
Marital adjustment in patients with fibromyalgia: its association with suicidal ideation and related factors. A cross-sectional study

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ABSTRACT

Objective. *Fibromyalgia has been associated with suicidal ideation, suicide attempts and completed suicide. Non-married status is a risk factor for suicidal behaviours but the quality of the marital relationship has been scarcely investigated. The objectives of the present study were to evaluate, in patients with fibromyalgia, the relationship between marital adjustment suicidal ideation and potentially related variables: depression severity, sleep disturbance, perceived burdensomeness, thwarted belongingness, fibromyalgia severity and pain intensity.*

Methods. *A survey was done in patients with fibromyalgia which collected sociodemographic data and included the following questionnaires: the Locke and Wallace Marital Adjustment Test, the Beck's Depression Inventory II, the Plutchik Suicide Risk Scale, a 10-item version of the Interpersonal Needs Questionnaire, the Insomnia Severity Index, and the Revised Fibromyalgia Impact Questionnaire. Suicidal ideation was assessed with item 9 of the Beck's Depression Inventory, and pain intensity was measured with the VAS scale of the Revised Fibromyalgia Impact Questionnaire.*

Results. *Of 257 participants 71 were single, 107 had a good marital adjustment and 79 a poor marital adjustment. Suicidal ideation was most frequent among patients with poor marital adjustment than among those with good marital adjustment or patients without partner. The poor marital adjustment group showed significantly worse scores in most of the remaining variables with the only exceptions of the FIQR and pain scores.*

Conclusion. *In patients with fibromyalgia the degree of marital adjustment seems to be a relevant factor for suicidal ideation and related variables.*

Introduction

Suicidal behaviours are a problem of growing concern and literature concerning risk factors for them as well as potential methods of prevention and treatment strategies have been steadily growing in the last decade. It has been shown that chronic pain represents a risk factor for suicidal behaviours, independently of other potentially associated demographic factors or clinical conditions, although other factors, such as sleep problems, poor perceived mental health and the presence of concurrent chronic pain conditions, could probably increase suicide risk (1). In relation to painful rheumatic diseases, a recent systematic review and meta-analysis found that both suicidal ideation and suicide attempts were fairly common among patients with rheumatic diseases, with prevalence rates of 26% and 12% respectively, being higher in women than in men (2).

Fibromyalgia is a central sensitisation syndrome whose cardinal symptom is chronic pain but which is usually accompanied by other associated symptoms, such as chronic fatigue, stiffness, non-restorative sleep, gastrointestinal complaints, and symptoms of psychological distress (3, 4). It often coexists with other central sensitisation syndromes as well as with different chronic pain conditions (5). In the above-mentioned systematic review and meta-analysis, it was found that the prevalence of suicidal ideation in patients with rheumatic diseases was highest among patients with fibromyalgia (2). Other relevant factors that are related with suicidal behaviours and that are fairly frequent in patients with fibromyalgia include major depression (6), sleep disturbances (7), and perceived burdensomeness and thwarted belongingness (8) both of which are key components of the interpersonal

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theory of suicide (9-10). Fibromyalgia has also been associated with an increased risk of suicidal behaviours as compared to the general population (11-14).

In a previous study concerning the role of perceived burdensomeness and thwarted belongingness in patients with fibromyalgia and suicidal ideation, we found, as a secondary result, that marital adjustment scores were significantly lower in patients with fibromyalgia and suicidal ideation than in patients with fibromyalgia without suicidal ideation and in controls (8).

It is a well-known fact that suicidal behaviours are more frequent among unmarried people (15-17). At this respect, the meta-analysis performed by Kyung-Sook *et al.* (18) found that several factors modulated the association between non-married status and suicide, the risk of suicide being higher in men than in women, in people aged <65 years than in those aged ≥65 years, and in people divorced than in single subjects. However, although the protective effect of marriage on suicidal behaviours is well established, little is known about up to what point the degree of marital adjustment may influence suicidal behaviours.

