

# Fibromyalgia Being Strongly Associated with Manual Labor Among Male Patients Attending Rheumatology Clinic

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## Abstract

**Introduction:** Fibromyalgia is a common chronic pain syndrome, associated with different risk factors, including trauma. Many patients with the current or past history of manual labor attend our rheumatology clinic/s. Should manual labor be considered a risk factor for the development of fibromyalgia? **Patients and Methods:** A prospective study, where all male patients seen at the rheumatology clinic/s with the diagnosis of fibromyalgia were asked about their present and past type of job/s. Manual job was defined as a job where the participant had a strenuous physical activity of more than 2 hours during the working day. A similar number of Ethnic- and age-matched female patients from the same clinic/s were recruited as a control group. **Results:** 69 and 40 Arab and Jewish male participants were recruited, respectively. 54% of the Arab male patients and 20% of the Jewish male patients were considered manual laborers. Construction and renovation accounted for 46% of the type of jobs practiced by Arab patients. Only 4% of Arab female patients were considered manual laborers. **Conclusion:** Manual labor seems to be a risk factor for the development of fibromyalgia among male laborers.

## Keywords

Manual Labor, Fibromyalgia, Male, Rheumatology Clinic

## 1. Introduction

Fibromyalgia is a common chronic pain syndrome, mainly characterized by

diffuse musculoskeletal pain and fatigue [1]. Other comorbidities include headache, neck or low back pain, peripheral numbness, muscle spasm, memory, mood and sleep problems [2]. The prevalence in the general population ranges from 2% - 5%, and is generally higher among females by a ratio of 4:1 in general [3]. The highest incidence is between the third and sixth decades of life. Genetic factors play an important role in about 15% of the patients [4]. Other risk factors include trauma (physical or mental), chronic inflammatory diseases, previous chemotherapy treatment, and COVID-19 infection [5]-[7].

The pathogenesis of the syndrome is not fully understood with many theories trying to explain it. The most accepted one is the centralization theory: the conception of pain at the cortex is overexpressed, with a continuous perception of pain [8].

The issue of occupation and fibromyalgia is rarely addressed in literature.

In one study, disabled patients with fibromyalgia were more likely to be previously employed in manual professions or in the industry service, whereas employed patients were more commonly working in non-manual jobs that included clerical, managerial, or professional occupations [9].

In this prospective study, we summarized the occupational profiles of all male patients with fibromyalgia who attended different outpatient clinics in the Northern part of Israel.

## 2. Methods

All male patients attending the rheumatology outpatient clinic at different sittings in the North part of Israel (Nazareth, Nof Ha-Galil, Hadera and Ara'ara), and diagnosed with fibromyalgia based on the American College of Rheumatology (ACR) criteria from 2010 [10], were prospectively asked to participate in our study. After consent, they were asked about their current and past type of job/s they had. Manual labor was considered any job demanding strenuous physical activity of  $\geq 2$  hours during the shift, for at least one year. In addition, patients were given the option of defining their job as manual or not.

Patients with a history of trauma necessitating referral to ER, first order of family history of fibromyalgia, post-traumatic stress syndrome (PTSD), history of chemotherapy treatment, history of chronic inflammatory disease, history of major surgery such as CABG, history of COVID infection, and patients with elevated inflammatory measures and positive serology, were excluded.

Patients were considered with labor associated fibromyalgia, only if fibromyalgia developed at least half a year following the start of manual labor, and within 5 years from the time of quitting their manual job.

As a control group, similar number of age- and ethnic-matched female patients with fibromyalgia from the same different clinic/s were prospectively recruited and asked about their current and previous job/s within 5 years from the time of fibromyalgia symptoms. Here, a strenuous physical activity of  $\geq 1$  hour during the shift, for at least one year, was considered as a manual labor.

### 3. Results

Sixty-nine Arab male and 40 Jewish male fibromyalgia patients were considered with current or past manual labor.

