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PATIENTS' EMOTIONAL HEALTH PLAYS AN IMPORTANT ROLE IN FUNCTIONAL RESULTS- A CROSS SECTIONAL STUDY

Orthopaedics

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ABSTRACT

AIM AND OBJECTIVE- 1) The primary outcome was pain intensity within two months after surgery. 2) Secondary outcomes were impairment in daily function, social, working life quality, and psychological distress (depression, anxiety, and somatic pain) after orthopaedic surgery.

MATERIAL & METHODS- Patents who had undergone orthopaedic surgery, and who were referred for psychogenic pain, depressive, anxiety and behaviour difficulties in N.K.P. Salve Institute of Medical Sciences & Lata Mangeshkar Hospital and Research Centre Nagpur (Maharashtra) were included in the study (N=82). Cross sectional study (Questionnaire Based Study), between August 2018 – March 2019.

RESULT – Muscular tension male 5.56 ± SD 2.462 and female 7.59 ± SD 1.542 and t value is -4.513, and mean score shows female gender face more difficulties in muscular tension as compare to male gender , Psychic Anxiety male 6.22 ± SD 2.196 and female 5.09 ± SD 2.248 and t value is 2.521 and mean score shows male gender face more difficulties in psychic anxiety as compare to female gender, Detachment male 5.72 ± SD 2.303 and female 3.47 ± SD 2.016 and t value is 4.281 and mean score shows male gender face more difficulties in detachment as compare to female gender, Social Desirability male 4.88 ± SD 1.879 and female 6.53 ± SD 1.722 and t value is -3.401 and mean score shows female gender face more difficulties in social desirability as compare to male gender, and Verbal Aggression male 3.41 ± SD .979 and female 2.91 ± SD 1.058 and t value is 2.374 and mean score shows male gender face more difficulties in verbal aggression as compare to female gender, is statistically significant at the level of <0.05 level.

CONCLUSION- Present study shows large numbers of patients with poor emotional health reported no improvement in the physical component. This study shows poor emotional health score was associated with significantly greater trait somatic anxiety, muscular tension, psychic anxiety, detachment, social desirability, verbal aggression (i.e., a predisposition to react with anxiety in stressful situations) and depression, and poorer social support and coping skills.

KEYWORDS

Pain Assessment and Documentation Tool, Self-report assessment of personality traits, counselling and psychology therapy

INTRODUCTION

Experiencing anxiety, frustration, depression and somatic pain after surgery is common. Having less than perfect health, plus other worries like financial, social economic status, and many other things triggers feelings of hopelessness or despair. One common factor with depression and anxiety symptoms throughout the entire process maybe the high stress levels people experience. This includes physical, mental, family and emotional stress.

Any disorder that causes a person to feel pain can be a source of physical stress. Orthopaedic surgery by itself is also a cause of physical stress. Being diagnosed with a serious illness can lead to emotional and mental stress. Trying to balance work, social, and personal life during the process may add to that stress. The whole process can take its toll on a person's mental health. These feelings may stay with them after orthopaedic surgery, if they are not properly dealt with.

The link between patients' emotional status and outcomes has been highlighted in orthopaedic areas such as spine, trauma, sports medicine, joint reconstruction and upper extremity surgery. “Patients with lower emotional health have a greater risk of less functional improvement after surgery,”.

Task force on taxonomy of the International Association for the Study of Pain (IASP) says that pain is “An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.” (Burket LW wt.al)

Pain is one of the most common complaints made by patients, yet in some circumstances, pain is treated inadequately. Patients recovering from minor or major orthopaedic and trauma surgery are among those who historically have experienced analgesic under administration and inadequate pain relief like-

- Non-Nociceptive pain- A chronic pain caused by dysfunction of either peripheral or central nervous system.
- Neuropathic Pain- Is characterized by sudden seizure like pain which lasts from a few seconds up to several minutes, either intermittent or constant, along with the sensations of burning, twisting , tearing, crushing-at first in the damaged area, then in a wider area, with lower intensity-tingling or stabbing paraesthesia, the feeling of heaviness and numbness.
- Psychogenic pain –the second kind of non-nociceptive pain, appears despite no tissue damage, but is reported by the patients in the same ways as pain caused by tissue damage. It is caused by cognitive, emotional, personal and social factors related to depression , delusional, somatic pain, phantom pain etc.

