



Joint Medical Surveillance in Bosnia: Psychological Screening

Report V:
Feb 96 - Dec 97

Prepared by the U.S. Army Medical Research Unit-Europe



Purpose

To present information related to the psychological battery redeployment screening program and report on results obtained from the period FEB 96 - DEC 97.

Specific issues to be addressed:

- Background on the Psychological Battery Program
- The Psychological Battery Procedure
- Clinical and Diagnostic issues
- Results of data analysis



Summary of Findings

- 46,444 personnel completed the psychological screen during OJE and OJG.
- 19.0% of the total force surveyed exceeded criteria on either the PTSD, depression or alcohol abuse scales.
- Deployment length was predictive of higher positive rates on all three scales, with increases occurring after 5-6 months deployment.
- 2.4% were referred for home station follow up.
- The Army and Marines had the highest home station referral rates.
- Rate differences in rank, gender, and component were identified.
- Soldiers who reported psychological problems were nearly twice as likely to report physical problems, too.



Value of Psychological Data Base

- Provide the EUCOM, USAREUR and USAFE surgeons and Combatant Commanders information on the mental health of the redeploying force over time
- Identify deployment mental health issues for interventions with the follow-on force
- Project patient load at home station mental health facilities for redeploying service members
- Establish a reference database for comparison to future operations and follow-on operations
- Facilitate the assessment of soldiers' readiness for subsequent deployments



USAMRU-E's Activities

- **Project Coordinator:** Developed and implemented procedures for automated, in-theater Psychological Battery.
- **Deployments:** Deployed teams to the Bosnia AO to provide technical and scientific support to the Joint Medical Surveillance program.
- **Surveys processed:** Psychological screening surveys continuously added to database that now contains over 50,000 cases.
- **Response:** Responded to requests by the Public Affairs Office.
- **Survey Re-Design:** Designed and formatted the secondary psychological instrument so that it is machine scorable.
- **Survey Re-supply:** Produced and distributed over 80,000 primary and 20,000 secondary screening instruments to the Bosnia area of operations for both the Army and Air Force.
- **Reports:** Prepared four reports on the psychological battery.
- **New Study:** Implementing an Army Garrison Study to provide comparison data.



