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Flying with PTSD: An 8 year Review of PTSD DQs and Waivers in the USAF

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Disclosure Information

- I have no financial relationships to disclose.
- I will not discuss off-label use and/or investigational use in our presentation.
- The views expressed are those of the author and do not necessarily reflect the official policy or position of the Air Force, the Department of Defense, or the U.S. Government.

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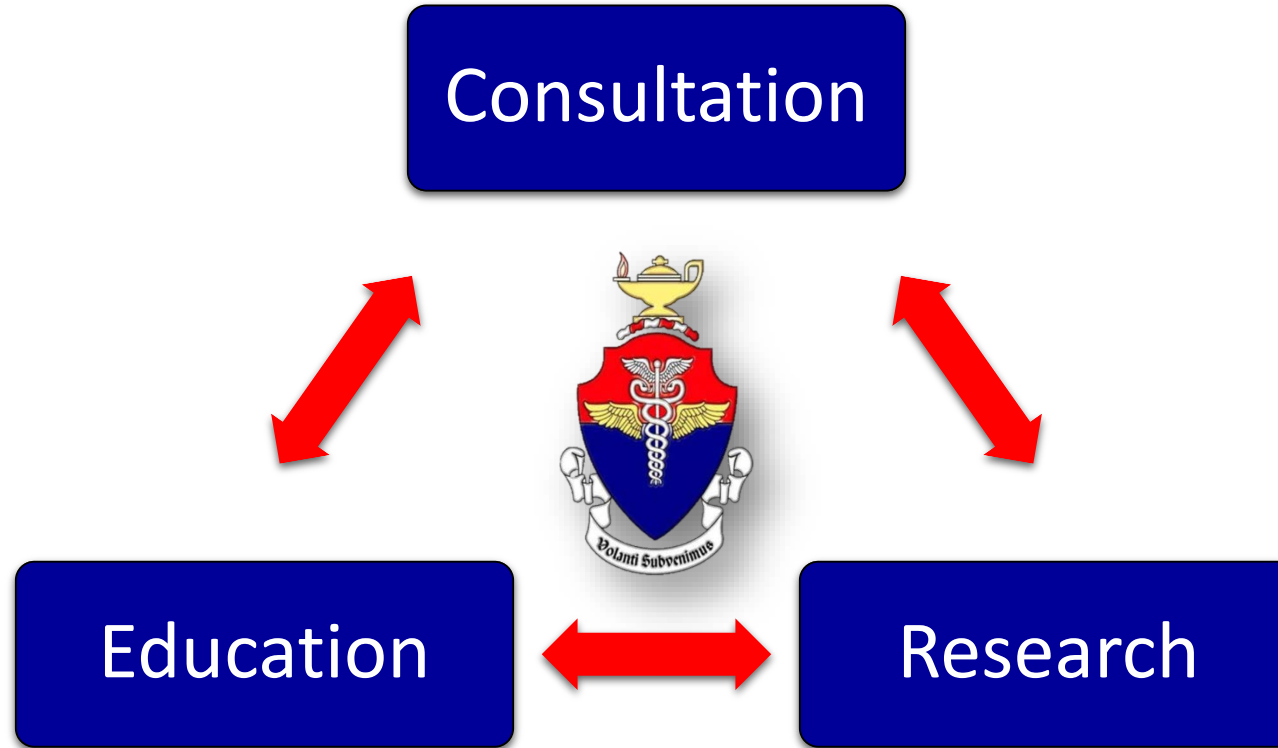
Core Activities



Medical Fight Screening - Neuropsychiatry

Consultation

- Fit For Duty Evaluation
  - Case reviews
  - Forensic/Occupational
  - Face to face
  - Very focused and intense
  - 12-18 hours
  - 4 days
  - Extensive neuropsychological testing
- Health Optimization
  - Psychoeducation
  - Healthy Lifestyle interventions
  - Drug/ETOH
  - Sleep Hygiene
  - Coping Mechanisms
  - Resilience Building
  - Psychotherapy

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Posttraumatic Stress Disorder (PTSD)