**Table 1** shows the prevalence of the different manual (physical) labor jobs among Arab and Jewish male and female participants. 54% and 20% of Arab and Jewish male patients, respectively, were categorized with current or with a history of manual labor, while 4% of the Arab and 2% of Jewish female patients, were considered of having manual labor. On the other hand, 60% and 28% of Arab and Jewish male patients defined their current or past jobs as manual, and 38% and 20% of Arab and Jewish female patients, respectively, defined their jobs as manual or physical.

**Table 2** summarizes the different manual labor profiles of Arab male patients. The most type of manual labor among Arab men was construction and renovation among 44% of the Arab male patients. While among Jewish male patients, it was renovation.

44% of Arab women were housekeepers at their own home, 3% were employed as kitchen workers in institutions, other 3% worked in kinder garden, one patient worked as dentist aid. The rest were mostly school teachers, clerks and others. On the other hand, 25% of Jewish fibromyalgia female patients were housekeepers at their home, and 20% defined their jobs as manual or physical, mostly working at kinder gardens and nursing home.

**Table 1.** Distribution of manual labor among attendants at rheumatology clinics according to gender and ethnicity.

Type of job	No. (%)
Arab males with manual labor	37 (54%)
Jewish males with manual labor	8 (20%)
Arab females with manual labor	3 (4%)
Jewish females with manual labor	1 (2%)

**Table 2.** Different labor profiles among Arab male participant with manual labor.

Type of manual job	Number (%)
Construction	8 (22)
Renovation	8 (22)
Painter (home walls)	5 (14)
Carpenter	5 (14)
Smith	3 (8)
Floorer	2 (5)
Car mechanic	2 (5)
Porter	1 (2.5)
Truck electrical	1 (2.5)
Plumber	1 (2.5)
Butcher	1 (2.5)

## 4. Discussion

The most interesting finding in our study is that most Arab fibromyalgia male patients (54%) were with current or past true physical manual labor, while 20% of Jewish male patients were with current or past true manual labor, compared to 2% among Jewish women, and 4% among Arab women. This data alludes to the fact that the type of job, especially manual one, is a significant risk factor among male patients for the development of fibromyalgia, necessitating visits to the rheumatologist.

It must be mentioned that 60% of Arab men had defined their current or past jobs as manual/physical while, 28% of Jewish male patients defined their jobs as physical.

The data in our study do not give us an indication about the issue of type of jobs among women (both Arab and Jewish) and fibromyalgia.

The difference between the percentage of manual labor among Arab and Jewish males with fibromyalgia, could be attributed to the difference in social status of the two societies, where Jewish had higher social status and their proportion among physical laborers is much less than Arab ones [11]. Data from the central bureau of statistics in our county from the year 2018 showed that nearly 38% of hired male Arabs worked in industry and construction, as opposed to 18% from hired non-Arab male population. It must be remembered that industrial job does not necessarily mean a manual job. So, the 54% of Arab males in our study with fibromyalgia is higher by at least 50% than the expected figure that represents their percentage in construction and similar manual jobs, from all Arab workers in the work force in our country.

Since rarely women work in manual labor, the impact of manual work on the development of fibromyalgia among women, needs to be assessed in cohort studies. Clearly, the definition of manual labor among women is different from that for men, and there is probably no exact definition for that, so a special effort and thought should be made for such a definition.

There are some drawbacks in our study. First, is that the purpose of the visit to rheumatology clinic by fibromyalgia patients with manual labor, could be disability benefits since these patients are not able to continue their type of work. On the other hand, male patients with fibromyalgia with non-manual jobs, are still able to work with no need to attend rheumatology clinic for disability benefits. In order to solve this issue a prospective cohort study is needed to prospectively evaluate different groups of patients based on their type of job.

Another drawback is the definition of manual work. There are jobs that clearly are considered manual/physical and other jobs that could clearly be defined as sedentary. The problem is with jobs in the grey zone.

Lastly, how backwards in time among past manual laborers, a claim that such work still could have a direct influence on the developing fibromyalgia, could be justified?

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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