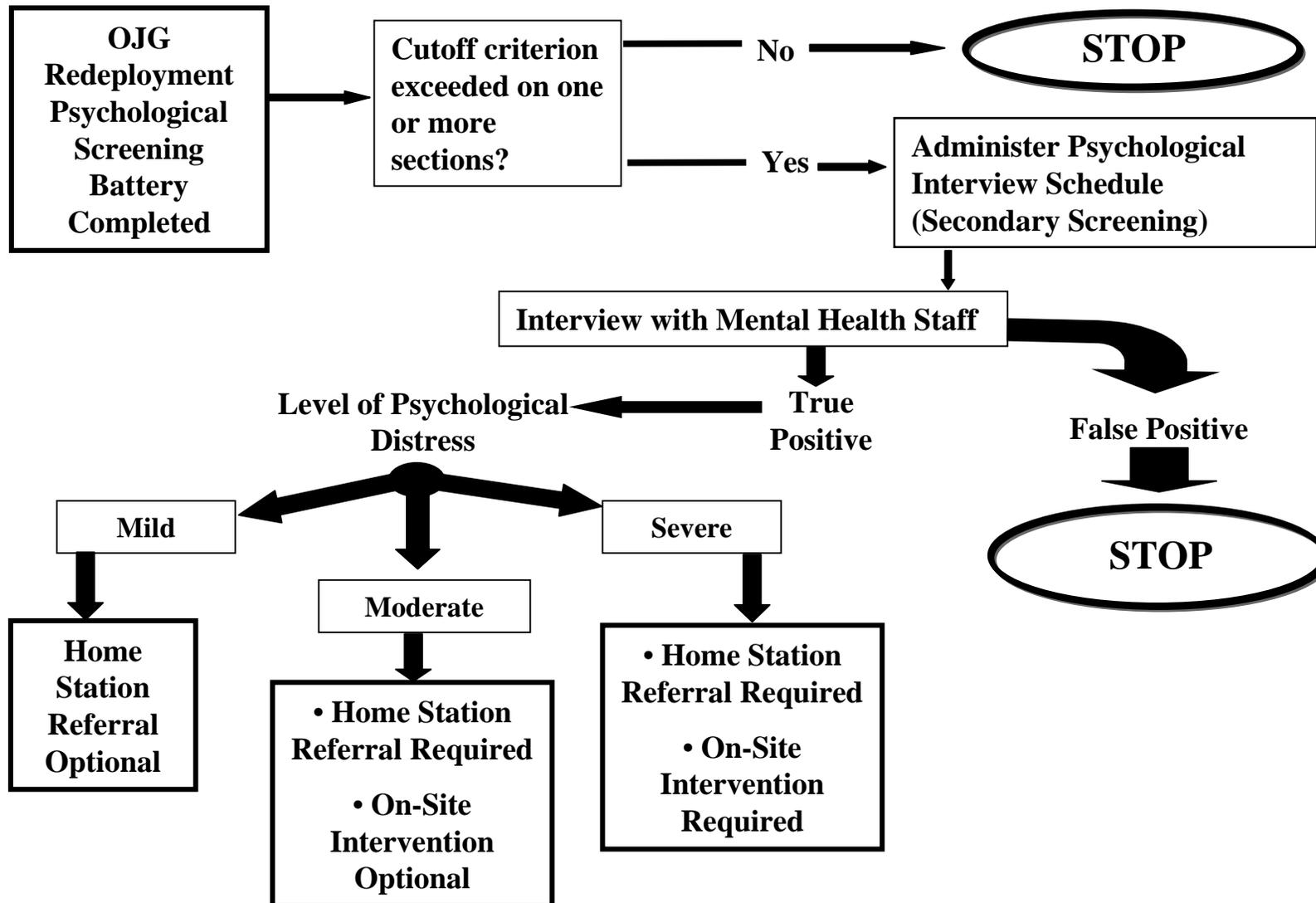
Psychological Screening Procedures

Three Components

- **Primary Screen:** Administered to all redeploying military personnel. Measures three psychological symptom categories:
 - post-traumatic stress
 - depression
 - alcohol abuse
- **Secondary Screen Interview:** Military personnel whose scores exceed established criteria on any indicator are interviewed by an appropriate clinician.
- **Home station referral:** Based on the interview, military personnel may be referred for home station follow-up. Referrals are documented on the medical SF600 and placed in the service members' medical records.

