# The Association of Socioeconomic Status and Symptom Severity in Persons with Fibromyalgia

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***ABSTRACT.*** ***Objective.*** Although persons with lower socioeconomic status (SES) generally have poorer health status for many medical conditions, the association of SES with symptom severity in fibromyalgia (FM) is unknown. The subjective symptoms of FM may be influenced by personal perceptions, and environmental and psychosocial factors. Therefore SES may influence symptom expression and severity.

***Methods.*** Data for this cross-sectional analysis were obtained from a real-life prospective cohort of 246 patients with FM categorized according to level of education: high school graduates or less (Group 1; n = 99), college graduates (Group 2; n = 84), and university graduates (Group 3; n = 63). The association between level of education, a well-validated measure of SES, and disease severity, functional status, and quality of life were examined.

***Results.*** Lower education was significantly associated with older age ($p = 0.039$), current unemployment ($p < 0.001$), and more severe disease, as measured by patient global assessment disease activity ($p = 0.019$), McGill Pain Questionnaire ($p = 0.026$), Pain Disability Index ($p = 0.031$), Pain Catastrophizing Scale ($p = 0.015$), Health Assessment Questionnaire ($p = 0.001$), and Fibromyalgia Impact Questionnaire ($p = 0.002$), but not pain level, anxiety, or depression. These associations remained significant even upon adjusting for age and sex differences.

***Conclusion.*** Patients with FM and lower SES, as assessed by education level, reported greater symptom severity and functional impairment, despite reporting similar levels of pain, depression, and anxiety. Although FM spans all socioeconomic groups, factors other than specific disease characteristics or mental status, appear to play an important role in patients' perception of illness. (First Release June 15 2014; J Rheumatol 2014;41:1398–1404; doi:10.3899/jrheum.131515)

*Key Indexing Terms:*
SOCIOECONOMIC STATUS
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Fibromyalgia (FM) is a pain syndrome presenting mainly in women in the middle productive years of life, affecting about 2% of the population, with some studies reporting higher prevalence[1,2,3,4,5]. In addition to widespread body pain, patients experience a variety of other somatic symptoms contributing to impaired quality of life. Fatigue, sleep difficulties, and some degree of mood disorder is likely present to a variable degree in most patients. These specific symptoms, in addition to pain, have a direct effect on function. Considerable disability is reported for FM, with up to a third of persons with FM receiving disability pension[6,7].

Persons with poorer socioeconomic status (SES) have less favorable health outcomes for many diseases. This could be explained by such differences as access to medical care, health-related behaviors, poor health literacy, low adherence to management recommendations, and financial constraints. Among the best studied health conditions that could be affected by low SES are cancer, cardiac disease, diabetes, and rheumatic diseases such as systemic lupus erythematosus (SLE)[8]. In addition, musculoskeletal pain, including chronic widespread pain, is more prevalent in adults with poorer SES[9]. This relationship is partly explained by such factors as psychological distress, poor mental health, and adverse life events[9]. Beyond these more evident reasons for differences in health status, sociocultural factors may also play a role. However, it is not known whether the severity of symptoms in persons with FM may differ depending on SES.

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SES may be measured by numerous variables, with highest level of education currently believed to be accurate and consistent, and with reported good validity and reliability[10,11]. Occupation and current income are also measurements of SES, although education is considered a more stable indicator because highest level of education is usually attained prior to the onset of illness, with less chance for reverse causation, whereby disease can adversely affect income by reducing employability[11]. Thus, there is a direct correlation between the level of education and higher SES. Our aim in this study was to examine the association between level of education, as our preferred measurement of SES, and the severity of symptoms in patients with FM seeking help in a tertiary care clinic.

## MATERIALS AND METHODS

*Patients.* This was a prospective observational study of a cohort of patients with FM who were referred to the Alan Edwards Pain Management Unit, a tertiary care multidisciplinary center, from January 2005 to March 2013. The study cohort has been described[12]. Patients with a referring diagnosis of FM were invited to join the cohort once the diagnosis of FM had been clinically confirmed by a rheumatologist or pain physician. Excluded were patients diagnosed with another primary cause of pain, even if they had an associated diffuse pain syndrome; who refused to participate; or who were unable to answer questionnaires in French or English. The Registry is approved by the institutional review board of the Montreal General Hospital, and all patients signed informed consent prior to enrollment.

