

Possible Application of Six Sigma Methodology for the Comparison of Medical Products

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Abstract: The research was created to develop the thesis, named: Possible Application of Six Sigma Methodology for the comparison of medical products, needed to obtain the master's degree in Quality Engineering at the Wuppertal University of Germany. It compares four chosen medical products through use of the Six Sigma Methodology. The objective group for this comparison is individuals within 20 and 35 years old.

To develop the investigation, a research structure was created with clearly defined steps of elaboration and the application of the Six Sigma Methodology. These steps are; Product definition through client interview, Requirements definition through Delphi Method, Products selected through concept analysis chosen by Pugh, Implementation of the experiment and the comparison of the products through the application of the Six Sigma Methodology. In order to achieve this application, the module Stand- Alone Tool was used. This Module is able to implement the Six Sigma Tools in each step of the case study to guarantee an independent, swift and simple application without considering the entire methodology and its requirements.

The main part of the study involves an experiment separated into three parts which are: 1) Medical research with the test individuals between the ages of 20 and 35, 2) Interview research to the test persons and technical measures of the four previously defined products (Davita Magnetic field therapy System, Full body treatment BEMER, PEMF devices IMRS and VITA-LIFE magnetic resonance stimulation).

In conclusion, the Six Sigma Methodology can be applied in many different disciplines. It is not necessary to apply the principal goal of the methodology (3,4 parts per million). Therefore, the methodology can be defined and designed to answer a specific case or procedures and their particularities. In addition, another interesting conclusion of this research is how the use of non-ionizing magnetic fields in healthy people do not create a change in the body and its microcirculation (it is the reasons for creating these kinds of products).

Keywords: Six Sigma, medical products, Delphi method, microcirculation