

IQ Measures on the Wechsler Abbreviated Scale of Intelligence in Indian Air Force Aviators

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Higher intellectual functioning is linked to successful military flying and mission accomplishment in pilots. The use of intelligence test batteries and cognitive batteries also forms an integral part of testing to assess the intellectual abilities and memory performance of potential astronaut candidates. The objective of the present study was to assess the verbal, performance and full scale IQs in medically fit Indian military aviators. The Wechsler Abbreviated Scale of Intelligence test battery was administered to 50 healthy aircrew in an initial effort to establish baseline data for intellectual abilities in this population. The mean (SD) Verbal IQ of the group was 110.26 (7.84), the mean Performance IQ of the aircrew was 115.38 (7.10), and the mean Full Scale IQ was 114.26 (6.37). There were no significant differences of intellectual abilities based on demographic characteristics. There was a positive correlation between Verbal IQ, Performance IQ and Full Scale IQ scores. There were no significant correlations between verbal subtests. Data obtained in medical evaluation of grounded pilots can be compared with these normal aircrew and it can also be used as reference data in astronaut crews' selection and screening process.

Keywords: verbal and performance IQ, Indian military aviators

Intelligence tests have always played a significant role in the selection of military aviators. In general, flight tasks involve highly developed visuo-motor, visuo-spatial, and visuo perceptual skills. Each of these functions is adequately tapped by performance subtests of intelligence and is used as one of the measures of flying aptitude in military aviators' selection procedure. Intellectual abilities and memory performance are also included as part of operational aptitudes in the selection of astronauts where screening and evaluation of astronaut candidates usually include measures of cognitive and intellectual capacity.

The suspicion of decreasing intellectual capabilities of an aviator or presence of specific neurologically compromising conditions would necessitate assessment of the aviator's cognitive functions. In order to properly evaluate an aviator's intellectual functioning; the neuropsychologist and

aviation psychologist should have knowledge of what constitutes normal functioning for this particular population. It may not be reasonable to assume that the specific absence of brain impairment according to normative data for the population at large is equally applicable to a population of aviators. An aviator population may require stricter limits than the general population (Guilmette & Treanor, 1986).

The nature and composition of space missions and crews have increased the importance of psychological issues which have become critical in operational space flight. It is increasingly important to select candidates on the basis of positive psychological characteristics. The objectives of selection strategies are twofold: to eliminate unfit or potentially unfit applicants and to select from otherwise qualified candidates those who will perform and cope optimally based on their basic operational aptitudes (such as intelligence), personality