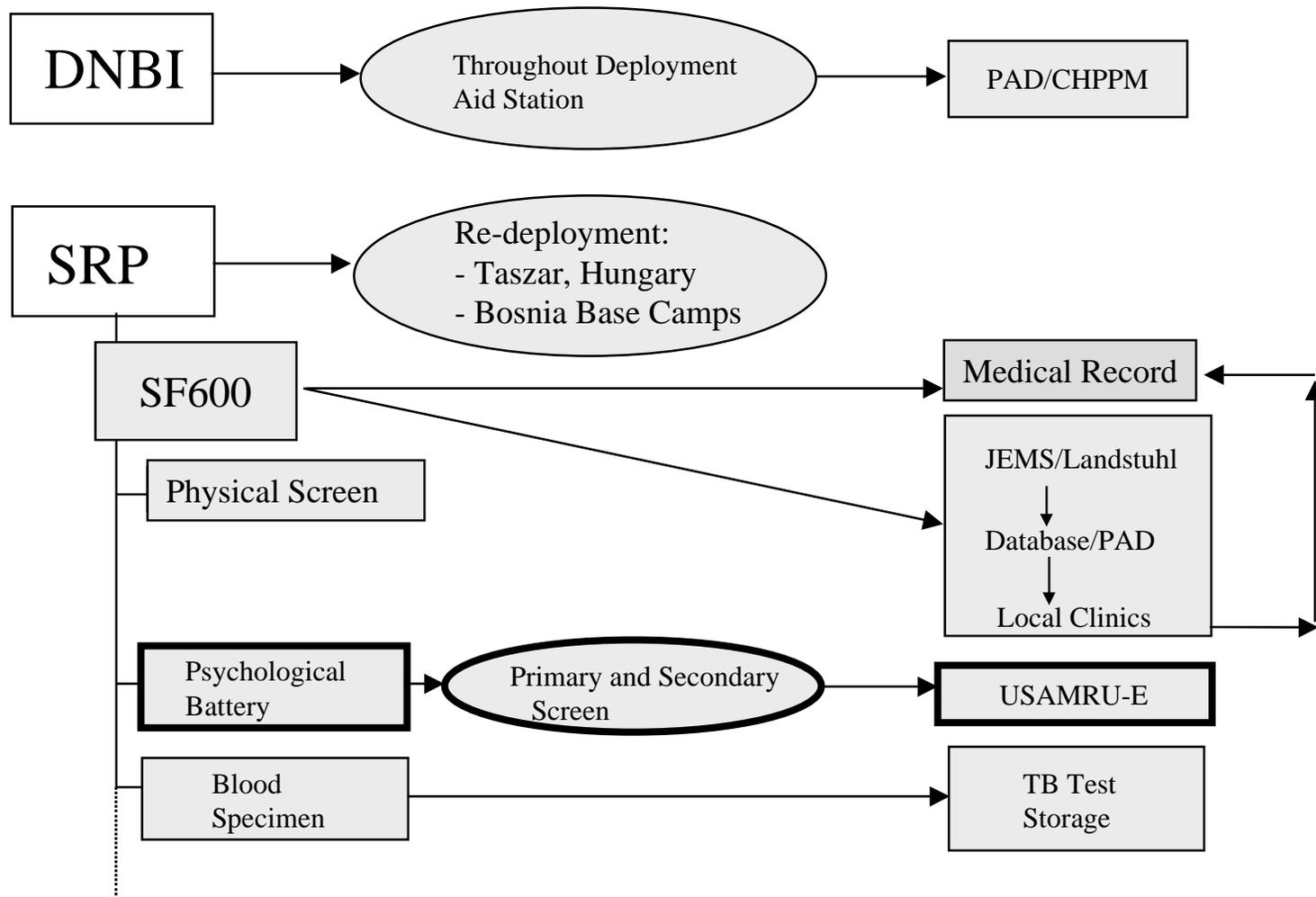


OJG Psychological Screening Scoring Flowchart



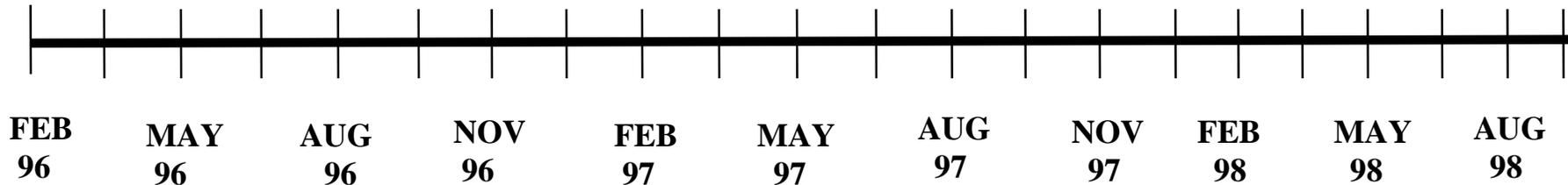
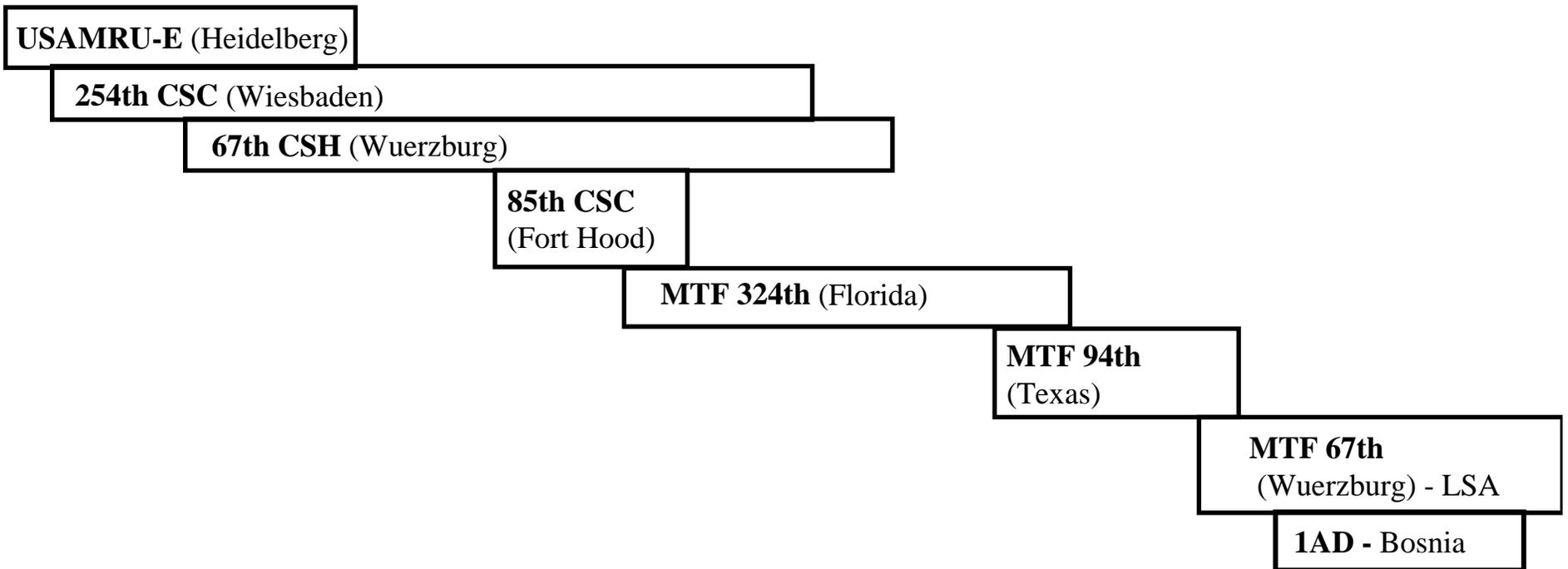


