

Marriage and migraine in indian females: a study on impact of marital satisfaction on migraine- related disability and quality of life

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Abstract

Introduction: Migraine is more common in females across all cultures. Chronic migraine is associated with a significant negative impact on relationships. The ultimate goal of marriage is to attain marital satisfaction. Negative interactions and disagreements within the marital dyad are bound to cause marital dissatisfaction. The factors that contribute to marital satisfaction are complex and vary across different cultures. **Aim:** To study the impact of marital satisfaction in married females with migraine. **Methodology:** To study unique factors of married life and family dynamics impacting marital satisfaction and migraine in Indian society, we used a novel questionnaire 'Marital Satisfaction Scale in Migraine' (MSSM), in this cross-sectional study. Using a cut-off of MSSM, we identified and divided the cohort into two groups- females with marital satisfaction (FMS) and females with marital dissatisfaction (FMD). We then compared the two groups for migraine-related disability, migraine-related quality of life, and level of depression. **Results:** We found marital satisfaction to be positively associated with higher age of females, parity, freedom of choice to be a homemaker or working, a better relationship with husband and in-laws. FMS had a significantly lower migraine-related disability, better migraine-related quality of life, and a lower level of mood disturbances than FMD. **Conclusion:** The impact of marital dissatisfaction on the quality of life of married females with migraines, especially from India is quite different from Western society. To the best of our knowledge, there is no previous study which has studied the impact of multiple facets of marital satisfaction in females with migraine.

Keywords: Marital Satisfaction, Migraine, Female Migraineurs, Migraine- disability, Migraine- quality of life.

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Introduction

Migraine is more prominent in women in all cultures worldwide and as migraine frequency increases, the negative impact on relationships also increases.[1-4] Marital dissatisfaction is more common in women than men, in the general population, and also in females with chronic pain.[5,6]

Marital satisfaction reflects a subjective state of marital happiness, and the factors that influence or contribute to marital satisfaction are complex and may differ

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across cultures. [6,7] Marriage and family are complementary to each other and when a woman enters matrimony, the adjustment demands expected of her include proficiency in home-making skills, keeping husband sexually satisfied, to earn or give up her job as required by the family, to be physically attractive and to bear children. Alongside she is also expected to make new relationships with love and affection and give up earlier relationships, desires, and aspirations for family harmony. It is said to be more prevalent in India, than other cultures. [8,9]

As the ultimate goal of marriage is to attain marital satisfaction, negative interactions and disagreements within the marital dyad are bound to cause marital dissatisfaction. Inherent problems within the marriage or family can lead to severe psychological stress and

can act as an evident, or as a subconscious, unidentified trigger of migraine.

The impact of marital dissatisfaction on the quality of life of married females with migraines, especially from India is quite different from Western society and remains inadequately studied. To the best of our knowledge, there is no previous study which has studied the impact of marital dissatisfaction on females with migraine. The present research was aimed to study the impact of marital satisfaction in married females with migraine.

The objectives of the study included a) to determine the prevalence of level of marital dissatisfaction in married females with migraine presenting in our outpatient department, b) studying impact of marital satisfaction on migraine in Indian society via a questionnaire developed by us, c) to identify the relationship of marital satisfaction with demographic data (age, education, income, area of residence, duration of the marriage, type of marriage, family constitution, parity, employment) in the cohort and d) to identify the relationship of marital satisfaction with migraine-related disability and migraine-related quality of life in the cohort.

Materials and Methods

Study Population

This cross-sectional observational study was conducted in a tertiary care teaching hospital in central India, located in the watershed of urban and rural. The minimum sample size required for the study was calculated using the formula $N = [(Z_{1-\alpha})^2 p(1-p)]/d^2$ where N is the sample size, $(Z_{1-\alpha})$ represents standard normal variate, p is expected proportion in population-based on or previous studies and d is the absolute error of precision.[10] It was found to be 225.

Inclusion Criteria

All consenting married females with migraine (meeting ICHD-3 criteria) [11] aged ≥ 18 years.

Exclusion Criteria

Patients with secondary headaches, divorced /separated /widowed females, females with same-sex marriages or females diagnosed/treated for a psychiatric illness, particularly depression in the past.

Methodology

The study was approved by the institutional ethical committee. Female patients presenting to the outpatient department of Neurology with headaches were screened for migraine by one of the investigators {NG} and patients were enrolled in the study as per the inclusion and exclusion criteria. Written informed consent was taken in the vernacular language.

