PSYCHOLOGICAL PAIN, HOPELESSNESS AND SUICIDE IDEATION IN FEMALE PATIENTS WITH FIBROMYALGIA

Mayara Leite Alves da Silva, Thiago José Nascimento de Souza, Maykon Wanderley Leite Alves-da-Silva,
Carlos Matheus Messias Remigio, Melina Pimentel Cavalcante Pedrosa,
Claudio Torres de Miranda, Valfrido Leão de Melo Neto

Abstract

Objective: Objective: The aim of this study was to investigate if psychache and hopelessness may serve as reliable predictors of suicidal ideation among female fibromyalgia (FM) patients.

Method: This was a cross-sectional study of 50 women with FM, examining the relationship between psychological pain, hopelessness, depressive symptoms, and suicidal ideation. FM diagnosis was confirmed by the American College of Rheumatology (ACR) criteria. Demographic data, the Mini International Neuropsychiatric Interview (MINI 7.0.2), the Beck Depression Inventory-II (BDI-II), the Beck Hopelessness Scale (BHS), the Pittsburgh Sleep Quality Index (PSQI) and the Psychache Scale were utilized to assess these relationships and their predictive value for suicidality.

Results: The mean age of the participants was 50.2 years (±8.7). Thirty-two (64%) patients had current major depression, 11 (22%) had bipolar disorder, 20 (40%) presented passive suicidal ideation and 14 (28%) presented active suicidal ideation. Psychological pain correlated with both depressive symptoms (p<0.01; r= 0.648) and hopelessness (p=0.029; r=0.312) but did not predict suicidal ideation. Logistic regression analyses revealed depressive symptom severity as a predictor of passive suicidal ideation (odds ratio = 1.486; 95% CI: 1.017 - 2.170), while hopelessness predicted active suicidal ideation (odd ratio = 1.356; 95% CI, 1.049 – 1.753).

Conclusions: FM female patients showed increased prevalence of suicidal ideation. Hopelessness predicts active suicidal ideation but psychological pain did not serve as predictive factor for suicide ideation among female FM patients.

Key words: fibromyalgia, suicidal ideation, hopelessness, psychache

Mayara Leite Alves da Silva, Thiago José Nascimento de Souza, Maykon Wanderley Leite Alves-da-Silva, Carlos Matheus Messias Remigio, Melina Pimentel Cavalcante Pedrosa, Claudio Torres de Miranda, Valfrido Leão de Melo Neto

Research Group: VITAL - Group of Research about the Biopsychosocial Aspects in the Life cycles

Corresponding author
Mayara Leite Alves da Silva.
Av. Lourival Melo Mota, S/n, Tabuleiro dos Martins, CEP: 57072-900, Maceió, Alagoas, Brasil.
Email: mayaraifal@gmail.com

1. Introduction

Fibromyalgia (FM) is a syndrome characterized by chronic multifocal musculoskeletal pain, hyperalgesia, and allodynia. It may be associated with a range of other complaints, including fatigue, disturbances in the sleep-wake cycle, mood disorders and cognitive difficulties (ACR, 2021; Marques et al., 2017). Its course is typically chronic and fluctuating, and patients often exhibit low adherence to treatment, which may be inadequate. FM has a high comorbidity with psychiatric disorders such as depression and anxiety and is associated with increased rates of suicidal behavior compared to the general population (Calandre et al., 2021; Ordóñez-Carrasco et al., 2021).

The prevalence of FM varies widely according to the country studied. On average, epidemiological studies indicate worldwide prevalence of 2.1%, with rates of 4.3% among women and 0.9% among men (Cabo-Meseguer et al., 2017). The European continent generally shows higher prevalence rates, while South America presents the lowest rates. In all regions, women are more affected than men; notably, in Europe the ratio is 3 women for every affected man, whereas in South America, the ratio is 12 women for every affected man. (Cabo-Meseguer et al., 2017; Miki et al., 2018).

Comorbidities, such as psychiatric disorders, are highly prevalent in FM patients, with major depression occurring in up to 63% of cases, and anxiety disorders ranging from 20% to 80% (Galvez-Sánchez et al., 2019; Lichtenstein et al., 2018). Bipolar Disorders are also highly prevalent, with rates exceeding 25% (Kleykamp et al., 2021).