There was no predetermined treatment intervention in this study, and patients were treated according to best clinical practice with a variety of modalities, both pharmacological and nonpharmacological, in an individually tailored approach. Education level was used as the measure of SES and patients were stratified according to their education level as follows: high school graduates or less (Group 1), college graduates (exclusively in the Province of Quebec, Canada, college is postsecondary education, required for university admission, but can also constitute a technical qualification; Group 2), and university graduates (Group 3).

*Measurements.* Baseline data included demographic, disease- related, and psychosocial information. Demographic information included age, sex, education level, marital status, current employment, and disability status. Symptom and disease-related information included measurements of pain, quality of life, function, mood, and the number of pain medications used.

*Pain measurements.* Current pain was measured using the following validated tools in both English and French: pain intensity with a 10-cm visual analog scale (VAS); quality of pain with the McGill Pain Questionnaire (MPQ), a validated questionnaire comprising 78 descriptor words arranged into 20 subgroups and measuring the sensory, affective, evaluative, and miscellaneous components of pain[13]; and pain interference with the Pain Disability Index (PDI), a generic measure of pain-related interference with role functioning in 7 areas (occupational, home/family, recreational, social, sexual, activities of daily living, and life support), all rated on an 11-point numeric scale (0: no disability, up to 10: total disability)[14].

*Measurements of quality of life and function.* Quality of life and function were measured by the Fibromyalgia Impact Questionnaire (FIQ), a condition-specific, reliable, and validated measure for patients with FM. This tool generates a total score out of 100, with higher scores representing poorer quality of life[15]. Patient global assessment (PGA) of disease was measured by a 10-cm VAS. Function was measured by the Health Assessment Questionnaire (HAQ), a generic questionnaire that measures outcome in patients with rheumatic diseases[16].

*Psychological variables.* Mood was assessed using the Arthritis Impact Measurement Scale for anxiety and depression[17]. Catastrophizing was measured with the Pain Catastrophizing Scale (PCS), a 13-item questionnaire that addresses thoughts and feelings related to pain, with scores ranging from 0 to 52[18].

*Statistical analysis.* Descriptive statistics, including the mean and SD for continuous scale variables and frequency distributions for categorical scale variables, were produced for all patient measures. In addition to the total study cohort, all analyses were stratified by SES. Between-group differences in categorical and continuous scale variables were assessed for statistical significance with the chi-square test and 1-way ANOVA, respectively. For statistically significant results, posthoc pairwise comparisons were performed using Bonferroni correction to adjust for multiplicity. Multiple linear regression was used to assess between-group differences in disease severity while adjusting for potential confounders. The minimum level of statistical significance was *a priori* defined at 5%. All statistical analyses were performed using SPSS 12.0 for Windows (SPSS Inc.).

## RESULTS

Two hundred forty-six patients were recruited, of whom 99 (40.2%) were high school graduates or less (Group 1), 84 (34.1%) had college education (Group 2), and 63 (25.6%) were university graduates (Group 3). Demographic and disease-related variables for the whole group are shown in

*Table 1.* Baseline demographic and disease-related information for 246 patients with fibromyalgia. Data are n (%) or mean ± SD.

| Characteristic | Total, n = 246 |
|---|---|
| Age, yrs | 47.8 ± 10.4 |
| Sex | |
| Female | 224 (91) |
| Male | 22 (9) |
| Marital status | |
| Single | 53 (22) |
| Married | 153 (63) |
| Divorced | 27 (11) |
| Widowed | 9 (4) |
| Employment status | |
| Employed | 89 (36) |
| Unemployed | 80 (33) |
| Disabled | 77 (31) |
| Cigarette use | 56 (23) |
| Cannabinoid use | 18 (7) |
| Alcohol abuse | 11 (5) |
| Drug abuse | 11 (5) |
| Medication count | 2.6 ± 1.3 |
| Alternative product use | 13 (5) |
| Complementary practitioner treatment | 37 (15) |
| Pain duration, yrs | 10.8 ± 9.8 |
| Pain VAS | 6.5 ± 2.3 |
| PGA | 6.7 ± 2.1 |
| MPQ | 41.0 ± 15.1 |
| PDI | 37.6 ± 14.5 |
| PCS | 29.3 ± 12.2 |
| FIQ | 67.0 ± 16.8 |
| HAQ | 1.19 ± 0.6 |
| AIMS anxiety | 6.3 ± 1.8 |
| AIMS depression | 4.9 ± 1.8 |

VAS: visual analog scale; PGA: patient global assessment of disease activity; MPQ: McGill Pain Questionnaire; PDI: Pain Disability Index; PCS: Pain Catastrophizing Scale; FIQ: Fibromyalgia Impact Questionnaire; HAQ: Health Assessment Questionnaire; AIMS: Arthritis Impact Measurement Scale.

