

- Military personnel experience stressors unique to military service (e.g., deployments, shift work, family separation), elevating the risk of developing sleep disorders which negatively impact resilience and operational readiness.
- Poor sleep quality may contribute to numerous sleep, medical, and mental health disorders.
- Reliably evaluating sleep quality in military personnel provides salient clinical information for the diagnosis and treatment of disease related to poor sleep quality.
- Unfortunately, there is no self-report assessment designed to measure the sleep quality of active duty military personnel throughout their service.
- We developed the self-report Military Service Sleep Assessment (MSSA) for a prospective observational study to evaluate if there are differential responses to treatment between active duty women and men receiving standard of care, sleep-focused therapies.

Methods

- To develop the MSSA:
 1. We consulted with experts in military sleep medicine, trauma, psychometrics, and assessment development to generate a pool of clinically salient items.
 2. The MSSA was piloted five times by individuals with expertise in assessment development with subsequent modifications based on recommendations until there was a consensus that it was ready to be piloted in a military population.
 3. The MSSA was piloted twice by ten veterans, research assistants, and project coordinators and subsequently modified for clarity and ease of use.
 4. The readability of the MSSA instructions and items were designed to have a Flesch Reading Ease >60 (63.4) and a Flesch-Kincaid Grade Level ≤7.0 (7.2).

Table 1.	Section	Example Items	Response Options
Self-Perceived Primary Sleep Disturbance	Rate your overall sleep quality for the last three months		5-point Likert scale (1= Low, 5=High)
	Currently, what is your primary problem with your sleep quality? (Check only one)	<ul style="list-style-type: none"> • Trouble falling or staying asleep • Grinding my teeth while I sleep • Nightmares or bad dreams • Lack of daytime energy • Snoring • Waking up choking/gasping or being told I choke/gasp in my sleep 	<ul style="list-style-type: none"> • Daytime sleepiness/falling asleep at inappropriate times • Legs bothering me when falling asleep or twitching or jerking while I sleep • Sleep walking/sleep eating • Other
	Do you think this sleep problem was caused by your military service?	<ul style="list-style-type: none"> • Yes • No • Unsure 	
Service Related Events Impact on Sleep: <ul style="list-style-type: none"> • Entry into military service • Permanent Change of Station (PCS) • Deployments • Redeployments 	When did you enter military service?		MM/YY
	How many times have you had a permanent change of station (PCS)?	<ul style="list-style-type: none"> • 0 • 1-5 • 6-10 • 11-15 • 16+ 	
Stressful Life Events Impact on Sleep: <ul style="list-style-type: none"> • Non-service related • Military related OTHER THAN DEPLOYMENT • Traumatic experience OTHER THAN DEPLOYMENT 	Examples of stressful life events: Marriage/divorce, financial hardship, illness, training injury, sexual violence, natural disaster		Asked to identify the type of life event (non-service related, military related other than deployment, or traumatic experience other than deployment), briefly describe the life event, write the month and year the event started, and rate overall sleep quality.

Preliminary Results

Table 2.	Item	Responses	Men (N = 47)	Women (N = 22)
Currently, what is your primary problem with your sleep quality?	Trouble falling or staying asleep		42% (n=20)	59% (n=13)
	Nightmares or bad dreams		2% (n=1)	5% (n=1)
	Lack of daytime energy		13% (n=6)	18% (n=4)
	Snoring		9% (n=4)	0% (n=0)
	Waking up choking/gasping		17% (n=8)	4.5% (n=1)
	Daytime sleepiness/falling asleep		15% (n=7)	9% (n=2)
	Legs bothering me/twitching/jerking		0% (n=0)	4.5% (n=1)
	Other		2% (n=1)	0% (n=0)
At any time did a PCS have an impact on your sleep quality for more than three months?	Yes		28% (n=13)	36% (n=8)
	No		62% (n=29)	55% (n=12)
	N/A		10% (n=5)	9% (n=2)
At any time did a deployment have an impact on your sleep quality for more than three months?	Yes		57% (n=27)	50% (n=11)
	No		26% (n=12)	9% (n=2)
	N/A		17% (n=8)	41% (n=9)
At any time did a redeployment have an impact on your sleep quality for more than three months?	Yes		40% (n=19)	41% (n=9)
	No		36% (n=17)	14% (n=3)
	N/A		24% (n=11)	45% (n=10)

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