The co-occurrence of a chronic physical pain condition and a psychiatric disorder is linked to more severe mood depression, sleep problems, interpersonal difficulties, and increased suicidal behavior (Galvez-Sánchez et al., 2019; Ordóñez-Carrasco et al., 2021;). The prevalence of suicidal ideation among FM patients is about 29.7%, with both passive and active suicidal

ideation being higher than in the general population (Adawi et al., 2021; Calandre et al., 2021, Triñanes et al., 2015). Physical and psychological pain, which share neural substrates, have been identified as significant predictors of increased suicide risk, especially the psychological aspect (Ordóñez-Carrasco et al., 2021; Rizvi et al., 2017).

Psychological pain is defined as an acute state of intolerable internal suffering associated with introspective negative emotions experiences, resulting from difficulties in dealing with suffering, anger, pain, overwhelming anguish and fear. (Cáceda et al., 2014; Shneidman, 1993). A strong relationship exists between psychological pain and psychiatric disorders, particularly among suicidal patients, warranting further investigation (Conejero et al., 2018). A high level of hopelessness is also a well-known risk factor for suicide, yet it remains understudied in FM patients (Ordóñez-Carrasco et al., 2021).

Despite the importance of studying psychological pain and hopelessness as key elements of suicidal behavior in FM patients, to our knowledge, only one previous study has explored these aspects (Ordóñez-Carrasco et al., 2021). We hypothesize that psychache and hopelessness may serve as reliable predictors of suicide risk among patients with physical pain conditions such as FM.

2. Methods

Study design and population

This cross-sectional study involved a sample of 50 female patients who met the American College of Rheumatology ACR (Wolfe et al., 2010) criteria for Fibromyalgia (FM), aged between 18 and 65 years. Participants were recruited from rheumatology and pain outpatient clinics, at the University Hospital Prof. Alberto Antunes (HUPAA) in Maceió, Brazil.

The study received approval from the institutional ethics review board of the Federal University of Alagoas, Brazil (Protocol Number: 3.775.141). All participants provided informed consent before taking part in the study.

Data collection

Research assistants from the rheumatology and pain departments invited eligible female patients to join the study. Inclusion criteria were: (1) meeting ACR criteria for FM, (2) female gender, (3) age between 18 and 65, and (4) sufficient proficiency in the Portuguese language. Exclusion criteria were: (1) visual, auditory or cognitive impairments that could interfere with understanding the interview or questionnaire content, such as, dementia, intellectual disabilities, mild cognitive impairment, psychotic symptoms or *delirium,* and (2) current alcohol or illicit psychoactive substance abuse or dependence. Upon identifying an eligible patient, data collection was conducted through face-to-face interviews, in a private, quiet room at the outpatient clinics, ensuring confidentiality and participant comfort. Interviews lasted approximately one hour per patient (ranging from 40 to 80 minutes) and were administered by two research assistants and two medical students, all trained in applying the questionnaires and scales to ensure consistency and reliability in data collection.

The initial instrument utilized was a sociodemographic and clinical questionnaire developed specifically for this study. This was followed by the Mini International Neuropsychiatric Interview (MINI 7.0.2), to diagnoses mood disorders, such as major depression episode and bipolar disorder, according to DSM-5 criteria, and to assess suicide risk (Sheehan, 2016). Participants were categorized as at risk of suicide if they responded affirmatively to question B2 of the suicidality module, which evaluates passive suicidal ideation in the past 30 days. The total score from the suicidality module of the MINI 7.0.2 interview was designated as the "suicide risk score (suicidality score)" for correlation analysis with psychological pain, hopelessness, and other suicide risk factors. Additional instruments included the Beck Depression Inventory II (Gomes-Oliveira et al., 2012), Beck Hopelessness Scale (Cunha, 2001), Psychache Scale (Campos et al., 2018), and Pittsburgh Sleep Quality Index (Bertolazi et al., 2011), to investigate suicide risk factors.

Statistical analysis

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS version 29). Descriptive statistics (means, standard deviations, frequencies, and percentages) were calculated for the entire sample, as well as for two subgroups categorized by suicide risk presence or absence. Mean differences between independent groups were assessed using the student's t-test. For categorical variables, the Chi-square test was applied, or Fisher's Exact test was used when expected frequencies in any of the cells of a contingency table were below five. Pearson correlation analyses were conducted between numerical variables related to suicidality scores and factors such as the severity of depressive symptoms, severity of hopelessness, psychological pain, and sleep quality. A p-value of less than 0.05 was considered statistically significant for all comparative tests. Regression analyses were also performed to identify predictive factors associated with passive and active suicidal ideation and overall suicidality scores.