Force Surveillance Program: OJE/OJG



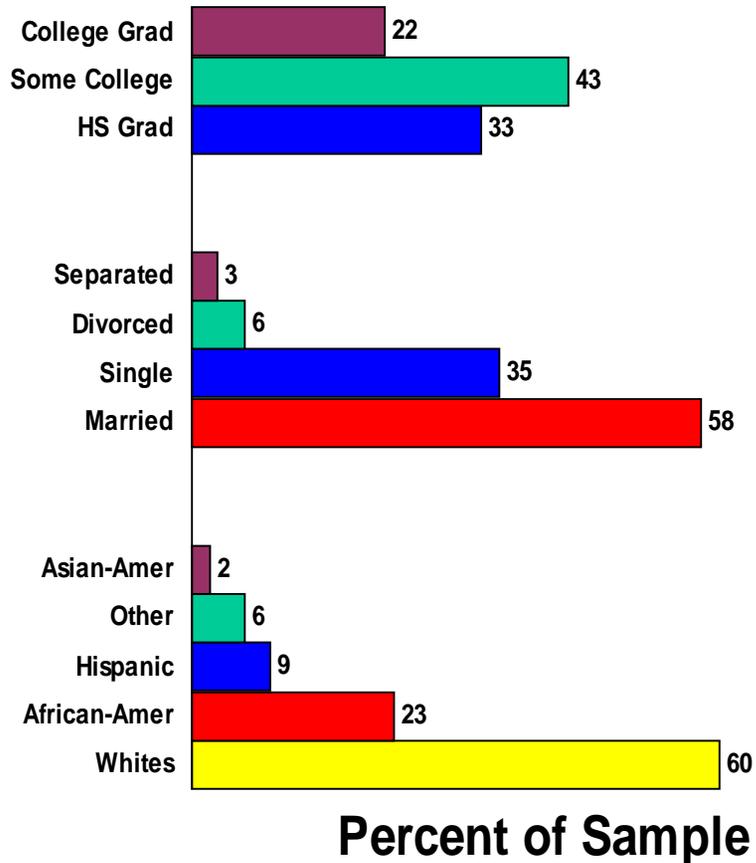


Units Conducting Psychological Screening





Demographics: Race, Marital Status & Education



- The majority had at least some college education.

- More than half (58%) were married, 35% were single.