Classification due to the kind of pain causing nociceptive stimuli –

- Physiological pain: with the nociceptors being activated (no tissue damage involved).
- Clinical pain- The consequence of damage to the tissues, it is characteristic for the post-surgery and post injury pain.

Particularly for orthopaedic procedures, which are typically performed for a pre-existing painful condition, the distinction between pre-existing and chronic postoperative pain complicates a clear differentiation. Nevertheless, chronic or persistent postoperative pain also affects a relevant proportion of orthopaedic patients. Such persistent pain is likely to have a relevant impact on the patient's activities of daily life and their quality of life, which is a serious matter of suffering in addition to pain. (Gerbershagen HJ, Ozgur E, Straub K, et al 2008, Bruce J, Krukowski ZH 2006, Jorgensen LN, Jacobsen B, Friis-Andersen HU, Rosenberg J. Pain 2009.)

AIM AND OBJECTIVE-

The aim of this prospective Cross sectional study (Questionnaire Based Study), was to investigate the prevalence of persistent pain after orthopaedic surgery and its impact on patient's quality of life after surgery.

- The primary outcome was pain intensity within two months after surgery.
- Secondary outcomes were impairment in daily function, social, working life quality, and psychological distress (depression, anxiety, and somatic pain) after orthopaedic surgery.

MATERIAL & METHODS:

Place of Study: This study was conducted at central India at Nagpur (Maharashtra)

Period of Study: August 2018 – March 2019 (seven months)

INCLUSION CATEGORY

- Patients who underwent orthopaedic surgery in the group 25- 40 years.
- Patents who had undergone an orthopaedic surgery, and who were referred for psychogenic pain, depressive, anxiety and behaviour difficulties.

EXCLUSION

- Patients who underwent orthopaedic surgery in the group below 24 years

SAMPLE SIZE: Patents who had undergone orthopaedic surgery, and who were referred for psychogenic pain, depressive, anxiety and behaviour difficulties in Nagpur (Maharashtra) were included in the study (N=82).

Study Design: Cross sectional study (Questionnaire Based Study), between August 2018 – March 2019 (seven months). They were screened for potential inclusion in the study. Thirty-one patients refused to sign the informed consent. Forty-four patients were lost to follow-up; they did not visit the hospital and could not be contacted *via* phone. Therefore, 82 patients available for at least 2 months of postoperative follow-up were selected for the retrospective analysis of imaging data and medical records.

PROCEDURE OF DATA COLLECTION

For collection of data from N.K.P. Salve *Institute* of Medical Sciences & *Lata Mangeshkar Hospital and Research* Centre Nagpur was chosen. By keeping age and gender requirements in mind the subjects were selected more than the required then the test of Pain Assessment and Documentation Tool and Self-report assessment of personality traits, the needed 82 subjects have been selected randomly from different Social economic background. First of all, checklist of trails was administered on the subjects to get their original viewpoint. Each subject took around 1hour to respond on the entire above tools. A period of seven months was devoted for the data collection and follow-up.

MEASURING INSTRUMENTS-

Pain Assessment and Documentation Tool- The Pain Assessment and Documentation Tool (PADT) is a two-sided chart note designed to be easily included in a patient's medical record and to facilitate ongoing evaluation of patient pain and documentation of pain management. The PADT is intended to be administered by a clinician and includes sections to assess pain-related outcomes in four areas: analgesia, activities of daily living, adverse events (i.e., side effects), and aberrant drug-related behaviour.

Self-report assessment of personality traits -Britt Af Klinteberg, Daisy Schalling, David Magnusson- Self-report personality inventories are standardized yardsticks for quantifying individual differences in habitual overt behaviour, preferences, cognitive style and situational reactivity. Inventories have been criticized on many grounds - e g fakability of response, influence of response styles, lack of insight about one's own motives and emotions, differing dimensionality obtained with different instruments. Areas are:

• Impulsiveness	• Inhibition of Aggression
• Monotony Avoidance	• Social Desirability
• Socialization	• Indirect Aggression
• Somatic Anxiety	• Verbal Aggression
• Muscular Tension	• Irritability (Factor Aggression)
• Psychic Anxiety	• Suspicion (Factor Hostility)
• Psychasthenia	• Guilt (Factor Hostility)
• Detachment	

STATISTICAL TECHNIQUES USED:

The obtained data will be statistically analysed by applying descriptive (Average, percentile, mean, standard deviation, and paired t-test) of significance of mean differences in term of various variable. We will enter all data and further Statistical Analysis will be done with the help of IBM- SPSS-25 software.

