**Introduction**

The Behavioral Health and Performance (BHP) Element is one of the six elements within the NASA Human Research Program (HRP) and is responsible for managing four risks: a) The Risk of Performance Decrements due to inadequate Cooperation, Coordination, Communication and Psychological Adaptation within a Team (Team), b) the Risk of Performance Errors due to Sleep Loss, Circadian Desynchronization, Fatigue and Work Overload (Sleep), c) Risk of Behavioral Conditions (BMed), and d) the Risk of Psychiatric Disorders (BMed).

The aim of this report is to address some of the recommendations made by the recent NASA HRP Standing Review Panel for the Behavioral Medicine Risk of Psychiatric Disorders. Such recommendations included: a) the inclusion of important national and international literature in English and non-English language materials; including journals, books, magazines, conference reports and b) an extensive literature review of certain types of psychological states to predict, detect, and assess adverse mental states that may negatively affect the psychological well-being of the astronauts, specifically asthenia.

This report was a collaborative international work effort focused on the evaluation and determination of the importance of continuing research on asthenia as a possible psychological problem that might affect the optimal psychological functioning among crewmembers during long-duration space flight missions.

Russian medical personnel (flight surgeons and psychologists) have observed symptoms of asthenia (weakness, increased fatigue, irritability, and attention and memory disorders) in cosmonauts after four months in space (Mysnikov & Zamaleddinov 1996; Grigorievich, 1996) and believe that asthenia is one of the greater risks that will affect crews’ optimal psychological functioning.

"If our diagnostic systems do not readily match the symptoms profiles presented, practitioners will continue to underdiagnose psychological disorders (Kessler et al. 1994; Üstün et al. 1995; Mason & Wilkinson, 1996 as cited in Hickie, 1997)"

**Methods**

This comprehensive international systematic literature review includes six phases: Phase 1: Inclusion and Exclusion criteria, Phase 2: Data collection, Phase 3: Initial evaluation of data, Phase 4: Interviews with experts, Phase 5: Analysis and interpretation, and Phase 6: Results. We examined physical, psychological and psychiatric literature that comprised studies involving astronauts and cosmonauts during short- and long-duration space flight missions. Countries included in the literature review were Canada, Germany, Spain, Japan, Czech Republic, Russia, U.S.A., U.K., Australia, and Switzerland, and, in the interview process, Canada, Germany, Spain, Japan, Czech Republic, Russia, and U.S.A.

Inclusion criteria included 1) journal articles, conferences, books, magazines, newspapers, empirical/quantitative studies with astronauts and cosmonauts; 2) time period: > 2010; and 3) databases: Psych Info, Psycho, article, ISI Web of Knowledge, PubMed, DynaMed, Access Medicine, MD Consult, STATREF, Diagnosaurus, East View information Services, World Cat, Elsevier, ScienceDirect.

Exclusion criteria were: 1) technical reports, books, conference, newspapers, magazines, dissertations, commentaries, case-sample studies, literature reviews that were not representative of the astronaut or cosmonaut population and that were not related to the area of psychology, psychiatry, asthenia, mental health during long- and short-duration space flight missions.