HOW KNOWLEDGE MANAGEMENT IN ERGONOMICS CAN HELP AVIATION AND SPORT RESEARCH FOR MILITARY CONCERNS

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Several approaches of ergonomics interventions and analyses as well as anthropometric parameters, have been used to reduce physical stress in flight cockpit. Furthermore, ergonomics may play a role synergically directed to sport research concerns. The aim of the present study is to make a critical evaluation through a qualitative literature review of several studies relating ergonomics into aviation environment, in order to explore whether ergonomics/anthropometric concepts could be useful to both military planes and sport-oriented projects developments. The qualitative review is one way to better know and understand some subject and to manage the knowledge once it can combine and synthesize results from a wide-ranging of studies. Search tools as OVID/MEDLINE, COCHRANE/Trials Registry and Academic Google through May and June 2009, using terms of ergonomics, human factors, anthropometric parameters, workplace interventions or biomechanics, linked to pilots/athletes selection, cockpit evaluation, aircraft/airplanes projects, sports training, pilots/athletes performance, military pilots/crew selected article bibliographies also focusing on possible sport-related repercussions. The authors verified that one of the main factor that affect the quality of life as well the pilot`s performance during flight is in the currently using crew`s chair once some sittings in the Brazilian Air Force airplanes do not offer a correct comfort conditions to the flight personnel. Another found was that in order to specify accurate ergonomics requirements is strongly recommended to base on the huge number of ordinary pilot`s experience instead of test pilots. The adopting of ergonomics parameters as an admission and selection criteria has been largely used. The critical measures for a correct evaluation of the aircraft`s cockpit dimensions must be taking in the seating position: stature, buttock knee, knee height, leg length and eyes height. Due to anthropometry the most part of female population is unfit in order to operate effectively the flight controls. It is concluded that the anthropometric parameters knowledge from a specific population is very important in the development or acquiring process of any equipment, as well as accurate ergonomics requirements in aviation an promote the improvement of operational performance and flight security, adding the decreasing of musculoskeletal dysfunctions and death risks. This study may be useful to possibly conclusions based on results combination from multiply sources including sport training contributions which are fundamentally based in operational performance. Future research works on ergonomics and sport may be based in a common matrix of relationships aiming to provide a physical training complement to equipment requirements.