RESULTS

The characteristics of the sample are presented in Table 1. Total 64 patients participate in this study emotional health after orthopaedic surgery 32 Male and 32 female. Patients between the age ranges of 21-50 years. Social economic status 19 (30%) patents 28% male and 31% female from belong to low social economic status, 35 (55%) patents 53% male and 56% female from medium social economic status, and 10 (16%) patents 19% male and 13% female from high economic status. 41 (26%) patients 38% male and 44% female stay in a joint family and 38 (59%) patients 63% male and 56% stay in nuclear family. Around 15 (23%) patients male 31% and female 16% from 10^{th} and 12^{th} passed, graduate passed 14 (22%) patients 19% male and 25% female ,post graduate 24 (53%) patients 34% male and 41% female and other educational background around 11 (17%) patients 16% male and 19% female .

Table- 1- Demography Profile Of Patients Emotional Health After Orthopaedic Surgery

AREAS	MALE	FEMALE	TOTAL COUNT
Gender	32	32	64
Age Range			
21-30 Years	8 (25%)	10 (31%)	18 (28%)
31- 40 Years	15 (46%)	14 (44%)	29 (45%)
41-50 Years	9 (28%)	8 (25%)	17 (27%)
Social Economic Status			
Low	9 (28%)	10 (31%)	19 (30%)
Medium	17 (53%)	18 (56%)	35 (55%)
High	6 (19%)	4 (13%)	10 (16%)
Family Type			
Joint	12 (38%)	14 (44%)	26 (41%)
Nuclear	20 (63%)	18 (56%)	38 (59%)
Patients Educational Background			
10th and 12th	10 (31%)	5 (16%)	15 (23%)
Graduate	6 (19%)	8 (25%)	14 (22%)
Post Graduate	11 (34%)	13 (41%)	24 (53%)
Other	5 (16%)	6 (19%)	11 (17%)

Table. 2 – Counts And Percentages Of Patents (duration) Pain After Orthopaedic Surgery

Duration of Pain	More than 6 Months	1- 2 years	2-3 Years	4 years and above
Male	9 (28%)	7 (22%)	15 (47%)	1 (3%)
Female	11 (34%)	9 (28%)	9 (28%)	3 (9%)

Table No.3- Counts And Percentages Of Patents Changes In Lifestyle Issues

Gender	Physical	Family Relationship	Social Relationship	Mood	Sleep
Male	29 (91%)	8 (25%)	28 (88%)	19 (59%)	24 (75%)
Female	32 (100%)	12 (38%)	9 (28%)	10 (31%)	26 (81%)

Present study shows Poor physical function, and greater pain was associated with lower patient satisfaction, resent study around 29 (91%) male and 32 (100%) female reported poor physical function after orthopaedic surgery.

Family relationship there are intrapersonal changes and a new lifestyle regime are patient's issues, around 8 (25%) male and 12 (38%) female are facing family issues however, the whole family undergoes unexpected change. Examples of unexpected change are an altered physical appearance and possible orthopaedic surgery side effects (Nausea 6% male 25% female, Vomiting 6% male 44% female, Constipation 47% male 28% female, Itching 72% male 19% female, Mental 56% male 69% female, Sweating 40% male 22% female, Fatigue 28% male 3% female, Drowsiness 84% male 75% female).

TABLE NO. 4 - COUNTS AND PERCENTAGES OF PATENTS ORTHOPAEDIC SURGERY SIDE EFFECTS

Gender/ Areas	Nausea	Vomiting	Constipation	Itching	Mental	Sweating	Fatigue	Drowsiness
Male	2 (6%)	2 (6%)	15 (47%)	23 (72%)	18 (56%)	13 (40%)	9 (28%)	27 (84%)
Female	8 (25%)	14 (44%)	9 (28%)	19 (59%)	22 (69%)	7 (22%)	1 (3%)	24 (75%)

Changes that also affect the whole family could be psychological and may include mood swings (e.g., a short temper, frustration, sadness and tearfulness), being more assertive and energetic, and perceiving a higher degree of acceptance from others. These changes affect health, wellbeing, and low interactions between family (e.g., communication patterns, habits and routines within the family). In Watzlawick et al., 1974 study found change requires giving up familiar routines and can affect family members' roles and standing. Mayberry & Osborn, 2014; Rosland, Heisler, & Piette, 2012) noted - Families' involvement and negative expression of support can be obstructive, depending on the relationship quality and conflict resolution abilities.