Consenting and qualifying patients were enrolled in the study from 1st April 2019 to 31st March 2020. Data was filled in the approved research proforma. Socio-demographic data recorded included age, religion, level of education, duration of the marriage, number and gender of children, area of residence, occupation, choice of occupation, type of marriage, and type of family.

Further, four questionnaires were presented to each patient by the investigators. All these questionnaires were read out to the enrolled patients, in their vernacular language, with examples and explanations, wherever needed by the patients, to enable them to answer the questions. Questionnaires included:

Marital Satisfaction Scale in Migraine (MSSM)

This questionnaire was prepared in tandem with the factors relevant to Indian society, lifestyle, cultural background, expectations, and norms, and after reviewing the literature. The details of the development of this questionnaire via a pilot study have been published previously.[12] This scale was used to assess marital satisfaction in female migraineurs via a cut-off of 37. Females with MSSM score ≤ 37 points were classified as females with marital satisfaction (FMS), and those with score >37 were classified as females with marital dissatisfaction (FMD). Detailed MSSM can be found in supplementary material.

- **Migraine Disability Assessment Score (MIDAS)** to assess migraine-related disability.[13]

- **Migraine Specific Quality of Life version 2.1 (MSQoL v2.1)** to assess the migraine-related quality of life.[14]

- **Beck's Depression Inventory (BDI)** was used to assess the patient's mood or level of depression.[15]

Data Management

The patients were grouped as per age (≤ 30 years and >30 years), religion (Hindu or others), educational qualification (up to high school/less and more than high school), area of residence (urban or rural), occupation (home-maker or working), involvement in self-chosen occupation (liberty to choose to be either a home-maker or an earning member), duration of marriage (≤ 2 years and >2 years), presence of children, parity (≤ 2 or >2), type of marriage (arranged or self-choice) and type of family (nuclear or joint).

Data was analyzed to identify the difference between FMS and FMD by comparing them for the above-mentioned variables.

The impact of each of the five domains of MSSM was separately analyzed.

The two groups- FMS and FMD were then compared for results obtained from MIDAS, MSQoLv2.1, and BDI.

Data Analysis

Data was filled in an excel sheet, analyzed, and evaluated for fulfilling the objectives. Statistical software, SPSS version 17.0 Trial, was used for analysis. The prevalence of an outcome variable along with 95% Confidence Interval, was calculated. Descriptive statistics were used to depict the main features and characteristics of the collected data. Results of continuous measurements were presented on mean \pm SD (min-max), and results of categorical measures were presented in numbers/percentages.

Pearson's Chi-Square test, Z-test, Spearman's rho (ρ), and one-way analysis of variance (ANOVA) were used as indicated.

The probability value, $p > 0.05$, was considered as statistically insignificant, from $p < 0.05$ to $p < 0.02$ was regarded as statistically significant while from $p < 0.01$ to $p < 0.001$ was considered as statistically highly/strongly significant.

Results

A total of 297 females were eligible for the study, out of which 268 (n) consented and answered the questionnaires, thus giving a response rate of 90.24%. These 268 females constituted our study population.

Using the cut-off score of 37 of MSSM for determining marital dissatisfaction, in our cohort, 150 females (56%) were determined to have marital satisfaction (FMS), and 118 (44%) females were found to have marital dissatisfaction (FMD).

The detailed distribution of responses obtained for MSSM in the two groups – FMS and FMD are mentioned in the supplementary material.

Socio-Demographic Characteristics

The mean age of our cohort (n=268) was 32.72 ± 7.22 years. The prevalence of marital dissatisfaction with age is shown in figure 1.

The distribution of baseline socio-demographic characteristics of the cohort and their relationship with marital satisfaction is shown in table 1.

Characteristics of FMS And FMD in Our Cohort MSSM Scores- Individual Domains and Total

The total MSSM score and scores of individual domains were significantly lower (better) in FMS (n=150) than FMD (n=122) group. This is shown in table 2.

Prevalence and Comparison of Migraine-Related Disability with Marital Satisfaction

The distribution of the cohort for migraine-related disability is shown in table 3.

A comparison of migraine-related disability with marital satisfaction showed that FMS (n=150) had lower MIDAS grade or lesser migraine-related disability compared to FMD (n=122), and this difference was highly significant statistically ($p < 0.001$).