3. Results

The total sample comprised 50 women diagnosed with FM according to the ACR criteria 2010 (Wolfe et al.,2010), with an average age of 50.24 (± 8.66) years. Among these, 20 women were classified as being at risk of suicide, yielding a prevalence rate of 40% for suicide risk within the sample. The level of educational attainment was low, with an average of 5.90 (± 5.44), years of schooling. Approximately half of the sample (54%) reported being in a marital relationship. The group at risk of suicide was younger than the group without suicide risk (refer to **table 1**).

Regarding lifestyle factors, only two patients were smokers (4%), two reported occasional alcohol consumption (4%), and eleven (22%) engaged in regular physical activity. More than half of the participants (56%) had systemic arterial hypertension, and nearly one quarter of the sample had diabetes mellitus (24%). Notably, all patients with diabetes mellitus were in the group without suicide risk (refer to **table 1**).

The prevalence of a current major depressive episode within the general sample was markedly high (64%), especially among FM patients at suicide risk (80%). The prevalence of bipolar affective disorder was also significantly elevated in the suicide risk group (40%; odds ratio: 6.0). The average score on the Beck Depression Inventory-II (BDI-II) was high for the total sample (22.47 ±10.98) and higher among women at

Table 1. *Sociodemographic and Clinical Characteristics of Women with Fibromyalgia According to Suicide Risk*

Variables, Mean (SD)	Total (N=50)	Suicide Risk (N=20)	No Suicide Risk (N=30)	t test (p value)
Age, Mean (SD)	50.24 (±8.66)	46.95 (±8.51)	52.43 (±8.17)	-2.28 (0.02)*
Years of Schooling, mean (SD)	5.90 (±5.44)	5.75 (±5.05)	6.00 (±5.77)	-0.15 (0.87)
BDI[1], mean (SD)	22.47(±10.98)	32.36 (±8.68)	16.00 (±6.64)	7.38 (0.00)**
BHS[2], mean (SD)	8.86 (±5.05)	12.10 (±4.78)	6.70 (±4.00)	4.31(0.00)**
Psychache Scale, mean (SD)	34.61 (±11.75)	41.89 (±11.48)	30.00 (±9.49)	3.93(0.00)**
				X^2 (p value)
Lives with a Partner (%)	27 (54.0)	10 (50.0)	17 (56.6)	0.215ª (0.64)
Smoking (%)	2 (4.0)	0 (0.0)	2(6.6)	1.389ª (0.23)
Alcohol Consumption (%)	2 (4.0)	0 (0.0)	2 (6.0)	1.389ª (0.23)
Physical Activity (%)	11 (22.0)	3 (15.0)	8 (26.6)	0.952ª (0.32)
SAH[3]	28 (56.0)	9 (45.0)	19 (63.3)	1.637ª (0.20)
Diabetes Mellitus (%)	12 (24.0)	0 (0.0)	12 (40.0)	10.526ª (0.00)**
Major Depressive Episode, (%)	32 (64.0)	16 (80.0)	16 (53.3)	5.426ª (0.02)*
Bipolar Affective Disorder, (%)	11 (22.0)	8 (40.0)	3 (10.0)	6.294ª (0.01)*

[1]Beck Depression Inventory.
[2]Beck Hopelessness Scale. [3]Systemic Arterial Hypertension.
*p<0.05   **p<0.01

suicide risk (32.36 *vs.* 16.00; p<0.01). Similarly, the average hopelessness score was greater in the suicide risk group compared to the no suicide risk group (12.1 *vs.* 6.7; p<0.01). Elevated psychache scores were also noted in the FM patients studied, with higher scores observed among those at risk of suicide (41.89 *vs.* 30.00; p<0.01) as indicated in **table 1**.

