuter, M., A.G. Dahllöf, G. Gudjonsson, M. Sullivan and A. Siösteen, 1998. Sexual adjustment and its predictors after traumatic brain injury. *Brain Inj.* May; 12(5): 349-68.
8. Connell, K.M., R. Coates and F.M. Wood, 2014. Sexuality following trauma injury: A literature review. *Burn Trauma*, 2: 61-70.
9. Connell, KM., R. Coates and F.M. Wood 2013. Sexuality following burn injuries: A preliminary study. *J Burn Care Res.*, 34(5): e282-9.
10. Rosen, R.C., A. Riley, G. Wagner, I.H. Osterloh, J. Kirkpatrick and A. Mishra, 1997. The international index of erectile function (IIEF): a multidimensional scale for assessment of erectile dysfunction. *Urology*, 49: 822-30.
11. Rosen, R.C., J.C. Cappelleri, M.D. Smith, J. Lipsky and B.M. Pena, 1999. Development and evaluation of an abridged, 5-item version of the International Index of Erectile Function (IIEF-5) as a diagnostic tool for erectile dysfunction. *Int J Impot Res.*, 11: 319-26.
12. Rosen, R., C. Brown, J. Heiman, S. Leiblum, C. Meston, R. Shabsigh, D. Ferguson and R. D'Agostino, 2000. The Female Sexual Function Index (FSFI): A Multidimensional Self-Report Instrument for the Assessment of Female Sexual Function, *Journal of Sex & Marital Therapy*, 26(2): 191-208.
13. Meston, C.M., 2003. Validation of the Female Sexual Function Index (FSFI) in women with female orgasmic disorder and in women with hypoactive sexual desire disorder. *Journal of Sex & Marital Therapy*, 29: 39-46.
14. Wiegel, M., C. Meston and R. Rosen, 2005. The Female Sexual Function Index (FSFI): Cross-validation and development of clinical cutoff scores. *Journal of Sex & Marital Therapy*, 31: 1-20.
15. Gerstenberger, E.P., R.C. Rosen, J.V. Brewer, C.M. Meston, L.A. Brotto, M. Wiegel and M.S. and 2010. Sexual desire and the female sexual function index (FSFI): a sexual desire cut point for clinical interpretation of the FSFI in women with and without hypoactive sexual desire disorder. *J Sex Med.*, 7(9): 3096-103.
16. Cyranowski, J. M., J. Bromberger, A. Youk, K. Matthews, H.M. Kravitz and L.H. Powell, 2004. Lifetime depression history and sexual function in women at midlife. *Arch. Sex. Behav.* 33:539-548. doi: 10.1023/B:ASEB.0000044738.84813.3b.
17. Angst, J., 1998. Sexual problems in healthy and depressed persons. *Int. Clin. Psychopharmacol.* 13(suppl 6):S1-S4. doi: 10.1097/00004850-199807006-00001.
18. Schwarz, E.R., S. Rastogi, V. Kapur, N. Sulemanjee and J.J. Rodriguez, 2006. Erectile dysfunction in heart failure patients. *J. Am. Coll. Cardiol.* 48(6): 1111-1119. doi: 10.1016/j.jacc.2006.05.052.
19. Billups, K.L., 2005. Sexual dysfunction and cardiovascular disease: integrative concepts and strategies. *Am. J. Cardiol*, 96(Suppl 12B), 57 M-61 M. (2005) doi: 10.1016/j.amjcard. 10.007.
20. Schiel, R. and U.A. Muller, 1999. Prevalence of sexual disorders in a selection-free diabetic population (JEVIN) *Diabetes Res. Clin. Pract.* 44: 115-121. doi: 10.1016/S0168-8227(99)00012-1.
21. Safarinejad, M.R., N. Shafiei and S. Safarinejad, 2013. Quality of life and sexual functioning in young women with early-stage breast cancer 1 year after lumpectomy. *Psychooncology.* Jun; 22(6):1242-8. doi: 10.1002/pon.3130. Epub 2012 Jul 9.
22. Lew-Starowicz, M. and R.Rola, 2014. Correlates of Sexual Function in Male and Female Patients with Multiple Sclerosis. *J Sex Med.* Jun 26. doi: 10.1111/jsm.12622. [Epub ahead of print]
23. Lewis RW., K.S. Fugl-Meyer, R. Bosch, A.R. Fugl-Meyer, E.O. Laumann, E. Lizza and A. Martin-Morales, 2004. Epidemiology/risk factors of sexual dysfunction. *J Sex Med.*, 1(1): 35-9.
24. Nafiu Amidu, William KBA Owiredu, Eric Woode, Otchere Addai-Mensah, Lawrence Quaye, Abass Alhassan, Edmond A Tagoe., 2010. Incidence of sexual dysfunction: a prospective survey in Ghanaian females. *Reprod Biol Endocrinol.* 8: 106. doi:10.1186/1477-7827-8-106
25. Unadike, B.C., A. Eregie and A.E. Ohwovoriole, 2009. Prevalence and types of sexual dysfunction amongst female with diabetes mellitus. *Pak J. Med. Sci.*, 25(2): 257-260.