- Occurs in people who experienced or witnessed a traumatic event
  - Natural disaster
  - Serious accident
  - Terrorist act
  - War/combat
  - Rape
  - Violent personal assault

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PTSD Symptoms

- Re-experiencing
  - Nightmares
  - Flashbacks
  - Intrusive Thoughts
- Avoidance
  - Memories/Feelings
  - Reminders

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PTSD Symptoms

- Mood/Cognitive Problems
  - Poor Memory
  - Negative Beliefs/Mood
  - Detachment
- Arousal
  - Irritability
  - Hypervigilance
  - Increased Startle

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PTSD Symptoms

- More than 1 month
- Clinically Significant Distress
- Dysfunction
  - Social
  - Occupational
  - Other Important Areas

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PTSD in Military/Aviators

- Insomnia
- Poor Concentration/Focus
- Guilt and Shame
  - Surviving when others died
  - What they had to do to survive
- Fear of Return to Combat
- Occupational Impairment
  - Last area to show up

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Trauma ≠ PTSD

- Lifetime exposure to trauma > 50%
- Lifetime risk in the U.S. is 8.7% (DSM-5)
- Risk varies with type of trauma and premorbid functioning
- Highest rates of PTSD (1/3 to 1/2 of those exposed)
  - Rape
  - Military combat and captivity
  - Ethnically or politically motivated internment or genocide
- 10-20% of U.S. infantry have PTSD post-deployment

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Comorbidity - Psychiatric

- 80% more likely to have another psychiatric disorder
- Major Depressive Disorder
  - Affecting nearly 50%
- Alcohol Abuse
  - >50%
- Anxiety Disorders
  - 3-7x increased risk

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Comorbidity – Other Medical

- U.S. military deployed to Afghanistan and Iraq
  - Co-occurrence of mild TBI = 48%
- More likely to die of chronic conditions:
  - Cancer
  - Nervous system disorders
  - Musculoskeletal problems
  - Likely from the lingering stress from combat

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Treatment

- Early intervention
  - Refer to provider with experience
- Long-term, multi-layered
  - Psychotherapy
  - Medication
  - Healthy Lifestyle Interventions

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Treatment

- Psychotherapy – Treatment of Choice
  - Prolonged Exposure (PE)
  - Cognitive Processing Therapy (CPT)
  - Eye Movement Desensitization and Reprocessing (EMDR)
- Medication (SSRIs)
  - Manage Symptoms – reduce flashbacks, arousal, and avoidance
  - Comorbid Treatment – depression and anxiety
  - Participate Effectively in Therapy

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Aeromedical Concerns

- Sudden incapacitation
    - Nightmares/Flashbacks
- Subtle performance decrement of higher senses
    - Poor Sleep – decreased focus/concentration
    - Irritability/Anger – poor crew resource management
    - Hypervigilance – over checking checklist

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Aeromedical Concerns

- Stability under stress of aviation environment
  - Relapse to trigger exposure
- Recurrence not easily detected
  - Avoidance – not coming forward about symptoms
- Frequent therapy may lead to absences from duty
- Inability to perform sustained flying operations

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PTSD Study Findings

PTSD Study Group

- Approved May 2013
- Parameters
  - Waiver renewals at 1, 2, 5, and 10 years
- Two phases:
  - 2013-2015
  - 2015 – present
    - Questionnaire
    - Self-report measures

PTSD Study Group

- Purpose
  - Understand operational impact and provide Aircrew Standards Working Group with actionable data to assist in keeping flight standards current and relevant through evidenced-based standards
  - Inform ACS clinical decision-making by identifying risks and protective factors in flyers with PTSD
  - Better understand unique variables in flyers, to include personality, psychological, and operational, to educate and train providers at local bases who treat and assess flyers

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PTSD Study Group

- Questions
  - What aeromedical risks are involved in allowing flyers treated for PTSD to fly?
  - Are flyers treated for PTSD more likely to have relapses than flyers treated for other mental health conditions?
  - Is higher intelligence correlated with better outcomes?