In our study, 14 (28%) patients reported experiencing active suicidal ideation. Utilizing the analytical approach detailed in **table 1**, now stratifying the groups based on the presence of active suicidal ideation, we found that the existence of a current major depressive episode was associated with more than 11-fold increase in the likelihood of reporting active suicidal ideation (Fisher´s exact test p-value <0.01, odds ratio: 11.63, 95% CI: 1.37 - 98.53). In contrast, active suicidal ideation was not significantly associated with a diagnosis of bipolar disorder (Fisher´s exact test p-value: 0.48). Comparative analyses of mean scores

revealed significant differences between the groups with and without active suicidal ideation. The BDI-II scores (t= 4.82, p<0.001, 95% CI:8.06 - 19.63, Hedges´g: 1,50), the BHS scores (t= 4.59, p<0.001, 95% CI: 3.45 - 8.84, Hedges´g: 1.42), and the Psychache Scale scores (t= 3.66, p<0.001, 95% CI: 5.48 - 18.81, Hedges´g: 1.14), all showed substantial and statistically significant differences, indicating noteworthy effect sizes across the measures.

Disturbed sleep is a diagnostic criterion for FM, and as expected, our sample exhibited a pronouncedly high mean PSQI total score (13.54 ± 3.60). All participants were categorized at a minimum as poor sleepers. A significant difference between the groups with or without passive suicidal ideation was observed solely in the frequency of hypnotic medication usage (refer to **table 2**). No significant distinctions were found in the comparative analysis between groups with or without active suicidal ideation regarding sleep parameters.

Table 2. *Comparative Analysis of the Pittsburgh Sleep Quality Indices (PSQI) in Women with Fibromyalgia According to Suicide Risk*

Variables, Mean (SD)	TOTAL (N=50)	Suicide Risk (N=20)	No Suicide Risk (N=30)	t test (p value)
Sleep Quality	1.88 (±0.79)	1.95 (SD0.94)	1.83 (±0.69)	0.50 (0.61)
Sleep Latency	2.12 (±0.98)	2.05 (±1.05)	2.16 (±0.94)	-0.40 (0.68)
Sleep Duration	1.80 (±1.22)	1.70 (±1.26)	1.86 (±1.22)	-0.46 (0.64)
Sleep Efficiency	1.30 (±0.99)	1.10 (±0.91)	1.43 (±1.0)	-1.16 (0.25)
Night Sleep Alteration	2.26 (±0.52)	2.30 (±0.57)	2.23 (±0.50)	0.43 (0.66)
Sleep Medication	2.20 (±1.24)	2.65 (±0.93)	1.90 (±1.34)	2.32 (0.02)*
Drowsiness and Daytime Sleep Dysfunction	2.02 (±0.91)	2.25 (±0.85)	1.86 (±0.93)	1.46 (0.14)
Total Score	13.54 (±3.60)	13.90 (±2.97)	13.30 (±4.00)	0.57 (0.56)

*p<0.05

The correlation analysis between suicidality mean scores (as determined by the suicidality module of the Mini International Neuropsychiatric Interview - MINI - 7.0.2) and mean scores of BDI-II, BHS, PSQI, and the Psychache Scale (PS) revealed positive and moderate correlations between suicidality scores and both the severity of depressive symptoms and hopelessness. Additionally, a weak positive correlation was noted with the severity of psychological pain. Furthermore, moderate positive correlations were observed between the severity of depressive symptoms with hopelessness scores, psychological pain, and sleep quality scores. Thus, it can be asserted that more severe depressive symptoms correlate with heightened hopelessness, more intense psychological pain, and diminished sleep quality. Similarly, more profound feelings of hopelessness are associated with increased psychological pain and poorer sleep quality (see **table 3**).

Table 3. *Pearson´s correlation coefficient analysis between suicidality scores and BDI-II, BHS, PSQI, and psychache scale scores*

	SUI	**BDI-II**	**BHS**	**PSQI**	**PS**
SUI[a]	1	0.561***	0.532***	0.173	0.349*
BDI-II[b]		1	0.564***	0.310*	0.648***
BHS[c]			1	0.423**	0.312*
PSQI[d]				1	0.130
PS[e]					1

[a] SUI (Mini International Neuropsychiatric Interview 7.0.2, Suicidality Score), [b]BDI-II (Beck Depression Inventory-II), [c]BHS (Beck Hopelessness Scale), [d]PSQI (Pittsburgh Sleep Quality Index), [e]PS (Psychache Scale)
*p<0.05 **p<0.01 ***p<0.001

A binary logistic regression analysis was performed to ascertain the predictive value of the severity of depressive symptoms, hopelessness, and psychological pain for suicidal ideation – both passive and active - in women diagnosed with fibromyalgia. The models revealed that both forms of suicidal ideation were significantly associated with these factors: for passive suicidal ideation, $X^2(3)$: 43.41, p<0.001, with a Nagelkerke R^2 of 0.801; for active suicidal ideation, $X^2(1)$: 12.99, p<0.001, with a Nagelkerke R^2 of 0.338. Specifically, the severity of depressive symptoms emerged as a significant predictor of passive suicidal ideation (odds ratio = 1.486; 95% confidence interval, 1.017 - 2.170), but not for hopelessness. Conversely, for active suicidal ideation, hopelessness severity was a significant predictor (odd ratio = 1.356; 95% CI, 1.049 – 1.753), while the severity of depressive symptoms was not. The severity of psychological pain did not predict either form of suicidal ideation in the analyses conducted (refer to **table 4**).