Table 1. The mean age of the study participants was 47.8 ± 10.4 years, 91.1% were females, and the mean disease duration was 10.8 ± 9.8 years. Thirty-six percent of the patients were currently employed and 31% were receiving disability benefits. The mean medication count for management of FM was 2.6 ± 1.3 per patient.

When the group was stratified according to level of education, lower education was significantly associated with older age ($p = 0.039$) and current unemployment ($p < 0.001$; Table 2). Other than a history of drug abuse, which was more common for patients in Group 1, there were no other significant demographic differences between groups. Current medication categories and total number of medications used per patient were similar across groups. Higher education was associated with greater use of alternative medicine products ($p < 0.001$), as well as treatments by a complementary practitioner, which included chiropractic, massage, or osteopathic treatments ($p = 0.021$).

Lower education level was significantly associated with poorer health status as indicated by PGA, MPQ, PDI, PCS, FIQ, and HAQ (Table 2). These associations remained significant even after adjusting for age and sex differences (Table 3). Interestingly, pain VAS, anxiety, and depression did not significantly differ among the 3 groups, although pain did show a nonsignificant trend (Table 2).

## DISCUSSION

In our study, we have observed that patients with FM and lower SES, as measured by a lower level of education, had greater symptom severity, worse quality of life, and poorer function than those with higher education. Although measurements for depression and anxiety were high for the cohort as a whole, mood disorder did not differ between the groups stratified for education level. Because all measures of disease status in FM are obtained by subjective patient report, these observations may either represent patients'

*Table 2*. Baseline demographic information and disease-related information for 246 patients with fibromyalgia stratified according to education level. Data are n (%) or mean ± SD.

| Characteristic | Group 1: High School or Less, n = 99 | Group 2: College, n = 84 | Group 3: University, n = 63 | p |
|---|---|---|---|---|
| Age, yrs | 49.9 ± 10.8 | 46.5 ± 9.9 | 46.4 ± 9.9 | 0.039 |
| Sex | | | | 0.035 |
| Female | 90 (91) | 81 (96) | 53 (84) | |
| Male | 9 (9) | 3 (4) | 10 (16) | |
| Marital status | | | | 0.558 |
| Single | 17 (17) | 19 (23) | 17 (27) | |
| Married | 63 (64) | 53 (65) | 37 (60) | |
| Divorced | 12 (12) | 8 (10) | 7 (11) | |
| Widowed | 6 (6) | 2 (2) | 1 (2) | |
| Employment status | | | | < 0.001 |
| Employed | 20 (20) | 35 (42) | 34 (54) | |
| Unemployed | 47 (48) | 20 (24) | 13 (21) | |
| Disabled | 32 (32) | 29 (35) | 16 (25) | |
| Cigarette use | 27 (27) | 21 (25) | 8 (13) | 0.082 |
| Cannabinoid use | 8 (8) | 5 (6) | 5 (8) | 0.839 |
| Alcohol abuse | 6 (6) | 5 (6) | 0 (0) | 0.138 |
| Drug abuse | 9 (9) | 1 (1) | 1 (2) | 0.016 |
| Medication count | 2.8 ± 1.3 | 2.5 ± 1.1 | 2.3 ± 1.4 | 0.108 |
| Alternative product use | 3 (3) | 2 (2) | 8 (13) | 0.009 |
| Complementary practitioner treatment | 8 (8) | 14 (17) | 15 (24) | 0.021 |
| Pain duration | 11.0 ± 10.4 | 9.7 ± 8.9 | 12.1 ± 10.1 | 0.334 |
| Pain VAS | 6.9 ± 2.4 | 6.4 ± 2.0 | 6.2 ± 2.4 | 0.152 |
| PGA | 7.1 ± 2.1 | 6.5 ± 2.1 | 6.2 ± 2.2 | 0.019[*] |
| MPQ | 43.8 ± 15.0 | 40.4 ± 14.6 | 37.4 ± 15.2 | 0.026[†] |
| PDI | 40.2 ± 14.0 | 37.1 ± 14.6 | 34.2 ± 14.7 | 0.031[‡] |
| PCS | 32.1 ± 12.7 | 27.7 ± 10.8 | 27.3 ± 12.3 | 0.015[§] |
| FIQ | 71.5 ± 14.6 | 65.3 ± 16.4 | 62.3 ± 18.9 | 0.002[ᴛ] |
| HAQ | 1.37 ± 0.6 | 1.09 ± 0.5 | 1.03 ± 0.6 | 0.001[¥] |
| AIMS anxiety | 6.6 ± 1.6 | 6.1 ± 1.9 | 6.3 ± 2.1 | 0.208 |
| AIMS depression | 5.0 ± 1.8 | 4.8 ± 1.9 | 5.1 ± 1.8 | 0.562 |