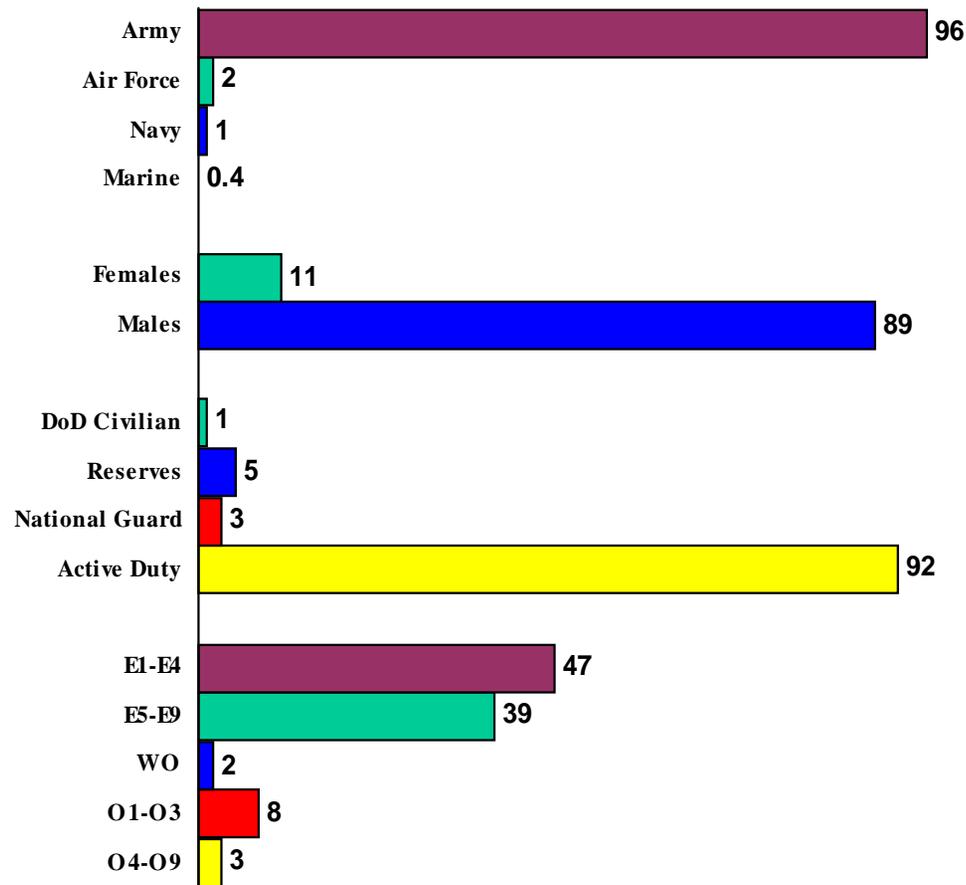
- 60% were white; 23% were African-American.

Note: Numbers may not sum to 100% because of rounding.

Based on N = 46,444 (FEB 96 - DEC 97)



Demographics: Component, Gender, Status & Rank



•Most were Army.

•Most were male.

•Most were Active Duty.

•86% were enlisted; 13% were officers.

Percent of Sample

Note: Numbers may not sum to 100% because of rounding.

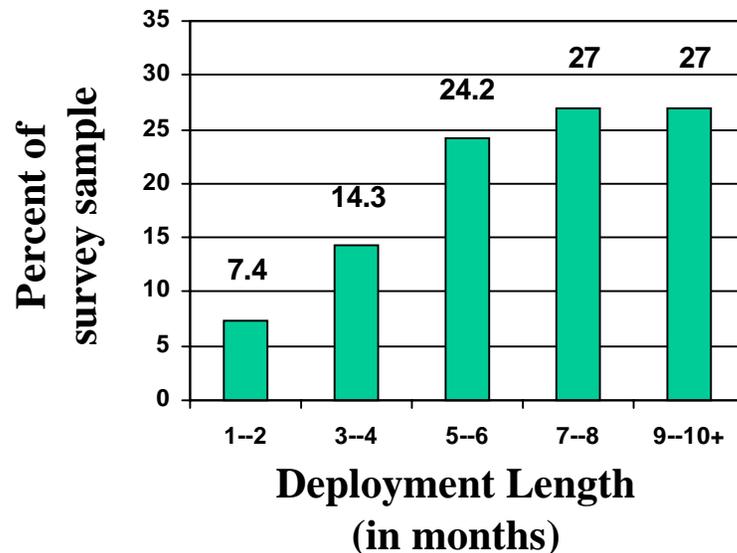
Based on N = 46,444 (FEB 96 - DEC 97)