Comparison of Migraine-Related Quality of Life with Marital Satisfaction

The average score of MSQoLv2.1 in FMS (n=150) was found to be significantly lower (better) than in FMD (n=118).

Correlations (Spearman's rho) of marital satisfaction with the total score of MSQoLv2.1 and each of its three domains were found to be strongly significant ($p < 0.001$ for each) in the positive direction. Thus, showing that FMS had a significantly better migraine-related quality of life than FMD. This is shown in table 4.

Prevalence and Comparison of Level of Depression with Marital Satisfaction

The prevalence of mood disturbance in the cohort is shown in table 5. Around 11% (n=30) of females were found to be suffering from mild to extreme depression. Statistically, the association of the level of depression in the cohort was found to be highly significant ($p < 0.001$) with marital satisfaction in the negative direction.

Table 1: Socio-demographic Characteristics of Married Females with Migraine

Characteristics of Married Females with Migraine		Frequency, n=268 (Percentage)	FMS [MSSM \leq 37] n= 150 (Percentage)	FMD [MSSM $>$ 37] n=118 (Percentage)	p-value [#] (Level of Significance)
Age	≤ 30 years	122 (45.5)	59 (22.0)	63 (23.5)	0.022 (significant)
	> 30 years	146 (54.5)	91 (34.0)	55 (20.5)	
Religion	Hindu	243 (90.7)	134 (50)	109 (40.7)	0.396 (not significant)
	Others	25 (9.3)	16 (6.0)	9 (3.4)	
Educational Qualificati-on	More than High School	31 (11.6)	15 (5.6)	16 (6.0)	0.366 (not significant)
	High School or Less	237 (88.4)	135 (50.4)	102 (38.1)	
Duration of marriage	≤ 2 years	36 (13.4)	18 (6.7)	18 (6.7)	0.438

Information about Children	Children	> 2 years	232 (86.6)	132 (49.3)	100 (37.3)	(not significant)
		No	27 (10.1)	9 (3.4)	18 (6.7)	0.012 (significant)
		Yes	241 (89.9)	141 (52.6)	100 (37.3)	
	No. of Children	NA (No child)	27 (10.1)	9 (3.4)	18 (6.7)	0.002 (highly significant)
		≤ 2	129 (48.1)	66 (24.6)	63 (23.5)	
		>2	112 (41.8)	75 (28.0)	37 (13.8)	
	Male Child	No	36 (13.4)	15 (5.6)	21 (7.8)	0.004 (highly significant)
		Yes	205 (76.5)	126 (47.0)	79 (29.5)	
		NA (No child)	27 (10.1)	9 (3.4)	18 (6.7)	
	Place of Residence	Urban	141 (52.6)	73 (27.2)	68 (25.4)	0.145 (not significant)
Rural		127 (47.4)	77 (28.7)	50 (18.7)		
Occupation	Home maker	191 (71.3)	113 (42.2)	78 (29.1)	0.097 (not significant)	
	Working	77 (28.7)	37 (13.8)	40 (14.9)		
Occupation Choice	No	34 (12.7)	5 (1.9)	29 (10.8)	<0.001 (highly significant)	
	With choice	234 (87.3)	145 (54.1)	89 (33.2)		
Type of Marriage	Arranged	266 (99.3)	150 (56.0)	116 (43.3)	0.109 (not significant)	
	Self-Choice	2 (0.7)	0 (0.0)	2 (0.7)		
Type of Family	Nuclear	101 (37.7)	61 (22.8)	40 (14.9)	0.256 (not significant)	
	Joint	167 (62.3)	89 (33.2)	78 (29.1)		

p-value calculated using Pearson’s Chi-Square test

Table 2: Comparison of scores of MSSM in Females with Marital Satisfaction (FMS) and Females with Marital Dissatisfaction (FMD)

Domain of MSSM	Group of females	Scatter	95.0% CI for Mean		p-value (LOS)
		Mean ± SD	LB	UB	
Score of D1	Satisfied	8.47±1.57	8.21	8.72	p<0.001 #
	Dissatisfied	15.08±2.49	14.63	15.54	
Score of D2	Satisfied	5.59±1.11	5.41	5.77	p<0.001 #
	Dissatisfied	9.50±2.86	8.98	10.02	
Score of D3	Satisfied	4.67±0.79	4.54	4.79	p<0.001 #
	Dissatisfied	6.38±1.33	6.14	6.62	
Score of D4	Satisfied	7.62±0.96	7.47	7.77	p<0.001 #
	Dissatisfied	11.37±2.69	10.88	11.86	
Score of D5	Satisfied	4.29±0.63	4.19	4.39	p<0.001 #
	Dissatisfied	6.82±1.48	6.55	7.09	
Total Score of MSSM	Satisfied	30.63±2.91	30.16	31.10	p<0.001 #
	Dissatisfied	49.16±7.05	47.88	50.45	