[*] Group 2 vs Group 1 = 0.144, Group 3 vs Group 1 = 0.031, Group 3 vs Group 2 > 0.999. [†] Group 2 vs Group 1 = 0.241, Group 3 vs Group 1 = 0.026, Group 3 vs Group 2 = 0.960. [‡] Group 2 vs Group 1 = 0.420, Group 3 vs Group 1 = 0.028, Group 3 vs Group 2 = 0.677. [§] Group 2 vs Group 1 = 0.043, Group 3 vs Group 1 = 0.043, Group 3 vs Group 2 > 0.999. [ᴛ] Group 2 vs Group 1 = 0.038, Group 3 vs Group 1 = 0.002, Group 3 vs Group 2 = 0.821. [¥] Group 2 vs Group 1 = 0.016, Group 3 vs Group 1 = 0.002, Group 3 vs Group 2 > 0.999. VAS: visual analog scale; PGA: patient global assessment disease activity; MPQ: McGill Pain Questionnaire; PDI: Pain Disability Index; PCS: Pain Catastrophizing Scale; FIQ: Fibromyalgia Impact Questionnaire; HAQ: Health Assessment Questionnaire; AIMS: Arthritis Impact Measurement Scale.

*Table 3*. Multiple regression for association between education level and disease severity†.

| Outcome | Education Level | Regression Coefficient* | 95% CI | p |
|---|---|---|---|---|
| PGA | College vs high school or less | –0.62 | –1.28, 0.05 | 0.068 |
| PGA | University vs high school or less | –0.90 | –1.62, –0.18 | 0.014 |
| MPQ | College vs high school or less | –3.83 | –8.32, 0.67 | 0.095 |
| MPQ | University vs high school or less | –6.24 | –11.12, –1.37 | 0.012 |
| PDI | College vs high school or less | –3.41 | –7.68, 0.86 | 0.117 |
| PDI | University vs high school or less | –6.16 | –10.79, –1.53 | 0.009 |
| PCS | College vs high school or less | –4.31 | –7.91, –0.71 | 0.019 |
| PCS | University vs high school or less | –4.89 | –8.80, –0.99 | 0.014 |
| FIQ | College vs high school or less | –6.46 | –11.41, –1.51 | 0.011 |
| FIQ | University vs high school or less | –9.33 | –14.66, –3.99 | 0.001 |
| HAQ | College vs high school or less | –0.27 | –0.46, –0.09 | 0.004 |
| HAQ | University vs high school or less | –0.31 | –0.51, –0.11 | 0.003 |

† Multiple regression performed only in measurements for which a significant association was observed in the unadjusted analysis. * Upon adjustment for age and sex. PGA: patient global assessment disease activity; MPQ: McGill Pain Questionnaire; PDI: Pain Disability Index; PCS: Pain Catastrophizing Scale; FIQ: Fibromyalgia Impact Questionnaire; HAQ: Health Assessment Questionnaire.

personal perception of symptom severity, or may truly reflect disease status. The scores observed for function and symptom severity showed a consistent and progressive increase across the 3 education groups studied, suggesting that this statistically significant finding, although modest, represents a clinically valid observation. In the absence of a biomarker for FM, disease assessment in FM is dependent on these subjective measurements, and therefore we question the influence that sociocultural factors may have on symptom report.