Arcel *et al.* (19) found that marital relationship was poor in many women and that a high degree of physical and/or psychological violence conditioned their suicide attempts. Kaslow *et al.* (20) found that marital discord and childhood sexual abuse were risk factors for suicide attempts among African American women. Whisman and Uebelacker (21) found, in U.S. population, that marital discord correlated with suicidal ideation, although this association disappeared after adjusting for depression, anxiety and substance abuse. Langhinrichen-Rholing *et al.* (22) found that, in U.S. Air Force members, marital relationship satisfaction negatively correlated with past-year suicidal ideation in both sexes, even after controlling for depression. Robustelli *et al.* (23) found, in U.S. population, that suicidal ideation and attempts were correlated with marital discord even after adjusting for demographic factors, mood, anxiety and substance

abuse disorders. Ahmadpanah *et al.* (24) found, that marital problems, family problems and guilt were factors significantly associated with the suicide attempt in Iran. Finally, Whisman *et al.* (25) found, in military U.S. personnel, that marital distress was significantly associated with suicidal ideation. Thus, it seems that marital satisfaction rather than marital status per se would be the factor related to suicidal ideation or attempts. Additionally, several studies have shown that marital dissatisfaction and depression are strongly related and that this relationship is bidirectional (27-30), and it is well known that depression is one of the factors strongly related with suicidal behaviours.

The primary objective of the present study was to investigate, in a sample of patients with fibromyalgia, the relationship between the degree of marital adjustment and unmarried status with suicide ideation prevalence and potentially related variables, including depression severity, sleep disturbance, perceived burdensomeness, thwarted belongingness, fibromyalgia severity and pain intensity.

Methods

Study design

This was an observational, cross-sectional study performed in Spain between 2014 and 2016. Participants were informed at the beginning of the study of its objectives and that their data would be used for investigational purposes.

The Human Research Ethics Committee of the University of Granada, Spain, approved all the procedures of this study according to 1964 Helsinki declaration and its later amendments.

Subjects

Patients with fibromyalgia were recruited in clinical settings among patients attending consultation as well as among patients from fibromyalgia associations. In the first case, the study questionnaires, as well as the informed consent form, were directly given to the patients, and the diagnosis was made applying the American College of Rheumatologists 2011 criteria (31). In the second case, they were uploaded

in the fibromyalgia associations websites, and they had to be diagnosed of fibromyalgia by a physician.

Patients had to be aged 18 years or older and able to understand and complete the questionnaires. No additional inclusion criteria were required, and no specific exclusion criteria were established.

Outcome measures

Marital adjustment was evaluated by means of the Locke and Wallace Marital Adjustment Test (LWMAT) (32). This scale, which was developed in 1959, has been applied in many studies evaluating marital satisfaction. It measures marital satisfaction status with 15 items. Total scores range from 2 to 158 points, higher scores indicating better marital satisfaction and being 94 the cut-off point in Spanish-speaking population indicative of a good marital adjustment (33).

Suicidal ideation was assessed using the second version of Beck's Depression Inventory (BDI-II) (34). BDI-II is a self-assessed questionnaire of 21 items whose scoring ranges from 0 to 63, with higher scores indicating more severe depression. Suicidal ideation was evaluated according to the answer given in item 9 that has four response levels: 0 (I don't have any thoughts of harming myself), 1 (I have thoughts of harming myself but I would not carry them out), 2 (I would like to kill myself), and 3 (I would kill myself if I had the chance). Depression severity was measured with the total BDI-II score after subtracting the item 9 value in order to evaluate depression severity independently of suicide ideation.

Suicide risk was assessed with the Plutchik Suicide Risk Scale (35). This 15-item questionnaire ranges 1 up to 15 points, with higher values indicating higher suicidal risk.

Perceived burdensomeness and thwarted belongingness were measured with a 10-item version of the Interpersonal Needs Questionnaire (INQ) (36); the first six items of the questionnaire assess perceived burdensomeness with scores ranging from 7 to 42 points and the next four items assess thwarted belongingness with scores ranging from 7 to 28 points;

higher scores indicate higher degrees of either perceived burdensomeness or thwarted belongingness.

Sleep quality was evaluated with the Insomnia Severity Index (ISI), which measures the degree of sleep disturbance with 7 items (37). Total score ranges from 0 up to 28 points with higher values indicating more relevant sleeping problems.