The mean differences are highly significant at the 0.001 level of significance. The degrees of freedom are 39. [Mean Diff-Mean Difference; SD-Standard Deviation; LB-Lower Bound; UB-Upper Bound; LOS-Level of Significance]

Table 3: Comparison of Migraine-Related Disability in Females with Marital Satisfaction and Females with Marital Dissatisfaction

Group of Females		MIDAS Grade II (Mild Disability) n= 17, 6.3%	MIDAS Grade III (Moderate Disability) n= 61, 22.8%	MIDAS Grade IV (Severe Disability) n=190, 70%	p-value
Satisfied (FMS)	n= 150 (56.0%)	16 (6.0)	59 (22.0)	75 (28.0)	<0.001#
Dissatisfied (FMD)	n=118 (44.0%)	1 (0.4)	2 (0.7)	115 (42.9)	

p-value calculated using Pearson’s Chi-Square test

The association is highly/strongly significant for 2 degrees of freedom at the 0.001 level of significance. [LOS-Level of Significance]

Table 4: Comparison of Migraine- Related Quality of Life of Females with Marital Satisfaction (FMS) and Females with Marital Dissatisfaction (FMD)

Domain of MSQoLv2.1	Group of females	Scatter	95.0% CI for Mean		p-value (LOS)
		Mean \pm SD	LB	UB	
Score of D1	Satisfied	15.93 \pm 4.85	15.14	16.71	p<0.001 [†]
	Dissatisfied	28.03 \pm 3.84	27.33	28.73	
Score of D2	Satisfied	6.15 \pm 2.25	5.78	6.51	p<0.001 [†]
	Dissatisfied	11.94 \pm 2.28	11.52	12.36	
Score of D3	Satisfied	4.46 \pm 1.73	4.18	4.74	p<0.001 [†]
	Dissatisfied	8.04 \pm 1.72	7.73	8.36	
Total Score of MSQoLv2.1	Satisfied	26.53 \pm 8.26	25.20	27.87	p<0.001 [†]
	Dissatisfied	48.02 \pm 6.78	46.78	49.25	

Relationship of marital quality (satisfaction/dissatisfaction) with their quality of life

Parameter	Spearman's rho	D1: Role Restrictive	D2: Role Preventive	D3: Emotion Function	MSQoLv2.1 Total Score
MSSM Grading (Satisfied/Dissatisfied)	ρ	0.78 [#]	0.78 [#]	0.73 [#]	0.79 [#]
	p-value (LOS)	p<0.001	p<0.001	p<0.001	p<0.001

[†] The mean differences are highly significant at the 0.001 level of significance. The degrees of freedom are 266. [Mean Diff-Mean Difference; SD-Standard Deviation; LB-Lower Bound; UB-Upper Bound; LOS-Level of Significance] [#] Correlation is highly/strongly significant at the 0.001 level (2-tailed) of significance. [LOS-Level of Significance]

Table 5: Prevalence of Depression and Relationship of Level of Depression with Marital Satisfaction/Dissatisfaction

Score of BDI	Level of Depression (BDI)	Marital Satisfaction (MSSM)		Depression	
		Satisfied (≤ 37 points)	Dissatisfied (> 37 points)	Number	Prevalence
1-10	These ups and downs are considered normal	148 55.2%	90 33.6%	238	88.8%
11-16	Mild Mood Disturbance	1 0.4%	24 9.0%	25	9.3%
17-20	Borderline Clinical Depression	0 0.0%	2 0.7%	2	0.7%
21-30	Moderate Depression	0 0.0%	1 0.4%	1	0.4%
31-40	Severe Depression	0 0.0%	1 0.4%	1	0.4%
Over 40	Extreme Depression	1 0.4%	0 0.0%	1	0.4%
Total		150 56.0%	118 44.0%	268	100.0%

p-value (LOS): $\chi^2_5 = 37.00^{\#}$ $p < 0.001$

[#] The association is highly/strongly significant for 5 degrees of freedom at the 0.001 level of significance. [LOS-Level of Significance]

