### 3.3 Validation

The Chi Square analysis for goodness of fit was applied for testing the normality of the variables. The significance $\alpha$ was chosen to be 0.05, and the degrees of freedom $\nu$ were given by the number of class intervals minus the statistical values obtained from the experimental data: Mean, standard Deviation and number of class intervals.

For example, if the resultant number of class intervals for a data set came out to be seven, the degrees of freedom would be four, giving: $\chi^2_{\alpha,\nu} = \chi^2_{0.05,4} = 9.48$..If $\chi^2_{exp} < 9.48.$ then the null hypothesis is accepted at the 95% confidence level.
It was found that all variables followed the normal distribution at the 95% confidence level, except for Knee Girth (ISO 8559 ref: 2.1.20). Since the experimental chi square value $\chi^2_{exp}$was found to be higher than $\chi^2_{0.05,4}$ there was not enough evidence to support the hypothesis that data followed normality.

## 4. Conclusions

The first stage of the creation of an anthropometric database for colombian military personnel was accomplished acquiring and processing 44 anthropometric variables from 99 subjects (approximately one fifth of the total sample size calculated)..
The processing and compiling of anthropometric data was done according to the requirements stated in international standards. In order to assure the pertinence of the data collected and statistical values reported.
A quality control procedure for the data was implemented, which established that any data over ±3 SD must be individually reviewed. This method was proven to be very effective to identify defective body models and inadequately located landmarks.
A validation method was implemented in order to verify the consistency of the anthropometric data extraction procedures.

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