Low back pain in residents of Comalcalco, Tabasco, Mexico: Prevalence and associated factors.

Marco Antonio Zavala-González *, Rosario Correa-De la Cruz **, Alberto Popoca-Flores ***, Sergio Eduardo Posada-Arévalo**

*Mexican Society of Public Health, A.C.; **Academic Division of Health Sciences, Juárez Autónoma University of Tabasco; ***General Hospital of Zona No. 2, Mexican Institute of Social Security, Tabasco Delegation.
Correspondence: Marco Antonio Zavala González. Address: Calle principal de la alberca # 24, Col. Ingenio Santa Rosalía, H. Cárdenas, Tabasco, México, C.P. 86500. Tel.: +52(937)-126-4197. e-mail: zgma_51083@yahoo.com.mx

Objective:

Cross-sectional analytical study, to determine the prevalence of low back pain and its association with known risk factors, in users of the Mexican Institute of Social Security, in Comalcalco, Tabasco, Mexico. Material and methods: A multistage sample was taken, randomly selecting a medical center of six, and 100 of 420 selected medical center users. Respondents were chosen by convenience, gathering different variables: sociodemographic, anthropometric, lifestyle, chronic degenerative diseases, and low back pain, by personal interviews and review of medical records. Descriptive statistics and odds ratio (p≤0.05) were estimated. Results: Prevalence of low back pain was observed in 63% beneficiaries. A significant association with occupation, age, sex, obesity, unhealthy habits and chronic degenerative diseases was found, concluding that the prevalence is high, and that risk factors identified in other areas are not applicable to this population.

Introduction

Low back pain has clinical, social and economical importance since it is a public health problem that affects the population indiscriminately. The available literature is heterogeneous and contradictory.

It is unknown exactly what the proportion of affected people around the world is. Globally, it is estimated that 4-33% of the population exhibits it [1]. While in the United States (USA), Spain and Africa this ranges from 8% to 56% [2-4]. Recent data indicate that its incidence and prevalence have remained stable over the last 15 years [5]. However, the prevalence in the general population is rarely under study, compared with the prevalence in specific groups, like schoolchildren, adolescents, medical students, construction workers, nurses, farmers and indigenous people, to mention a few [6-14].

Most of the research has been developed in the field of occupational medicine, even over orthopedics, since industrialized societies are presenting an disability epidemic due to low back pain, with a tremendous socioeconomic and labor impact, that tend to increase [15]. In Mexico, Noriega-Elió et al. [16] stated that 10-15% of the disability reports in the Mexican Institute of Social Security (IMSS), are issued for low back pain.

Given the frequency of low back pain, attempts have been made to identify its etiology, and so far, approximately 57 causes have been pointed out [17]. However, there is no linear correlation between clinical and anatomic alterations, so an etiological diagnosis is only possible in 10-20% of the cases, i.e., 80-90% of low back pains were “non-specific” [18,19]. Therefore, approximately 90% are cared for and controlled by primary care [3].

Risk factors are numerous, varied and heterogeneous, amongst them are: prolonged static posture, heredity, old age, heavy labor, smoking, obesity, stress, low psychological well being, female gender, operating heavy machinery, exposure to intense vibrations, emotional and behavioral problems, abdominal pain, tiredness, odynophagia, rapid growth rate, tendon and quadriceps stiffness, study and work, previous episode of low back pain 12 months before current, age >25 years old,

Tall stature (≥1.80 m), overweight, construction work, nursing and office work, repetitive and monotonous, frequent twisted postures, driving vehicles daily, lifting and carrying heavy loads, work dissatisfaction, unemployment, and work in the field [2-32]. On the other hand, it has not always been able to corroborate the significant association of these factors with low back pain, so it is recommended to check in different populations.

In the IMSS in Tabasco, low back pain is one of the main reasons to request medical attention. In the Family Medicine Unit (UMF) No. 11 of the IMSS, Comalcalco, Tabasco, it’s one of the top 20 reasons for consultation in adults over 20 years old, and one of the 20 most common reasons for temporal disability [33-35].

Therefore, an investigation was conducted aimed at determining the prevalence of low back pain and its association with some known risk factors, in beneficiaries in the UMF No. 11 of the IMSS, Comalcalco, Tabasco, Mexico.

Materials and methods

An analytic cross-sectional investigation was conducted, in which the universe of the study were beneficiaries of the UMF 11 of the IMSS, in Comalcalco, Tabasco, México, a finite and undetermined number, from which a multistage sample was taken: 1) Sub-universe of medical centers (6 units), random sample with maximum error acceptable 5%, estimated percentage of sample 10%, and p=0.05 obtaining 1 medical center, randomly selected by raffle method, “Medical Center No. 6” 2) Sub-universe of 420 beneficiaries appointed to the selected medical center, probability sampling with maximum error acceptable 5%, estimated percentage...
of the sample 25%, and p=0.05, obtaining 100 beneficiaries, selected by nonprobability sampling by convenience. Selecting people >15 years old, of either sex, who went to receive medical and/or preventive attention in the selected location during September-December 2007; excluding: pregnant women, carriers of cognitive diseases, locomotive disabilities and/or musculoskeletal malformations, users of wheelchairs or crutches, and people with a history of spinal surgery.