PTSD Study Group

- Instruments
  - Questionnaire – treatment, functioning, lifestyle changes
  - PHQ-9 – depressive symptoms
  - PCL-5 – PTSD symptoms
  - MAB-II – intellectual ability
  - MicroCog – neurocognitive screen
  - MMPI-2 or MMPI-2-RF – distress/psychopathology
  - NEO-PI-3 – personality

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PTSD Study Results

- 64 pilots, aircrew and/or special duty personnel evaluated for PTSD
- Enlisted Duty Position
  - TACP/JTAC (n=10)
  - Sensor Operator (n=4)
  - Loadmaster (n=8)
  - PJ (n=3)
  - Air Traffic Controller (n=1)
  - Airborne ISR Operator (n=1)
  - Combat Controller (n=1)
- Officer Duty Position
  - Pilot (n=5)
  - Navigator (n=3)
  - Flight Surgeon (n=2)
  - RPA Pilot (n=2)
  - Electronics Warfare Officer (n=1)
  - Flight Nurse (n=1)

	n=	Waiver	RTFS%
Gender			
Male	51	43	84.31%
Female	13	9	69.23%
Ethnicity			
Caucasian	56	46	82.14%
Black	2	2	50%
Hispanic	2	2	100%
Other	2	2	100%
Grade			
Enlisted	45	37	82.22%
Officer	19	15	78.95%
Flying Class			
II	17	14	82.35%
III	34	26	76.47%
GBC	8	7	87.50%
I/IA	2	2	100%
ATC	1	1	100%
SMOD	1	1	100%
Other	1	1	100%
Marital Status			
Single	9	9	100%
Married	29	24	82.76%
Divorced	2	2	100%
Separated	1	1	100%
Widowed	1	1	100%
- Blank -	22	15	68.18%

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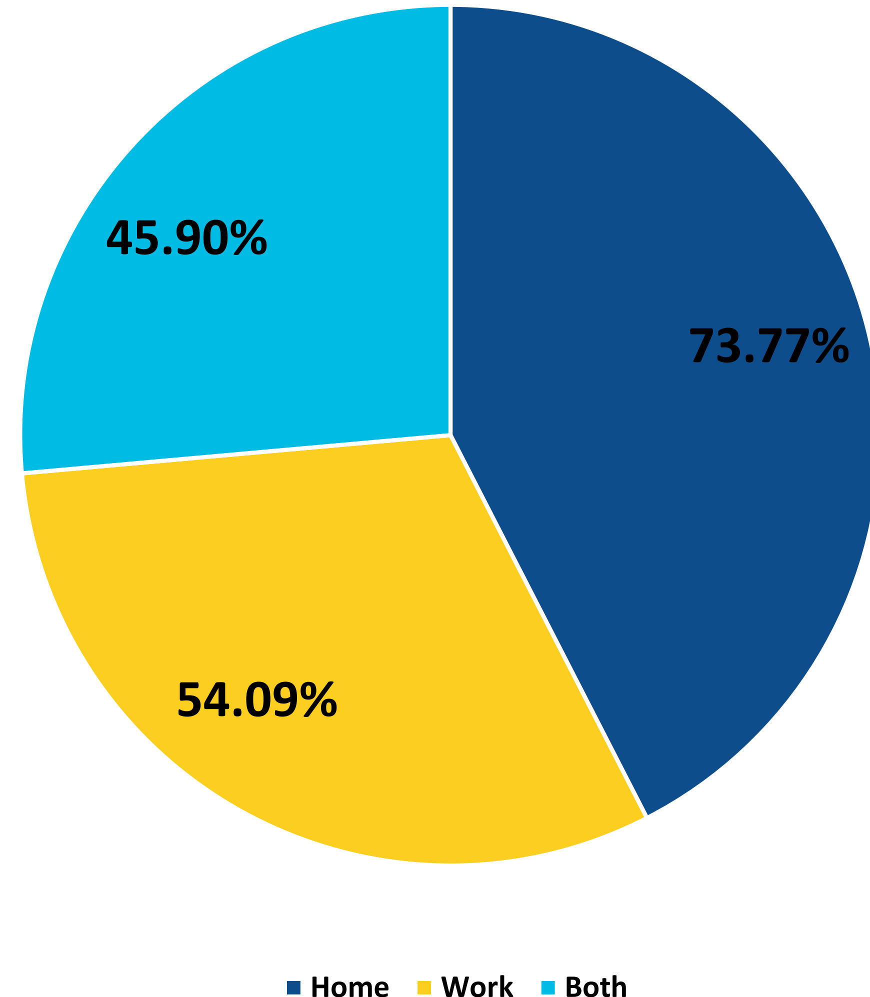
Functional Impact