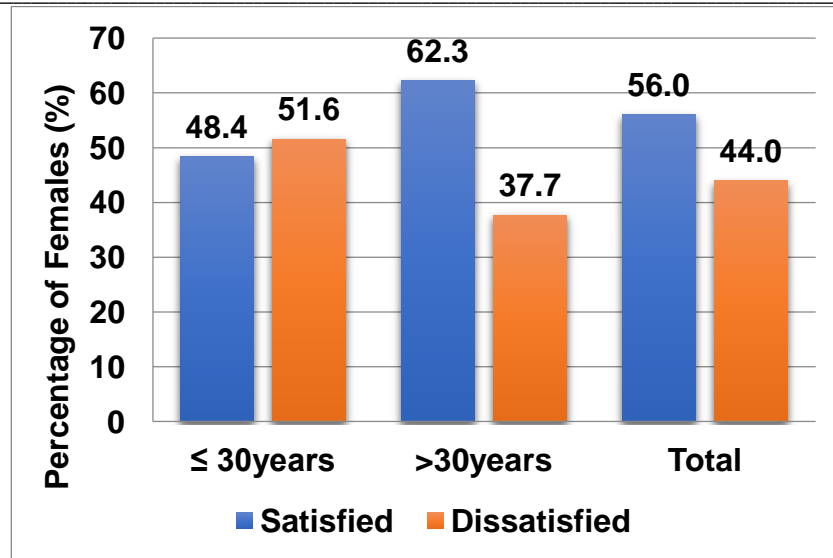


Figure 1: Bar diagram showing the distribution of females with marital satisfaction (FMS) and dissatisfaction (FMD) groups according to age

Discussion

MSSM incorporates many culturally important and relevant domains affecting marital satisfaction, including the relationship with husband, in-laws, children, finances, sexual relations, and the impact of headache. MSSM objectively identifies and compares the relation of marital satisfaction with the migraine-related quality of life, migraine-related disability, and depression.

Prevalence of Marital Dissatisfaction

The prevalence of marital dissatisfaction in our cohort was 56%, which agrees with previous studies.[4] We found that patients in the older age group were more satisfied with their married lives. (Figure 1) Higher marital satisfaction in older couples has been attributed to the development of better communication and a greater understanding of the partner. [5,6,16,17] We found no significant difference in marital satisfaction with the duration of the marriage. This contrasts from the previous studies [6,18] which might have crept in because of differences in data management. We grouped the duration of the marriage as ≤ 2 years or > 2 years and didn't record the exact duration of the marriage.

Migraine, Marriage, And Relationship with Husband

In our cohort, FMS had a significantly better relationship with their husbands' ($p < 0.001$) than FMD. As marriage serves as a socially acceptable way of satisfying the fundamental biological need for sexual gratification, satisfactory sexual relations are positively

associated with marital satisfaction across all cultures. [9,19-21]

Migraine leads to sexual discord in marriage on two counts- either decreases the frequency of sexual intercourse or the female migraineur refuses the coital advances. This was judged to be the cause of marital dissatisfaction by 90% of females dissatisfied in their marriage in our cohort, at least occasionally.

Migraine, Marriage, And Issues About In-Laws/Husband's Family

It is said that in Indian marriages, a female is stressed because she is expected to re-align her life, particularly with in-laws, which often becomes a source of negativism and marital dissatisfaction. [8,22]

In our cohort, the type of family- joint/nuclear did not have any measurable impact on marital dissatisfaction ($p = 0.256$). However, those satisfied in their marriage were more likely to have a better relationship with their in-laws, than those dissatisfied ($p < 0.001$).

Though the traditional joint family system in India has disintegrated with the passage of time, to give way to nuclear families, the family still exerts great influence and authority in first 'arranging' the spouse for marriage and thereafter, guiding decisions of the couple.[22,23] The results in our cohort highlight the same.

So, irrespective of the presence of in-laws in the house (joint family system) a better relationship with them will bring higher marital satisfaction and better mental health.

The Western literature and marital satisfaction scales often ignore this important aspect contributing to marital disharmony.