The severity of fibromyalgia was assessed with the Revised Fibromyalgia Impact Questionnaire (FIQR) (38), a 21-item questionnaire whose total score range from 0 to 100, higher values indicating greater severity of the disease and worse functional impairment. Pain intensity was assessed with item number 12 of the FIQR with scores rating from 0 to 10, higher scores indicating more severe pain.

All of the previously described outcome measures were tested using Spanish-validated versions of each questionnaire (33, 39-43).

Data analysis

The total sample was distributed in three groups according to the marital status and the degree of marital adjustment: single subjects (which included single, divorced or widowed persons), subjects with good marital adjustment and subjects with poor marital adjustment as defined above. Suicidal ideation among groups was analysed with the χ^2 test. Differences among groups in the scores of depression severity (BDI-II), suicide risk (Plutchik), perceived burdensomeness (INQ), thwarted belongingness (INQ), sleep quality (ISI), fibromyalgia severity (FIQR) and pain intensity (pain VAS of the FIQR) were analysed with a one-way analysis of variance (ANOVA), using the Tukey test to evaluate multiple comparisons between groups. Partial correlation coefficients between all variables were calculated after controlling age, sex, number of associated pathologies and educational level. Analyses were performed by SPSS statistical package v. 26 and GraphPad Prism v. 7.0.

Results

From a total of 307 original participants, 50 of them were discarded due

Table I. Sociodemographic data of the participants.

	Good marital adjustment	Poor marital adjustment	Single	<i>p</i>
Age (mean \pm SD)	47.5 \pm 9.5	50.3 \pm 9.6	47.8 \pm 9.5	NS
Female sex [n (%)]	103 (96.3)	74 (93.7)	68 (95.8)	NS
Comorbid diseases [mean \pm SD]	2.75 \pm 2.2	3.72 \pm 2.4**/#	2.68 \pm 2.1	0.0069
Educational status [n (%)]:				NS
no school/primary school	36 (33.9)	25 (31.6)	13 (18.3)	
secondary school/university	70 (66.1)	54 (68.4)	58 (81.7)	
Employment status:				
works only at home	30 (28.0)	17 (21.5)	3 (4.2)	
works outside home	36 (33.6)	19 (24.1)	22 (31.0)	
unemployed	15 (14.0)	13 (16.5)	17 (23.9)	0.0002
retired	5 (4.7)	3 (3.8)	3 (4.2)	
temporary sick leave	11 (10.3)	5 (6.3)	15 (21.1)	
permanent sick leave	9 (8.4)	22 (27.8)	11 (15.5)	

NS: not significant.

** in relation to good marital adjustment; # in relation to single.

Table II. Differences among groups in relation to suicidal ideation.

Suicidal ideation (BDI item 9)	Good marital adjustment	Poor marital adjustment	Single	<i>p</i>
0	58 (54.2)	32 (40.5)	38 (53.6)	0.012
1	44 (41.1)	35 (44.3)	26 (36.7)	
2	5 (4.7)	11 (13.9)	3 (4.2)	
3	0	1 (1.4)	4 (5.6)	

0: I don't have any thoughts of harming myself; 1: I have thoughts of harming myself but I would not carry them out; 2: I would like to kill myself; 3: I would kill myself if I had the chance.

to either missing data in the LWMAT or in the BDI-II; thus, 257 cases were evaluated, of whom the single group included 71 subjects, the good marital adjustment included 107 subjects, and the poor marital adjustment group included 79 subjects. The number of patients directly evaluated in medical consultation was 111 (43.2% of the sample) and the number of patients coming from fibromyalgia associations was 146 (56.8%) of the sample; of these, 71.6 were diagnosed by a rheumatologist, 7.7% by an internist, 5.8% by a family physician, 3.9% by a neurologist, and the remaining 11.0% by other specialists. Sociodemographic data of the three groups are shown in Table I. Poor marital adjustment group showed a lower proportion of subjects working outside home, a higher proportion of patients in permanent sick leave, and a higher number of comorbidities.

Positive suicidal ideation (*i.e.* score in item 9 of the BDI-II \geq 1) was reported by 45.8% of patients with good marital adjustment and 46.5% of patients

in the single group, in contrast with the 59.5% of the poor marital adjustment group. As can be seen in Table II, when data were analysed considering the four answer options provided in the item 9 of the BDI-II, differences were statistically significant with a *p*-value of 0.012. In addition, as it is shown in Table III, the suicide risk was significantly higher in the poor marital adjustment group than in the good marital adjustment and single groups.