- PTSD symptom effects
  - 45 – problems at Home
  - 33 – problems at Work
  - 28 – problems at Both

- PTSD negatively impacting general health (rated 0 to 10):
  - 7.78 = before treatment
  - 2.57 = after treatment



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PTSD Follow-up Results

- 40 flyers evaluated at least twice at the ACS for PTSD
  - 35 males, 5 females
  - 24 enlisted, 16 officers
  - 33 Active Duty, 7 Air National Guard
  - Mean age = 35; range between 22 and 50
  - Mean months between evaluations:
    - 1 and 2 – 18 months
    - 2 and 3 – 16 months
    - 3 and 4 – 22 months
- Waiver after initial evaluation – 52/64 (81.25%)
- Waiver after follow-up evaluation – 35/40 (87.50%)

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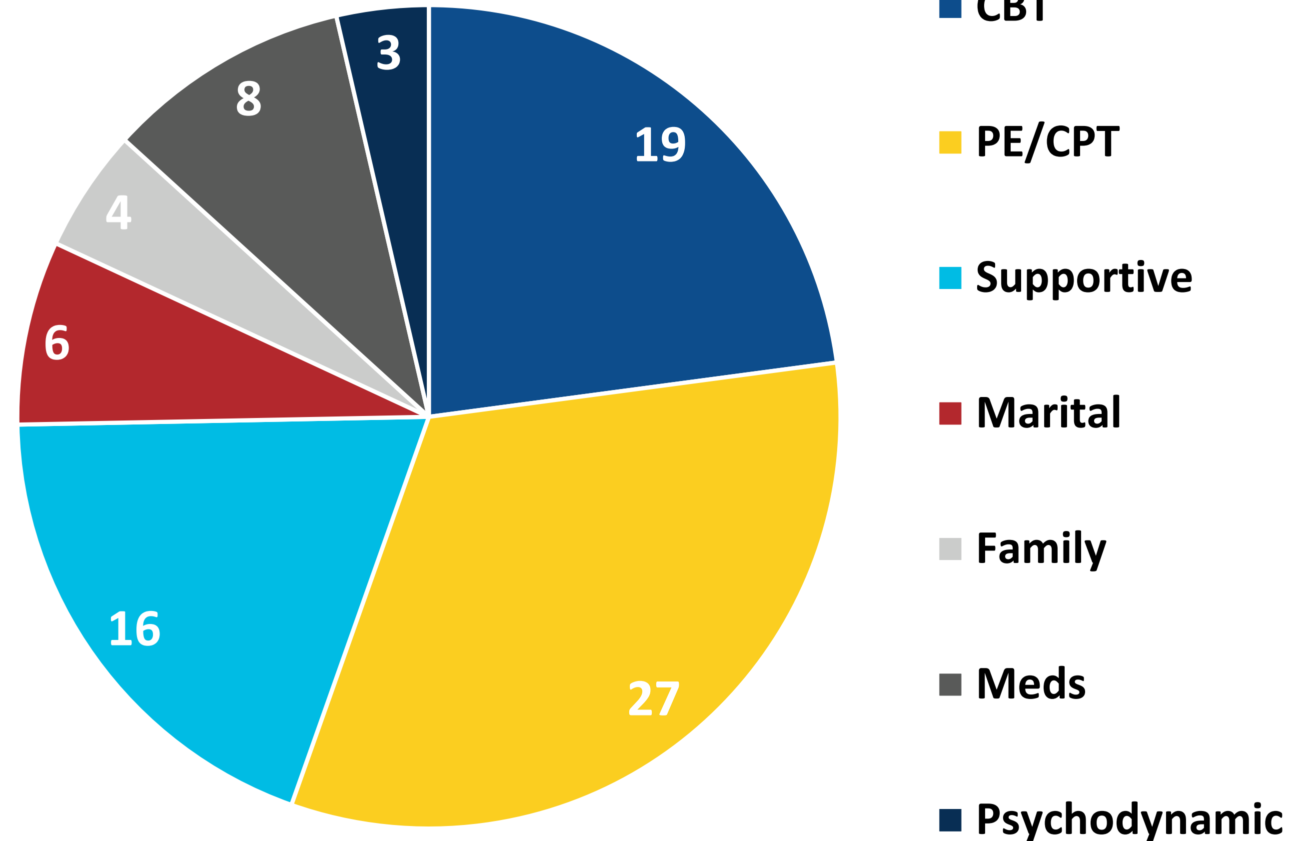
Treatment - Modalities