Migraine, Marriage, And Children

Prior studies have revealed contradictory results regarding the correlation between the presence and number of children and marital satisfaction as it is not a culturally universal outcome. Previous multi-cultural meta-analysis did not reveal any significant positive relationship between marital satisfaction and parity. [24,25] However, we found a significant positive impact of the presence of children and their number upon marital satisfaction. Furthermore, the presence of a male child adds to the satisfaction positivity. This can be explained by individualistic or cultural differences, as in the Asian culture, parents generally see children as a positive influence in their life which may be attributed to the understanding that children create a biological and emotional bond between the husband and wife, increase marital stability and reduce the divorce rate.[26,27] Other authors have also found a higher number of children to be a strong predictor of marital satisfaction.[28]

Migraine, Marriage, And Matters Relating to Education, Occupation, And Income

Economic status has shown cross-cultural differences in marital satisfaction.[29] Though on one hand financial distress may lead to disagreements and stress in married life,[30] it may, on the other hand, bring out positive aspects of relationship quality like affection, love, and satisfaction.[31] In our study, the jobs/finances domain showed a significant difference in FMS and FMD ($p<0.001$). This underlines the fact that in Asian Indian society, financial issues are a common source of conflict in interpersonal, marital, and family relationships, and appropriate employment and income are important issues in establishing, maintaining, and increasing marital satisfaction.[7]

Previous literature suggests an unpredictable relationship between marital satisfaction and level of education. An American study in 2002 reported lower marital dissolution in more educated women, whereas a study from the Netherlands found higher marital disharmony in highly educated females.[5,32] In our Indian cohort, we found a non-significant association between marital satisfaction and level of education of the female. This could be because of a referral bias to our tertiary care center, as 88% of the females in our cohort were educated up to high-school or less.

We found that the females who were employed in their 'chosen role' – whether homemaker or working, were highly likely to be satisfied in their marriage. Although, it is noteworthy that our results did not show

any correlation between occupation or marital satisfaction.

This finding has an important societal message that to improve marital satisfaction, the females should be given the freedom to choose their desired role as a homemaker or breadwinner.

Impact of Marital Satisfaction on Migraine-Related Disability and Migraine-Related Quality of Life

Our results showed that marital satisfaction was inversely related with migraine-related disability, thereby meaning, higher marital satisfaction was associated with lesser migraine-related disability ($p<0.001$) (table 4) This was consistent with the results reported previously that migraines caused significant disability and impacted the division of household work, the ability to attend social and leisure functions, and the likelihood of partner arguments, thus, negatively impacting relationship with spouse/partner.[1]

We also found that FMS had a significantly better migraine-related quality of life than FMD ($p<0.001$) as seen in the comparison of the average scores of MSQoLv2.1. Similar findings between the migraine-related quality of life and marital satisfaction have been reported previously.[33] Thus, again highlighting the negative impact of marital dissatisfaction on patients' health and well-being.

Impact of Marital Satisfaction on Mood, Level of Depression, and Mental Health

Although we had excluded patients known to be suffering from depression, 11% ($n=30$) of females were found to be suffering from mild to extreme depression. Depression was found to have a significant association ($p<0.001$) with marital satisfaction in the negative direction, as reported previously. [4,34]

This could mean that undiagnosed depression should be specifically explored in patients with marital dissatisfaction and/or migraine.

Strengths and Limitations of The Study

A large sample size, a high participation rate of a diverse population, and prospective data collection were the strengths of our study. In our study, we validated a reliable novel questionnaire (MSSM) to be used for screening and assessment of marital satisfaction in females through a cut-off value.

Few limitations of our study include that it was a self-reported (subjective) study, and it did not study longitudinal dynamic changes in the mental and emotional status and relationship perception. Also, the relationships identified in the study do not confirm a causal relationship.

Conclusion

Our study highlights the importance of focusing on the personal experiences of each individual to improve

marital relationships as an essential part of migraine therapy. Marital dissatisfaction is a very crucial and often ignored trigger for migraine. Creating awareness about it will help in providing holistic care for migraine patients. Which in turn will reduce not only the pain, but will also help in minimizing the pharmacotherapy, reducing disability, improving quality of life, and overall outcome of migraine treatment.

We suggest that MSSM may serve as a reference in future research and clinical practice. It may be used as an objective tool to assess marital satisfaction and also to determine the longitudinal, dynamic, and probable causal relationship of marital satisfaction and its various domains with migraine-related disability and quality of life. Also, future studies may be done on larger cohorts of other cultures, including males.

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