Accepted after external review

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The data were analyzed using the software Epi Info® v3.3.2 (freeware distributed by the USA Center of Disease Control and Prevention) in two phases: 1) Descriptive statistics to identify characteristics of the sample, and 2) Odds ratio (OR) with 95% confidence (p≤0.05) to identify factors associated with Low Back Pain. The research was conducted with prior approval of the Local Committee of Inquiry 2701 of the IMSS.

Results

Description of the population:
100 beneficiaries, 57% male and 43% female were studied. The mean age was 32.5±12.49 years, mode 28, minimum 17, and maximum 76 years. The sociodemographic, lifestyle and health conditions of the population are shown in Table I, while the anthropometric characteristics are shown in Table II.

Prevalence of Low Back Pain

The prevalence of Low Back Pain was 63% of beneficiaries.

Factors associated with Low Back Pain

When looking for factors associated with Low Back Pain, it was found an association statistically significant with: student occupation, age >25 years, male gender, wage earning worker, obesity, sedentarism, smoking, alcoholism, chronic degenerative disease, Diabetes Mellitus, Systemic Arterial Hypertension, and Metabolic Syndrome (Table III).
Discussion

The prevalence of low back pain in this series (63%) was higher than that reported worldwide (4-33%) [1], in USA (8-56%) [2], and Africa (10-14%) [4]. This high prevalence may be related to the high BMI of the people (which denotes a population with overweight and obesity), and the large proportion of sedentary people. Given these findings, it is necessary to investigate on this matter in order to identify causes and associated factors.

Regarding associated factors, the data was able to corroborate the association of some risk factors described in the literature. Smoking is consistent with what Manchikanti [2], Feldman et al. [7], Deyo [30], Croft [31], and Brage [32] reported. The significant risk with obesity agrees with that informed by Manchikanti [1], Latza et al. [9], Deyo [30], Croft [31], and Brage [32]. Likewise, it also coincided with the risk of sedentarism, noted by Juul-Kristensen et al. [22] and by Ozguler and his group [23]. It also agreed with the results published by Latza et al. [9] which pointed out that the group people >25 years old, were at risk. In addition, the data was able to corroborate that the workers represent a risk group, which agrees with that reported by several authors [2,10,12,22,23,28,29]. On the other hand, there were no references that mention as risk factors: male gender, alcoholism and chronic degenerative diseases; and protective association with the student occupation so it is believed that they are factors associated particularly with the research population. Finally, there was no significant association with female gender, students workers, tall stature and overweight, contrary to the findings reported by Manchikanti [2], Feldman et al. [7], Latza et al. [9], Ozguler et al. [23], and Acouffe et al. [27].

Table III. Odds Ratio: Independent Variables / Low

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>OR</th>
<th>IC95</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupation housewife</td>
<td>1.90</td>
<td>1.18</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Occupation students with wage labor</td>
<td>0.67</td>
<td>0.19</td>
<td>&gt;0.05</td>
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<tr>
<td>Size &lt; = 30cm</td>
<td>1.18</td>
<td>0.10</td>
<td>&gt;0.05</td>
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<tr>
<td>Overweight</td>
<td>0.87</td>
<td>0.20</td>
<td>&gt;0.05</td>
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<td>Physical activity</td>
<td>0.88</td>
<td>0.37</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Dyslipidemia</td>
<td>2.38</td>
<td>0.95</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Occupation student</td>
<td>0.18</td>
<td>0.65</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Age &gt; = 25 years</td>
<td>5.59</td>
<td>2.19</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Sex male</td>
<td>7.93</td>
<td>1.26</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Occupation employee</td>
<td>4.36</td>
<td>1.80</td>
<td>&gt;0.05</td>
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<tr>
<td>Obesity</td>
<td>3.44</td>
<td>1.46</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Sedentarism</td>
<td>10.56</td>
<td>3.91</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Smoking</td>
<td>4.15</td>
<td>1.59</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Alcoholism</td>
<td>4.81</td>
<td>1.91</td>
<td>&gt;0.05</td>
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<tr>
<td>Chronic degenerative disease</td>
<td>6.03</td>
<td>2.21</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>1.66</td>
<td>1.48</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Systemic Arterial Hypertension</td>
<td>1.95</td>
<td>1.28</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Metabolic Syndrome</td>
<td>1.66</td>
<td>1.46</td>
<td>&gt;0.05</td>
</tr>
</tbody>
</table>

Conclusions

The prevalence of low back pain in beneficiaries of the IMSS, in Comalcalco, Tabasco, Mexico, is greater than that reported in the international literature.

The significant association of low back pain with some risk factors identified in developed countries was not corroborated in the Comalcalco inhabitants, therefore the epidemiological findings reported in several areas should not be adopted by the health care providers without having ratified or rejected such association within its user population. This conclusion and recommendation is applicable to other Latin American populations. To provide better conclusions, larger studies with larger samples, a narrower selection criteria and the inclusion of other variables are required.

Acknowledgments

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References

28. Walter-Bone K, Palmer KT. Musculoskeletal disorders in farmers
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