In the present study around 28 (88%) male and 9 (28%) female lack of social support had poor orthopaedic surgery outcomes. like- they don't enjoying the social activities, feeling fear , feel lack of energy, and feel that something bad is going to happen etc., social support has also been found to negatively influence outcomes after orthopaedic surgery if the family member excessively reinforces the pain- Block AR, et.al. (2001) or the patient overly relies on available support Junge A et.al. (1996). Only one study was found that examined social support as a predictor of the surgical outcome of patients undergoing spinal surgery - Sorensen LV, Mors O, Skovlund O.(1987).

Patients often develop significant mood and sleep disturbances after surgery. Present study shows 19 (59%) male and 10 (31%) female having mood disturbance and 24 (75%) male and 26 (81%) female complained about sleep Patten being disturbed after orthopaedic surgery ,patients reported decreased sleep time, increased numbers of arousals or awakening, lowered sleep quality, and frequent nightmares Polysomnographic manifestations usually include severe sleep deprivation, sleep fragmentation, and decrease or loss of SWS and REM sleep during the night after surgery - Knill RL et.al. (1990), Rosenberg-Adamsen S. et.al. (1996).

Table no. 5. On the basis of response 12 (38%) male and 13 (41%) female having severe pain after orthopaedic surgery, moderate pain around 13 (41%) male and 14 (44%) female , and 7 (22%) male and 5 (16%) female having mild pain after orthopaedic surgery. As compare to male patients female patients having more psychological pain after orthopaedic surgery.

Table No. 5- Counts And Percentages Of Patents Level Of Pain

Gender/ Areas	Mild	Moderate	Severe
Male	7 (22%)	13 (41%)	12 (38%)
Female	5 (16%)	14 (44%)	13 (41%)

Table No. 6. Mean And Sd Of Male And Female Self-repot On Personality Traits Along With Their Statistical Significance Of Difference Between Mean

Paired Samples Statistics						
			Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Impulsiveness	Male	6.41	32	1.965	.347
		Female	6.63	32	1.540	.272
Pair 2	Monotony Avoidance	Male	6.19	32	1.908	.337
		Female	5.72	32	2.174	.384
Pair 3	Socialization	Male	11.44	32	3.843	.679
		Female	12.19	32	2.822	.499
Pair 4	Somatic Anxiety	Male	8.75	32	.880	.156
		Female	8.91	32	.928	.164
Pair 5	Muscular	Male	5.56	32	2.462	.435
		Female	7.59	32	1.542	.273
Pair 6	Psychic Anxiety	Male	6.22	32	2.196	.388
		Female	5.09	32	2.248	.397
Pair 7	Psych-Asthenia	Male	5.56	32	2.257	.399
		Female	5.75	32	1.368	.242
Pair 8	Detachment	Male	5.72	32	2.303	.407
		Female	3.47	32	2.016	.356
Pair 9	Inhibition of Aggression	Male	6.59	32	2.123	.375
		Female	6.53	32	1.606	.284
Pair 10	Social Desirability	Male	4.88	32	1.879	.332
		Female	6.53	32	1.722	.304
Pair 11	Indirect Aggression	Male	3.50	32	1.244	.220
		Female	3.38	32	.942	.166
Pair 12	Verbal Aggression	Male	3.41	32	.979	.173
		Female	2.91	32	1.058	.187
Pair 13	Irritability (factor Aggression)	Male	3.06	32	1.162	.205
		Female	2.81	32	.896	.158
Pair 14	Suspicion (factor Hostility)	Male	3.25	32	1.136	.201
		Female	3.06	32	1.216	.215
Pair 15	Guilt (factor Hostility)	Male	3.06	32	.982	.174
		Female	2.94	32	1.190	.210