Lower SES, as measured by education level, has been reported to be associated with increased risk to develop a number of medical conditions, such as heart disease, hypertension, diabetes mellitus, and renal disease[19,20,21,22,23]. SES has also been shown to be associated with musculoskeletal complaints. In a British birth cohort study, with participants evaluated at age 45 years, Macfarlane, *et al* reported a greater prevalence of musculoskeletal pain in those with lower social class, although mental health and lifestyle factors were influential[9]. Similar results were reported by Bergman and colleagues, showing that widespread musculoskeletal pain was more prevalent in a cohort of Swedish population with low SES, indicated by being a low-level employee or living in poor housing conditions[24].

Although SES should not plausibly affect symptom severity in FM, it can be regarded as a specific status that may have exposed an individual to events or circumstances with psychosocial implications. In SLE, another rheumatic disease, lower SES was associated with more severe disease, but the effect was modulated by physical, emotional, and social functioning[8]. Factors that may contribute to this differential in symptom severity related to SES are abnormal illness-related behavior, low self-efficacy for disease management, less knowledge about disease, and less personal control over health. Those with lower SES may be more focused toward coping with day-to-day stressors and therefore may neglect their own personal healthcare. Indeed, more daily stressors are reported as a factor in exacerbating symptoms of FM[25].

Lower SES may reflect a poorer psychosocial wellbeing, which encompasses dimensions of psychological health as well as social functioning. Given that there is a relationship between psychological ill health and low SES, and the finding that mental ill health is associated with pain and predicts its onset, psychological health may be a mediator of the relationship between SES and pain in general. However, our findings do not support a direct association of poor mental health with lower SES, although the overall mental health of our cohort was generally poor.

SES may be assessed by a number of measures that include education, income, employment status, and occupation, with education level cited as the best SES predictor of good health[26,27,28]. Level of education is a measurement that is easily collected and is a judicious measurement for SES: it has high reliability and validity and generally remains stable after early adulthood[10]. Highest level of education is usually attained prior to onset of adult disease and therefore, as a measurement of SES, is not influenced by employability, a factor important in the context of FM where up to one-third of patients report disability. Education *per se* has been reported to have variable effect on disease severity. Lower education may influence understanding of illness as in health literacy or affect a person's behaviors, attitudes, and motivation to attain optimal health. Health literacy, defined as the ability to make and adhere to appropriate health-related decisions, encompasses variables such as the setting of the health situation and the personal skills of the patient. Health knowledge and empowerment, which contribute to health literacy, have been shown to positively affect outcome for persons with chronic diseases such as FM[29]. Improvement in health literacy may be achieved by education appropriate for the patient, avoiding medical jargon, and strategies aimed at improving self-efficacy and self-management techniques, which can promote a strong internal locus of control[29]. However, in a study of SLE, attained education was associated with a less marked risk gradient for disease severity than occupational-based SES[8]. Similarly, in a recent Canadian study of patients with systemic sclerosis, low education did not affect outcome[30]. In contrast, higher education and income protected against disability in workers with musculoskeletal impairment who accessed disability pension in Norway, but increasing age was the strongest predictor of disability[31].

FM has been described as affecting persons of all ages, in both the developed and underdeveloped world, in rural and urban settings, and across all social classes[32,33,34,35,36,37,38,39]. Persons in a lower SES in the UK were more likely to report a greater prevalence of musculoskeletal symptoms and chronic widespread pain, although severity of complaint was not assessed, whereas the prevalence of 4.4% for FM in a Brazilian lower SES was similar to reports for other socioeconomic groups[9,39]. In a Swedish study, patients with FM recruited in primary healthcare were more likely than controls from the general population to have lower education and income and to be unemployed, but without comment on severity of symptoms[40].

The way in which SES may affect expression of disease could be explained by a number of factors. Tangible barriers to optimal healthcare for those in the lower economic class may be the more obvious reasons, such as limited access to healthcare, challenges to adherence to medical recommendations, indirect healthcare costs owing to lost time from work, transportation and child care costs, and limited financial resources to practice good health strategies that include good nutrition, participation in health-related physical activity, and access to nonphysician healthcare providers. This premise is supported by our finding of greater use of alternative products, as well as treatments by nonphysician practitioners, in our patients in a higher SES. However, other factors may be operative. Strain on personal resources, both material and psychosocial, may preclude the individual from effectively attending to personal needs. The societal concept that FM equates with disability likely promotes an external locus of control, which may in turn compromise abilities to cope with stressors, whereby passive healthcare practices are prevalent and promoted.