A hierarchical multiple linear regression analysis was performed to determine whether the severity of depressive symptoms, hopelessness, and psychological pain could predict the risk of suicide among women with fibromyalgia. The resultant model was statistically significant F(3,44)= 9.525; p< 0.001), explaining 39.4% of the variance ($R^2 = 0.394$) and exhibiting satisfactory independence of residuals as indicated by a Durbin-Watson statistic of 2.303. Of the variables assessed, only the severity of hopelessness emerged as a predictor of suicidality (ß= 0.341; t= 2.391; p= 0.021) (refer to **table 5**).

Table 5. *Multiple regression analysis of predictive factors of suicidality among fibromyalgia women*

	Beta standard Coefficient	T	p value	Colinearity
				Tolerance
Psychological Pain	0.026	0.168	0.868	0.575
Hopelessness	0.341	2.391	0.021	0.676
Depression	0.352	1.974	0.055	0.433

4. Discussion

The present study sought to explore the extent to wich psychache and hopelessness serve as reliable markers for assessing the risk of suicide in female fibromyalgia (FM) patients. The average age of participants in this study was 50.2 years (±8.6). Notably, the group at risk for suicide was found to have a significantly lower mean age (46.9 years, ±8.5) compared to the non-risk group (52.4 years, ±8.2). However, both groups fall within a comparable age bracket, which is a critical consideration for clinical practice. The total sample presented a low level of schooling with a mean age of 5.9 (±5.4) years of education, but no difference was observed between groups. Over half of the patients (54%) reported cohabitation with a partner, although this did not significantly distinguish between the groups at risk and not at risk for suicide. Previous research reported that female gender, younger age, single status and lower income are demographic predictors of suicidal behavior in the general population (Rizvi et al., 2017). However, among chronic pain patients, sociodemographic variables are less predictive of suicidal behavior (Ordóñez-Carrasco et al., 2021). Calandre et al. (2021) divided 257 FM patients into 3 groups based on marital status and found that those with poor marital adjustment had a higher prevalence of suicidal ideation and more severe depressive symptoms compared to the single and good marital adjustment groups. In our sample, no significant differences emerged in marital status, which may be due to our study not differentiating the quality

Table 4. *Binary Logistic Regression for Predictive Factors of Suicidal Ideation Among Fibromyalgia Women*

Passive Ideation	B	S.E.	Wald	p value	Odds Ratio	95% CI
Psychological Pain	0.145	0.098	2.200	0.138	1.156	0.95 - 1.40
Hopelessness	0.563	0.345	2.664	0.103	1.755	0.89 - 3.45
Depression Severity	0.396	0.193	4.195	0.041	1.486	1.02 - 2.17
Active Ideation						
Psychological Pain	0.102	0.054	3.521	0.061	1.108	0.99 - 1.23
Hopelessness	0.305	0.131	5.420	0.020	1.356	1.05 - 1.75
Depression Severity	0.072	0.065	1.227	0.268	1.075	0.95 - 1.22

of partners´ relationships.

Prevalence rates of passive and active suicidal ideation, in our sample, were 40% and 28%, respectively. A recent meta-analysis of 13 studies determined a pooled rate for suicidal ideation of 29.6%. They reported that suicidal ideation rates derived from only 4 studies, ranging from 1.1% to 54.6%. Passive suicidal ideation ranged from 39.7% to 41.0% which is closely aligned with our results (Adawi et al., 2021). Jimenez-Rodrigues et al. (2014) found a prevalence of passive suicide ideation of 41%, in a study with a sample of 44 participants, 93.2% females. While Calandre et al. (2015), reported a prevalence of passive suicide ideation of 39.7%. The sample was larger than ours, with 373 individuals (353 females and 20 males). One cross-sectional study of 117 female FM patients, identified a prevalence rate of suicidal ideation of 26.5% (Triñanes et al., 2015).

