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Emotional response and cognitive bias using duty-relevant trauma words set for professional rescue workers

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Professional rescue workers are commonly exposed routinely to traumatic events during the course of duties. Many studies have reported that 30-40% of professional rescue workers suffered from posttraumatic stress disorders, depression, insomnia, and other psychopathology. For the influence of their duty-related traumatic experience on the emotional response and cognitive bias, we designed emotional counting stroop (ecStroop) task using 12 duty-relevant trauma words. General negative and neutral words matched for numbers of letters, number of syllables and frequency of usage. We evaluated the arousal and valence rating for duty-relevant trauma words, general negative and neutral words in 520 general populations. Finally, 8 duty-relevant traumas, 8 general negative, 16 neutral words were selected for ecStroop task. We conducted functional magnetic resonance imaging (fMRI) study investigating the neural networks associated with emotional response and cognitive bias using ecStroop task composed of these words set. 20 participants completed 20 blocks (20 stimuli per block) of ecStroop task during fMRI data acquisition. Differences in neural activity during duty-relevant trauma (as opposed to neutral) stimuli were increased right amygdala, left inferior frontal gyrus, both temporal poles. General negative stimuli were related with increased activity in the left temporal and left superior orbital gyrus. These results suggest that ecStroop task for professional rescue workers were able to recruit the neural network for emotional processing. Further analyses to compare the professional rescue workers and general populations were needed.

Biography

Minyoung Sim has been Visiting Scholar from Vanderbilt University Hospital. She is the Director of Department of Anxiety and Stress disorder of National Center for Mental Health in South Korea. She has published more than 30 papers in reputed journals.

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