- Medication
  - 12.70 %
- Psychotherapy and Medication
  - 90.36%
- Effectiveness (0-10):
  - mean = 8.5



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Lifestyle Interventions

- At least one
  - 58/61 (95%)
- Effectiveness (0-10)
  - mean= 8.29

Intervention	Count
Exercise	43
Relaxation/meditation/solitude	41
Healthy eating	38
Activities promoting healthy relationships	34
Paced/Deep breathing	34
Avoiding unhealthy relationships/situations	34
Reduced alcohol use	27
Spiritual pursuits/prayer	23
Reading self-helpbooks	20
Volunteerism/service to others	18
Journaling	12
Reduced caffeine use	12
Reduced nicotine use	10

Y-axis: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45

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Lingering Symptoms

- 62% reported continuing symptoms post-treatment:
  - 50% - negative feelings, easily startled, low concentration
  - 38% - hypervigilance, poor sleep
  - 25% - intrusive memories, feeling distant
  - 13% - nightmares, emotional reminders, avoidance, negative beliefs, self-blame, anhedonia, limited positive feelings

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Officer Intelligence Scores

	Medically Acceptable (Waiver)	Disqualified
Average of Verbal IQ:	122	116
Average of Performance IQ:	128	108
Average of Full Scale IQ:	127	113

Enlisted Intelligence Scores

	Medically Acceptable (Waiver)	Disqualified
Average of Verbal IQ:	111	114
Average of Performance IQ:	118	122
Average of Full Scale IQ:	115	119

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Officer MicroCog Scores

Medically Acceptable (Waiver)
Disqualified

	Medically Acceptable (Waiver)	Disqualified
Average of General Cognitive Functioning (AE)	108	100
Average of Attention/Mental Control (AE)	101	108
Average of Reasoning/Calculation (AE)	105	97
Average of Memory (AE)	114	106
Average of Spatial Processing (AE)	109	89
Average of Reaction Time (AE)	102	97

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Enlisted MicroCog Scores

■ Medically Acceptable (Waiver)
■ Disqualified

	Medically Acceptable (Waiver)	Disqualified
Average of General Cognitive Functioning (AE)	100	101
Average of Attention/Mental Control (AE)	101	105
Average of Reasoning/Calculation (AE)	93	94
Average of Memory (AE)	107	104
Average of Spatial Processing (AE)	108	102
Average of Reaction Time (AE)	96	96

Y-axis: 70, 80, 90, 100, 110, 120

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Conclusions

- Most flyers return to baseline functioning with treatment
    - Common to have subclinical symptoms
- Flyers not recommended for waiver exhibited:
    - Higher PTSD symptoms
    - Higher Depressive symptoms
    - Lower intelligence scores in officers
    - Lower cognitive functioning in officers
    - Higher emotional distress and symptoms

Conclusions

- Most flyers received mixed modality treatment
  - Psychotherapy and Medication
- Most flyers used lifestyle interventions
  - Effective in managing symptoms
- Flyers recommended for waiver at initial evaluation, remained qualified on follow-up
  - Stable functioning
  - Low levels of relapse

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Questions?