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## Ergonomic risks in operating rooms: An unexplored area in Mexico

J Nieves Serratos-Perez<sup>a,\*</sup>, Carlos Hidalgo-Valadez<sup>b</sup>, M. Carmen Negrete-Garcia<sup>a</sup>

<sup>a</sup>Universidad de Guanajuato, Eugenio Garza Sada 572, Leon 37150, Mexico

<sup>b</sup>Universidad de Guanajuato. Boulevard Puente Milenio 1001, León 37670, Mexico

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### Abstract

On November 13<sup>th</sup> 2014, Mexico issued revised normative regarding issues of health and safety at work. For the very first time, consideration is given to the existence of work risks of ergonomic nature. These are formally defined as “the presence of physical overexertion, repetitive movements or unnatural postures, during the performance of a job, that may lead to fatigue, error, accident or occupational illness, and which is due to improper design of facilities, machinery, equipment, tools or work posts”. The normative calls for the identification and solution of those risks, and places the main responsibility on the employer and their representatives. It is enforceable on every single work area in the country as a whole. Operating rooms are a work environment where to date ergonomics has had little consideration, even though it is widely known the extent and severity of situations that fall clearly under the definition of ergonomic risks cited above. We have started an effort to do as mandated, considering the demands placed on surgeons of a variety of specialties. A proposal was put forward to the management committee and the ethics committee at a private hospital in Leon, Guanajuato. We requested the opportunity to review video recordings from surgical procedures completed in the operating rooms of the hospital, in order to first identify ergonomic risks for the personnel involved, and then propose solutions based mainly in a rearrangement of facilities and work procedures. The management committee has already pledged their support to the initiative. It is very likely that the same will happen at the ethics committee. Thus, at AHFE 2015 we shall be delivering a very interesting report on this so far unexplored facet of a most relevant work situation in Mexico.

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\* Corresponding author. Tel.: +52-477-7737037; fax: +52-477-7731511.  
E-mail address: [nieserper@gmail.com](mailto:nieserper@gmail.com)

## **1. Introduction**

Ergonomics issues in operating rooms have been addressed extensively, for a long time now. Thus, Berguer [1] published in 1999 an excellent compilation of the published material up to that moment, regarding both the main concerns in that respect, and the proposed solutions to the problems thus far identified.

The author points to the fact that open surgery is a realm with a number of ergonomics concerns which at the time had not been adequately solved. And he goes on to remark the enormous influence that the on the extent and complexity of those ergonomic issues has had the development of microsurgery procedures.

Unfortunately, it is well apparent that in Mexico there is very little interest on the matter of ergonomics and how it may improve the work conditions in the operating room. This is evidenced by the fact that out of the 111 references included by Berguer, only one was originated in the Mexican realm. Furthermore, that work looked not on an ergonomic matter properly, but on the extent of the stress reactions experienced by both the surgical team and the patient undergoing the procedure [2].

This situation of apparent disregard to the matter of ergonomics in the Mexican surgical environment, however, should be changing in a drastic way in the near future. This, because on November 2014, the Secretaria del Trabajo y Prevision Social (Ministry of Labour Affairs) has issued the reviewed version of the Reglamento Federal de Seguridad y Salud en el Trabajo (Federal Ordinance on Work Safety and Health) [3]. For the first time ever, the ordinance takes into account the existence of ergonomic risks, and places on the employer the responsibility for identifying and addressing them.

This fact prompted us to start the work in order to develop a practical approach to assessing the nature and measure of the ergonomic risks faced by surgeons operating in Mexico. The results of the very first step in that direction are presented here.

## **2. Methodology**

Taking advantage of the fact that one of the authors is a surgeon himself, a proposal was put forward to the management of a privately run hospital in the city of Leon, asking for the opportunity to evaluate the working conditions in their operating rooms. Even though the video recording of surgeries is a standard procedure in the hospital, access to that material was not granted, on the grounds of ethical considerations. Photographs were supplied instead and, in some cases, our colleague contributed with some photos of his private collection.

We proceeded then to study the materials at hand, looking for the presence of ergonomics risks as defined in the Federal Ordinance on Work Safety and Health.

## **3. Results**

Our main findings are shown in the figures that follow.

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