Paired Samples Test									
	Paired Differences						t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
				Lower	Upper				
Pair 1	**Impulsiveness – Male/Female**	-.219	2.338	.413	-1.062	.624	-.529	31	.600
Pair 2	**Monotony Avoidance - Male/Female**	.469	3.182	.563	-.679	1.616	.833	31	.411
Pair 3	**Socialization - Male/Female**	-.750	4.355	.770	-2.320	.820	-.974	31	.338
Pair 4	**Somatic Anxiety - Male/Female**	-.156	1.051	.186	-.535	.223	-.841	31	.407
Pair 5	**Muscular - Male/Female**	-2.031	2.546	.450	-2.949	-1.113	-4.513	31	.000
Pair 6	**Psychic Anxiety - Male/Female**	1.125	2.524	.446	.215	2.035	2.521	31	.017
Pair 7	**Psych-Asthenia - Male/Female**	-.188	2.833	.501	-1.209	.834	-.374	31	.711
Pair 8	**Detachment - Male/Female**	2.250	2.973	.526	1.178	3.322	4.281	31	.000
Pair 9	**Inhibition of Aggression - Male/Female**	.063	2.816	.498	-.953	1.078	.126	31	.901
Pair 10	**Social Desirability - Male/Female**	-1.656	2.755	.487	-2.649	-.663	-3.401	31	.002
Pair 11	**Indirect Aggression - Male/Female**	.125	1.497	.265	-.415	.665	.472	31	.640

Pair 12	**Verbal Aggression - Male/Female**	.500	1.191	.211	.070	.930	2.374	31	.024
Pair 13	**Irritability (factor Aggression) - Male/Female**	.250	1.666	.294	-.351	.851	.849	31	.402
Pair 14	**Suspicion (factor Hostility) - Male/Female**	.188	1.908	.337	-.500	.875	.556	31	.582
Pair 15	**Guilt (factor Hostility) - Male/Female**	.125	1.385	.245	-.374	.624	.510	31	.613

Present study showed that a poor mental component score was associated with significantly greater trait of emotional health like (i.e., anxiety, somatic pain, guilt, detachment, Psychic, aggression, suspicion in stressful situations) and depression, and poorer social support and coping skills.

Present study shows emotional health issues compare with male and female. study shows on Impulsiveness male 6.41 ± SD 1.965 and female 6.63 ± SD 1.540 and t value is -.529, Monotony Avoidance male 6.19 ± SD 1.908 and female 5.72 ± SD 2.174 and t value is .833, Socialization male 11.44 ± SD 3.843 and female 12.19 ± SD 2.822 and t value is -.974, Somatic Anxiety male 8.75 ± SD .880 and female 8.91 ± SD .928 and t value is -.841, Psych asthenia male 5.56 ± SD 2.257 and female 5.75± SD 1.368 and t value is -.375, Inhibition of Aggression male 6.59 ± SD 2.123 and female 6.53 ± SD 1.606 and t value is .126, Indirect Aggression male 3.50 ± SD 1.244 and female 3.38 ± SD .942 and t value is .472, Irritability (Factor Aggression) male 3.06 ± SD 1.162 and female 2.81 ± SD .896 and t value is .849, Suspicion (Factor Hostility) male 3.25 ± SD 1.136 and female 3.06 ± SD 1.216 and t value is .556, and Guilt (Factor Hostility) male 3.06 ± SD .982 and female 2.94 ± SD 1.190 and t value is .510 , is not statistically significant at the level of <0.05 level. Results show both genders are facing emotional health issues.

Muscular tension male 5.56 ± SD 2.462 and female 7.59 ± SD 1.542 and t value is -4.513, and mean score shows female gender face more difficulties in muscular tension as compare to male gender , Psychic Anxiety male 6.22 ± SD 2.196 and female 5.09 ± SD 2.248 and t value is 2.521 and mean score shows male gender face more difficulties in psychic anxiety as compare to female gender, Detachment male 5.72 ± SD 2.303 and female 3.47 ± SD 2.016 and t value is 4.281 and mean score shows male gender face more difficulties in detachment as compare to female gender, Social Desirability male 4.88 ± SD 1.879 and female 6.53 ± SD 1.722 and t value is -3.401 and mean score shows female gender face more difficulties in social desirability as compare to male gender, and Verbal Aggression male 3.41 ± SD .979 and female 2.91 ± SD 1.058 and t value is 2.374 and mean score shows male gender face more difficulties in verbal aggression as compare to female gender, is statistically significant at the level of <0.05 level.

CONCLUSION

Present study shows large numbers of patients with poor emotional health reported no improvement in the physical component. This study shows poor emotional health score was associated with significantly greater trait somatic anxiety, muscular tension, psychic anxiety, detachment, social desirability, verbal aggression (i.e., a predisposition to react with anxiety in stressful situations) and depression, and poorer social support and coping skills.

LIMITATION -

The results of this study were the significant but short-term. In order to study the long-term effects of poor emotional health and personality traits after orthopaedic surgery.

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