Afghanistan are at greater risk for mental health symptoms.

METHODS: This longitudinal data analysis used generalized estimating equations to investigate the association between deployment with reported combat exposures and mental health outcomes in women over time, while adjusting for fixed and time-varying covariates.

RESULTS: Women who deployed in support of the current operations and reported combat exposures had significantly higher odds (adjusted odds ratio: 2.07, 95% confidence interval: 1.74, 2.46) of having a mental health condition than nondeployed women, after adjusting for demographic, military and behavioral covariates. Abnormal sleep, higher stress, problem drinking and the presence of mental health conditions prior to the baseline assessment were also significantly associated with an increased risk for mental health conditions over time while women with more education, and those in the Reserves/National Guard were at decreased risk for mental health conditions over time (all p-values <0.0001).

CONCLUSION: As the role of women in the military expands to include more combat support duties during deployment, addressing health outcomes specific to this special population is critical.

P85

PSYCHOSOCIAL FACTORS IN POLICE ACADEMY RECRUITS

A Mnatsakanova[1], JM Violanti[2], PN Joseph[1], ME Andrew[1], CM Burchfiel[1], [1]Health Effects Laboratory Division/National Institute for Occupational Safety and Health, CDC, Morgantown WV, [2]School of Public Health and Health Professions, Department of Social and Preventive Medicine, University at Buffalo, Buffalo, NY

PURPOSE: To examine psychosocial factors among police recruits in a 24-week high stress training environment.

METHODS: A total of 118 recruits (77% of first visit respondents) completed questionnaires at all three time points during their 6-month academy training (week 1, 10 and 23). Psychosocial factors including depression (CES-D), external life events, psychological well-being (Affect Balance Scale), and social support were assessed. Social support consisted of two dimensions: 1) internal-fellow troopers and teachers, and 2) external-spouses, parents, etc. Linear mixed models regression was used to analyze longitudinal data across the three visits.

RESULTS: Longitudinal assessment revealed that external life events score increased significantly over time (p-trend$=0.014$), whereas mean CES-D score decreased although not significantly (p-trend$=0.101$). Mean CES-D scores increased significantly with increasing tertiles of life event scores only at the last two visits (p-trend$=0.023$ and 0.006, respectively). Adjustments for age and marital status did not alter results. Cross-sectional analyses showed significant and inverse associations between depression and internal social support at visit two and three (p-trend $= 0.016$ and 0.001, respectively); external social support was not associated with depression. These associations were more evident among unmarried than married recruits.

CONCLUSION: Internal social support from fellow troopers and instructors was significantly associated with reduced levels of depressive symptoms among officers in high stress training. This assessment among police recruits may provide insight into potential coping strategies which would assist future officers in training and subsequently in their stressful occupation.

P86

EVALUATING THE HEALTHY WORKER EFFECT IN CAUSAL MODELS USING DIRECTED ACYCLIC GRAPHS

JM Symons, HQ Le, WM Lednar, DuPont Epidemiology Program, Integrated Health Services, Newark, DE

PURPOSE: The healthy worker effect (HWE) is widely known to bias standardized risk estimates from occupational cohort studies. Numerous researchers routinely describe the HWE as a limitation to the interpretability of potential causal relationships, particularly for mortality outcomes. Although multiple factors may contribute to HWE bias, it is commonly characterized as confounding due to the selection of individuals with "better health status" who are more likely to gain and retain employment relative to a general reference population.

METHODS: Directed acyclic graphs (DAG) illustrate the role of the HWE in causal models of occupational exposure and mortality. Specifically, three broad categories of mortality are evaluated including cancer (e.g. lung cancer), chronic disease (e.g. ischemic heart disease), and external causes (e.g. injury), with each having a distinct contribution from the HWE.

RESULTS: DAGs depicting three discrete causal models are used to assess occupational exposure and mortality pathways incorporating the HWE. These models include: a) associations confounded by the HWE, b) associations influenced by selection bias due to the HWE, and c) direct causal models after adjustment for the HWE. The potential for bias from the HWE varies in each contextual causal model.

CONCLUSION: The HWE influences the interpretation of standardized estimates from occupational studies. DAGs can be used to evaluate the potential for differential HWE bias of associations between occupational exposure and mortality.