In the clinical context, various factors such as stressful life events, heightened levels of hopelessness, social withdrawal, perceived burdensomeness, psychiatric comorbidities, depressive symptoms, as well as physical and psychological pain, have been associated with an increased risk of suicidal behavior (Calati et al., 2015; Rizvi et al., 2017). Psychiatric comorbidity in FM seems to be the rule, not the exception, however, given that the majority of the literature comprises cross-sectional or retrospective studies, there remains an uncertainty regarding the causality and temporal progression of this comorbidity (Levine & Horesh, 2020).

A current major depressive episode was identified in 64% of our participants, which corresponded to an over 11-fold increase in the likelihood of active suicidal ideation. Prior research indicated a pooled point prevalence of depression in FM patients at 25% when assessed with structured clinical interviews, and a lifetime prevalence of 65%. In contrast, self-administered instruments revealed a pooled point prevalence of 45% (Loge-Hagen et al., 2019). Our findings, derived from the use of structured interview (MINI 7.0.2) and showed a high point prevalence rate. In our total sample, the mean BDI-II score was 22.5 (±11.0), indicating moderate to severe depression on average. More specifically, the group with passive suicidal ideation presented a mean BDI-II score of 32.4 (±8.7) points, which suggesting severe depression symptoms. These figures align with previous studies assessing the severity of depression through BDI scores, such as the study by Triñanes et al. (2015) with 117 FM female patients that reported an average BDI score of 20.5 (±9.8) points, and the case-control study by Palomo-López et al. (2019) which documented an average BDI score of 19.3 (±11.2) in FM patients compared to 6.4 (±5.3) in healthy controls. Significantly, Triñanes et al. (2015) decomposed BDI scores into 3 symptom clusters and discerned self-blame domain as a particularly relevant factor to suicide risk in FM patients (more than the somatic cluster). The self-blame dimension comprised a sense of failure, guilt, feeling of punishment, sense of disappointment, and self-criticism (Triñanes et al., 2015).

Regarding Bipolar Affective Disorder, our investigation revealed a 22% prevalence in the study sample. This prevalence aligns with previous research indicating a high comorbidity rate of bipolar disorder among FM patients. Our findings were comparable to those reported by a previous study, of 305 FM patients (82.7% female), with mean age of 43.5 (±11.7) years, where 16.4% screened positive for bipolar disorder measured by Mood Disorder Questionnaire (MDQ)

and 21.3% were identified with bipolar disorder, either through the MDQ or via self-reported diagnosis (Gota et al., 2015). A meta-analysis assessing the prevalence of bipolar disorder in fibromyalgia identified a pooled prevalence rate of 21.7% across 8 studies, encompassing a total of 806 FM patients, which was very similar to our findings (Kudlow et al., 2015). A subsequent review recalculated the prevalence of bipolar disorder among FM patients using random effects meta-analysis, with a 95% CI across the same 8 studies, yielding a lower prevalence rate of 15.2%, with considerable heterogeneity, $I^2= 95\%$ (Stubbs, 2016). A pivotal observation from our data was the 6-fold increase in likelihood of passive suicidal ideation among bipolar disorder patients compared to the FM women without bipolar disorder. This ratio was slightly lower than the 7.5-fold increase reported previously but underscores the heightened vulnerability of FM patients with comorbid bipolar disorder to suicidality (Kudlow et al., 2015).

Sleep disturbances were pervasive in our sample, with no significant differences in PSQI scores between those at risk for suicide and those not at risk. Again, our results were like those reported by Triñanes et al. (2015), which found a mean PSQI total score of 13.7 (±4.5). In our study, the only domain that diverged between the groups pertained to the use of sleep medication. Furthermore, the outcomes of the correlation tests revealed that poorer sleep quality was correlated with more severe depressive symptoms and heightened levels of hopelessness. Ten of 16 studies included in a systematic review about the association between pain and sleep among FM patients, used the PSQI to subjectively assess sleep domains. They discussed that pain and sleep share a bidirectional relationship and pointed that this relationship could interact with depressive symptoms (Keskindag & Karaaziz, 2017).