As most patients with FM are women in the middle years of life, effect on productivity and employment can be expected. Similar to others, we have observed a range of employment rate of 20% to 54%, with a gradient according to education, with those with higher education more likely to be employed. In a telephone survey of 241 women with FM, employment was associated with more favorable health status that was retained over 5 years, attesting to the maintenance of health during employment and the encouragement for retention in the labor force[41]. This study also associated lower income with more severe pain, fatigue, depression, and impaired function, reflecting the advantage of higher SES[41].

In persons with illness, higher education may facilitate retention in the workforce and in turn provide a socioeconomic advantage. Those with higher education are more likely to be employed in occupations with greater work autonomy, which might allow more control over working hours, ability to pace, and fewer physical demands. In contrast, those with lower education may be less motivated toward attainment of optimum health, which if achieved could translate into the social requirement to remain in the workforce in an occupation less favorable to the employee. Similarly, the differential for financial compensation for those with lower education between remaining in the work force and receiving compensation for either disability or social security benefits may be so small that the effort to remain employed is financially not worthwhile. In line with this concept, our study has demonstrated that those with lower education, in addition to reporting more severe symptoms and impaired functional status, were less likely to be employed.

In an Internet survey posted on the National Fibromyalgia Association Website answered by 1702 respondents with self-reported FM, of whom 51% were working, employment, higher income, and education were associated with fewer symptoms[42]. Work modifications, including reduced or flexible working hours, were present for over half of those working[42]. On the basis of this survey, the authors suggest that modified work conditions could facilitate retention in the workforce. Therefore, employment may be viewed as a protective factor for FM or, alternatively, it may be interpreted that those with less severe disease may be more able to work. Employment status promotes SES from the family income perspective. Those with lower income may be more compromised by being less able to afford medications, having more limited access to nonphysician healthcare providers, and having more difficulty attending medical appointments.

In a study based on mailed questionnaires, Wolfe, *et al*[6] observed that 26.5% of people with FM received government disability payments compared to 2.5% in the general population. Patients that were unemployed or receiving government disability payments reported higher levels of depression, pain, and anxiety. Contrary to these findings, and other studies of chronic pain, we did not observe a significant difference in mood, particularly depression, among the 3 study groups. Patients, regardless of their education level, generally scored high on depression and anxiety. This could be explained by more severe symptomology present in patients seen in a tertiary care setting.

Although speculative at present, the results of this study could assist healthcare professionals in planning the therapeutic approach for patients with FM. It is hypothesized that patients reporting the same levels of VAS pain, who differ in their educational levels, might benefit from different therapies, tailored for their individual SES: less educated patients could benefit more from psychological interventions and nonphysician management, whereas those more educated might be more amenable to directly focused pain interventions. This patient-tailored management approach is in line with the recommendations formulated in the 2012 Canadian Fibromyalgia Guidelines[43].

Some limitations to our study must be acknowledged. First, because we did not compare education levels of our patients to the general Canadian population, we are unable to comment on any possible differences that may exist between our patients and the population. Also, persons with FM may differ in disease severity, with more severe symptoms present in those consulting specialists compared to those seen in a primary care setting or persons who do not seek medical consultation at all. Additionally, other comorbidities may have been present to influence global symptom report. Although the primary and major pain complaint of this cohort was diffuse widespread pain, and those with a predominant other cause for pain were not included in the cohort, we do acknowledge the current understanding of FM as a polysymptomatic condition with a variety of other somatic symptoms present to a variable degree in individual patients. Therefore, studies of FM may be confounded by the patient population characteristics. Lastly, the single-center design of this patient cohort provides an overview of patients from a restricted geographical location and might not be applicable to patients from other locations.

Our study extends the concept of the adverse effect of lower SES as measured by highest education level attained on the health status and function in patients with FM. Because FM is the prototype of a condition characterized by subjective symptoms only, patient's personal perceptions of illness and ability to cope with ill health may play a vital role in treatment strategies. Although FM spans all socioeconomic groups, societal factors rather than specific disease characteristics or mental status may affect the outcome.

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