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Chi Square Confirmation of Autonomic Functions Percentile Norms of Indian Sportspersons Withdrawn from Competitive Games and Sports

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Abstract : Purpose of the study were to compare between (a) frequencies among the four quartiles of percentile norms of autonomic variables from power events and (b) frequencies among the four quartiles percentile norms of autonomic variables from aerobic events of Indian sportspersons withdrawn from competitive games and sports in regard to number of samples falling in each quartile. The study was conducted on 430 males of 30 to 35 years of age. Based on the nature of game/sports the retired sportspersons were classified into power events (throwers, judo players, wrestlers, short distance swimmers, cricket fast bowlers and power lifters) and aerobic events (long distance runners, long distance swimmers, water polo players). Date was collected using ECG polygraphs. Data were processed and extracted using frequency domain analysis and time domain analysis. Collected data were computed with frequency, percentage of each quartile and finally the frequencies were compared with the chi square analysis. The finding pertaining to norm reference comparison of frequencies among the four quartiles of Indian sportspersons withdrawn from competitive games and sports from (a) power events suggests that frequency distribution in four quartile namely Q1, Q2, Q3, and Q4 are significantly different at .05 level in regard to variables namely, SDNN, Total Power (Absolute Power), HF (Absolute Power), LF (Normalized Power), HF (Normalized Power), LF/HF ratio, deep breathing test, expiratory respiratory ratio, valsalva manoeuvre, hand grip test, cold pressor test and lying to standing test, whereas, insignificantly different at .05 level in regard to variables namely, SDSD, RMSSD, SDANN, NN50 Count, pNN50 Count, LF (Absolute Power) and 30: 15 Ratio (b) aerobic events suggests that frequency distribution in four quartile are significantly different at .05 level in regard to variables namely, SDNN, LF (Normalized Power), HF (Normalized Power), LF/HF ratio, deep breathing test, expiratory respiratory ratio, hand grip test, cold pressor test, lying to standing test and 30: 15 ratio, whereas, insignificantly different at .05 level in regard to variables namely, SDSD, RMSSD. SDANN, NN50 count, pNN50 count, Total Power (Absolute Power), LF(Absolute Power) HF(Absolute Power), and valsalva manoeuvre. The study concluded that comparison of frequencies among the four quartiles of Indian retired sportspersons from power events and aerobic events are different in four quartiles in regard to selected autonomic functions, hence the developed percentile norms are not homogenously distributed across the percentile scale; hence strengthen the percentage distribution towards normal distribution.

Keywords : power, aerobic, absolute power, normalized power
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