FM severity, the presence of comorbidities such as obesity, anxiety, depression, and sleep problems, had already been described as contributing factors that increase suicide risk (Adawi et al., 2021; Celepkolu et al., 2021). Our analysis revealed that suicidality had a moderate correlation with the severity of depression and the extent of hopelessness, and a weaker correlation with psychological pain. The association of psychological pain with increased depressive symptoms and hopelessness aligns with the findings of preceding studies (Campos & Holden, 2015; Conejero et al., 2018; Verrocchio et al., 2016). Notably, while psychache scores differed between groups with and without suicide risk, our regression analysis did not validate psychological pain as a predictive factor of suicidal ideation. This may challenge the three-step theory, which posits psychache, as a primary predictor of suicide, suggesting that further research is needed to clarify its role in FM patients. In the context of suicide risk in FM, to the best of our knowledge, only one previous study, with 151 participants, successfully tested psychache (together with hopelessness) as a transdiagnostic psychological marker to discriminate between low and high vulnerability suicide profiles, based on ideation-to-action theories (Ordóñez-Carrasco et al., 2021). This study reported higher psychache scale scores and similar levels of hopelessness mean scores in comparison to our findings. Intriguingly, both studies, Ordóñez-Carrasco et al. (2021), and our own, indicated that groups with lesser or no suicide vulnerability exhibited higher mean psychache scores than the general population (Ducasse et al., 2018). Our regression analysis model showed that the severity of depressive symptoms was a significant predictive factor

for passive suicidal ideation whereas hopelessness severity was a predictive factor for active suicidal ideation and for suicidality. Hopelessness (defined as the expectation that a future relief from pain will never occur) has already been identified as a relevant factor to the understanding of physical pain-suicidality link, alongside other factors such as helplessness, pain catastrophizing, pain avoidance behaviors, and problem-solving deficits (Rizvi et al., 2017). Despite this important role in suicidal behavior, both psychological pain and hopelessness have not been adequately studied among FM patients (Ordóñez-Carrasco et al., 2021).

The present study has several limitations that warrant consideration. Firstly, the relatively small sample size may constrain the generalizability of the findings to a broader FM population. Nevertheless, it is noteworthy that the demographic and clinical characteristics of our sample resonate with those from larger, precedent studies, lending credence to our insights. Exclusively female participation, informed by the higher prevalence of FM in women, potentially limits the applicability of our results to males with FM. The cross-sectional nature of this study precludes causal inference, yet it provides a foundational understanding that may stimulate further discourse on suicidal ideation in FM. Absent a longitudinal framework, the dynamics of psychological pain, hopelessness, and suicide risk over time remain elusive, emphasizing the need for future research with repeated measures. Additionally, we did not analyze the data using an instrument that measures the frequency and severity of physical pain, which could provide a more comprehensive understanding of the relationship between physical and psychological symptoms in FM. We speculate that more severe physical pain may be associated with a higher risk of suicide, underscoring the importance of future studies to explore this potential link.

The utilization of self-report measures introduces the possibility of information bias, as responses may be influenced by recall inaccuracies or a propensity toward socially acceptable reporting. It is also possible that additional confounding variables, such as the use of antidepressant and analgesic medications, non-pharmachological interventions, variations in FM severity, and other psychiatric comorbidities, were not fully captured in our analysis.

Although this study is subject to the aforementioned limitations, it nonetheless makes a valuable contribution to the nascent body of literature exploring the intricate interplay between psychological pain, hopelessness, and suicidality in FM patients. It underscores the imperative for more extensive, robust research to elucidate these complex relationships and inform clinical practice.

5. Conclusion

The study provides insights into the sparse literature on factors associated with different types of suicidal ideation in women with fibromyalgia (FM). The findings revealed heightened prevalence of major depressive episodes and bipolar disorder diagnoses, coupled with an increased incidence of suicidal behavior. This underscores the significant mental health burden that accompanies FM. The present research demonstrated that psychological pain correlated with hopelessness, and suicidal ideation. Although it did not emerge as a predictive factor for suicidal ideation or suicide risk, its correlation with severity of depressive symptoms and hopelessness indicates that it is a relevant dimension of suffering that should continue

to be investigated in individuals with FM. Importantly, the study delineates the differential predictive roles of depressive symptom severity and hopelessness: the former being a significant predictor of passive suicidal ideation, and the latter a predictor of active suicidal ideation and overall suicidality. These findings have implications for clinical practice, highlighting the need for targeted interventions focusing on mood disorder symptomatology and the mitigation of hopelessness in managing suicidality risk among FM patients.

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