

Study: Stress-induced cortisol facilitates threat-related decision making among police officers

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Research by Columbia Business School's Modupe Akinola, Assistant Professor, Management, and Wendy Berry Mendes, Associate Professor, Sarlo/Ekman Endowed Chair of Emotion, University of California San Francisco in Behavioral Neuroscience examines how increases in cortisol, brought on by an acute social stressor, can influence threatrelated decision making. The researchers studied a group of police officers completing a standardized laboratory stressor and then afterwards the group completed a computer simulated threat-related decision making task designed to examine accuracy in decisions to shoot or not shoot armed and unarmed black and white targets.

The study found that male police officers of different ethnic backgrounds with higher <u>cortisol</u> responses to stress made fewer errors in the decision making task, particularly when deciding whether or not to shoot armed black targets relative to armed white targets. To the researchers' knowledge, this is the first study to report an effect of cortisol on threat-related decision making, a departure from studies that observe the impact cortisol has on non-threatening situations. The results indicate that stress may help decision-makers when they are evaluating potential threats.

To conduct the study, the professors recruited 81 active male police officers. 84 percent of the sample listed patrol as their job category. Sergeants accounted for seven percent of the sample and nine percent



were investigative officers. The racial composition of the officers was: 44 White, 25 Black, ten Latino, and two Asian. After inducing cortisol increases, they then had police officers complete a shoot/don't shoot computerized-decision making task as a measure of performance. The task also included a race-related component allowing the researchers to test whether cortisol increases differentially affect decision making depending on the race of the potentially hostile (i.e., armed) target. Participants were instructed to respond as quickly as possible whenever a target appeared, by pressing the "a" button on the computer keyboard indicating "shoot" if the target was armed and pressing the "l" button on the computer keyboard indicating "don't shoot/holster gun" if the target was unarmed. The resulting data shows that police officers who had larger cortisol increases to the stress task subsequently made fewer errors in the decision-making task. However, the relationship between increased cortisol reactivity and lower error rates in the task was stronger when the targets were armed and black than when the targets were armed and white. That is, a greater cortisol response resulted in fewer shooting errors, but only when responding to armed black targets.

These findings provide insight into the role that corticosteroids play in influencing cognitive processes by demonstrating that certain processes of cognitive function in humans can be enhanced by cortisol. The overall findings of the study suggest that police departments may want to modulate stress levels in training in order to increase officers' accuracy in their decisions to fire weapons. The results are also intriguing from a societal perspective when one examines the error rates for armed white targets. Officers did not correctly shoot armed white targets (relative to armed black targets). This inaccuracy with armed white targets can certainly be harmful in the field, as it could put officers' and potentially civilians' lives, in danger. Interestingly, the findings of this study are inconsistent with news accounts of police officers mistakenly shooting unarmed Black males. However, it is important to note that in other laboratory studies using the same shooter paradigm as the one in this



study, it has been found that civilians do tend to make more errors when completing this task, and do tend to shoot unarmed Black targets more frequently than unarmed White targets, but that was not the case in our sample of <u>police officers</u>.

Provided by Columbia Business School

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