

Poster Session A

**C-09**

**SPECT Differences between Those with Higher and Lower Levels of Aggression: An Exploratory Analysis**

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**Objective:** To determine which areas of the brain were most associated with level of aggression as measured via SPECT scans. **Method:** Participants were selected based on their scores on an aggression factor from a symptom checklist, and had a mean age of 40.97 years ( $SD = 16.34$ ), and consisted of 56.9% males and 43% females. Subjects were stratified based on upper ( $n = 2537$ ) and lower ( $n = 2600$ ) quartiles. Digitally derived blood flow measures from areas throughout the brain were examined at activation. **Results:** A MANOVA was conducted at the .05 level, revealing significant group differences, Wilks'  $\lambda = .966$ ;  $F(16, 6692) = 1.465$ ,  $p = .001$ . Those scoring in the upper quartile of the aggression factor yielded significantly lower blood flow than those in the lower quartile in the following areas: amygdala, angular gyrus, calcarine, caudate, specific areas of the cerebellum, cingulum, cuneus, frontal inferior operculum, fusiform, Heschl's gyrus hippocampus, insula, lingual gyrus, mid and superior occipital lobe, olfactory cortex, globus pallidus, parahippocampal gyrus, parietal lobe, left pre- and post-central gyri, precuneus, putamen, rolandic operculum, supramarginal gyrus, temporal lobe, thalamus, and vermis. **Conclusion(s):** Analyses revealed higher levels of self-reported aggression differed significantly in terms of perfusion to various areas relative to lower levels of aggression. These findings suggest many areas mediate symptoms of aggression and that SPECT scans may be a fruitful tool in identifying those susceptible to high levels of aggression. Future research will try to differentiate which areas show the greatest contribution to aggressiveness.