Table III shows the scores of the different questionnaires in the three study groups. Apart from the already mentioned suicide risk, there were also significant differences in depression severity, perceived burdensomeness, thwarted belongingness and sleep quality but not in fibromyalgia severity nor in pain intensity. Multiple comparison tests showed that the poor marital adjustment group always had worse scores than the good marital adjustment group and, in the specific case of depression significant differences were also found between the single and the poor marital adjustment group.

Table III. Differences among groups in questionnaires scores.

Questionnaires scores (range and mean ± sd)	Good marital adjustment	Poor marital adjustment	Single	p
BDI-II	(5-49) 25.9±11.2	(12-58) 32.8±10.7***#	(2-52) 28.4±12.6	0.0003
Plutchik	(1-13) 7.0±3.3	(2-13) 8.5±3.0**	(1-15) 8.4±3.4 ^κ	0.0038
INQ-B	(6-41) 16.8±10.8	(6-42) 22.5±11.8**	(6-42) 19.5±12.1	0.0046
INQ-TB	(4-28) 13.7±6.3	(5-28) 16.7±6.2**	(4-28) 14.7±6.4	0.0081
ISI	(0-28) 16.3±5.6	(3-27) 18.6±5.7*	(4-28) 17.5±6.0	0.3020
FIQR	(21-96) 62.6±20.3	(20-97) 66.3±20.7	(18-96) 69.1±18.8	NS
Pain-FIQR	(1-10) 6.9±2.6	(3-10) 7.2±2.4	(1-10) 7.6±2.2	NS

BDI-II: Beck's Depression Inventory; Plutchik: Plutchik Suicide Risk Scale; INQ-B: INQ burdensomeness; INQ-TB: INQ thwarted belongingness; ISI: Insomnia Severity Index; FIQR: Fibromyalgia Impact Questionnaire Revised; Pain-FIQR: Pain VAS scale of the FIQR; NS: not significant.

*p<0.05 in relation to good marital adjustment group; **p<0.01 in relation to good marital adjustment group; ***p<0.001 in relation to good marital adjustment group; #p<0.05 in relation to single group; ^κp<0.05 in relation to good marital adjustment group.

Table IV. Partial correlation coefficients between all variables after controlling the effect of sociodemographic variables.

	2	3	4	5	6	7	8	9
1. Suicidal ideation	0.55***	-0.11	0.50***	0.52***	0.24**	0.24**	0.16*	0.14
2. Suicide risk	-	-0.28***	0.68***	0.65***	0.23**	0.51***	0.39***	0.31***
3. Marital Adjustment	-	-	-0.35***	-0.29***	-0.21**	-0.27***	-0.22**	-0.14
4. Depression	-	-	-	0.71***	0.30***	0.44***	0.45***	0.34***
5. Perceived burdensomeness	-	-	-	-	0.19*	0.37***	0.54***	0.47***
6. Thwarted belongingness	-	-	-	-	-	0.16*	-0.03	-0.08
7. Insomnia severity	-	-	-	-	-	-	0.40***	0.27***
8. Fibromyalgia severity	-	-	-	-	-	-	-	0.84***
9. Pain intensity	-	-	-	-	-	-	-	-

*p<0.05; **p<0.01; ***p<0.001.

Table IV shows the partial correlation coefficients between every pair of evaluated variables. As it can be seen, in relation to marital adjustment, correlations with all other variables were negative, weak to moderate, and statistically significant, except for suicidal ideation and pain intensity. The relationship between suicidal ideation and pain intensity was not statistically significant. Most of the correlations between variables associated with suicidal ideation were positive, moderate to strong, and statistically significant.

Discussion

Our data show that suicidal ideation was fairly more frequent among patients with poor marital adjustment than among patients with good marital adjustment or patients without a partner; only 40.5% of the patients in the poor marital adjustment group reported no suicidal ideation as compared with 54.2% in the good marital adjustment

group and 53% in the single group. Also, poor marital adjustment group showed significantly worse scores in most of the remaining outcome variables with the only exceptions of the FIQR and pain scores which were similar in the three analysed groups. In contrast, the single group only differed from the good marital adjustment group in the Plutchik Suicide Risk score. Although the partial correlation between suicidal ideation and marital adjustment was not significant, the negative, moderate and statistically significant correlations between marital adjustment and the rest of variables related to suicidal ideation, including suicide risk, suggest that marital adjustment has an indirect relationship with suicidal ideation.

Although this bidirectional relationship between marital dissatisfaction and depression has been brought out by several authors (27-30) none of these studies evaluated other factors strongly associ-

ated with depression, such is the case of suicidal ideation, perceived burdensomeness, and thwarted belongingness. Our results show that, in patients with fibromyalgia, a poor marital adjustment is correlated with higher levels of depression, perceived burdensomeness and thwarted belongingness, as well as a with sleep disturbances, these latter being also a risk factor for suicidal behaviours (7). To our knowledge, this is the first study that has explored these relationships in a clinical sample.

Most of the patients that acknowledged positive suicidal ideation gave the answer 1 (“I have thoughts of harming myself but I would not carry them out”) which is usually categorised as mild or passive suicidal ideation (44) and only a few ones gave the answers 2 (“I would like to kill myself”) or 3 (“I would kill myself if I had the chance”) which are categorised as severe or active suicidal ideation (44). Thus, the low number of cases with active suicidal ideation did not allow to perform any statistical comparison among patients with good marital adjustment, patients with poor marital adjustment and single patients. However, it seems to be clinically relevant the fact that 12 (15.2% of this group) patients in the group of poor marital adjustment reported active suicidal ideation in contrast with 5 (4.7% of this group) of the patients with good marital adjustment and 7 (9.9% of this group) of single patients.

The role of marital satisfaction in patients with fibromyalgia has been scarcely investigated.

Reich *et al.* (45) studied the marital relationship in patients with fibromyalgia and in patients with osteoarthritis. They found that in fibromyalgia patients, contrarily to osteoarthritis patients, lower partnership satisfaction was related to poorer physical functioning and higher average pain. They also found that, in patients with fibromyalgia, partnership satisfaction was also related with partner's supportiveness and uncertainty about the disease. Relationship satisfaction was negatively related to both physical functioning and pain for patients with FMS, demonstrating an association between patients' feelings about their partner and their own physi-

cal condition. Taylor *et al.* (46) found that, in patients experiencing either fibromyalgia or osteoarthritis, a good marital relationship favoured the capacity to cope with pain as compared with patients with a poor marital relationship or patients without a partner, although the effect size was small. Huang *et al.* (47) found that, in patients with fibromyalgia, a positive marital relationship did not influence the patients' physical quality of life but had a significant impact in the patients' mental quality of life measuring both variables with the Short-Form Health Survey SF-36. Although these studies highlight the relevance of a harmonious marital relationship for the patients' wellbeing, none of them addressed the issue of depression nor of suicidal ideation.

Among the limitations of this study, it must be stated that, as patients with fibromyalgia were recruited from rheumatologic clinics and associations of patients with fibromyalgia, they were not probably fully representative of the general fibromyalgia population. In relation to the diagnosis of fibromyalgia, although the survey specified that it should have been done by a physician, we could not know with which diagnostic criteria it had been performed. Also, as this was a cross-sectional study, we could not establish a causal relationship between marital mis-adjustment and suicidal ideation related variables.

In conclusion, despite the above-mentioned limitations, that make our results preliminary, data from our study suggest that a poor marital adjustment in patients with fibromyalgia is related with suicidal ideation, higher suicidal risk, higher depression, perceived burdensomeness, thwarted belongingness, and sleep disturbance scores as compared with patients with good marital adjustment or patients without a partner. It also suggests that marital adjustment could be included among the clinical assessment of patients with fibromyalgia, in order to screen for the risk of suicide in these patients. In our opinion, it would be also worthwhile to further evaluate the role of marital relationship in more representative samples of patients with fibromyalgia as well as in patients with other chronic pain syn-

dromes. Likewise, the indirect relationship between marital adjustment and suicidal ideation should be explored through the analysis of the potential mediating role of variables linked to suicidal ideation.

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