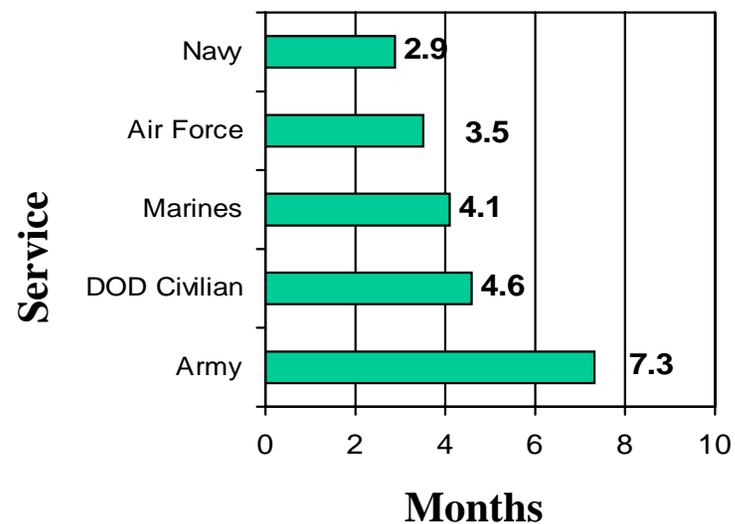
Deployment Length

- Average deployment length for the entire force was 6.6 months.
- 27% of the force were deployed for longer than 8 months.
- The Army had the highest average deployment length in the Bosnia theater compared to all other services. The DoD civilians and the Marines had the next highest, followed by the Air Force and Navy.

Average Deployment Length



Average Deployment Length by Service

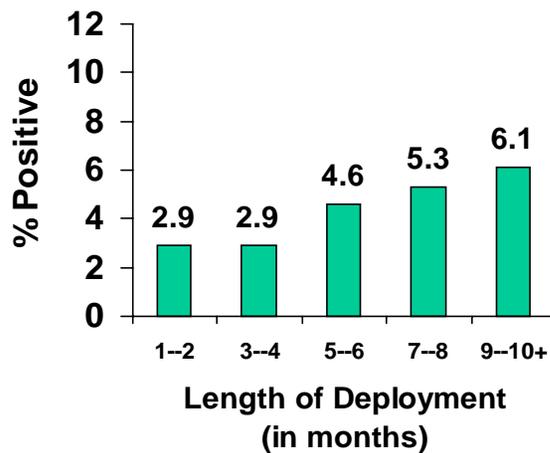




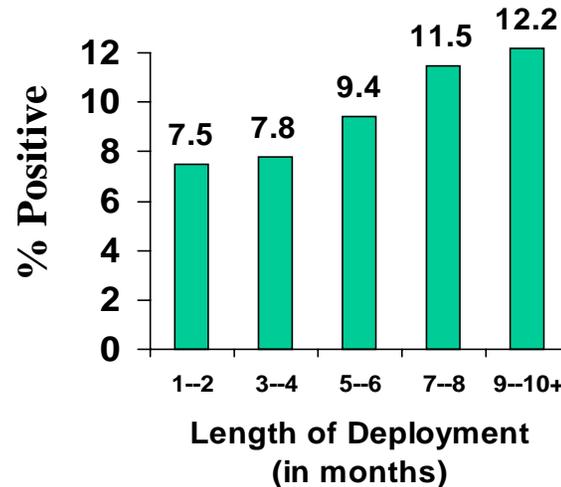
Deployment Length: Primary Screen

- Percent of total Bosnia force whose scores on the primary psychological screens (PTSD, depression, and alcohol) exceed specified criteria as a function of length of deployment.
- 19.0% of those receiving the primary screen exceeded established criteria on at least one of the scales.
- In general, the highest rates occurred among those deployed for longer than 5 months, with the first increase occurring after 5-6 months deployment.

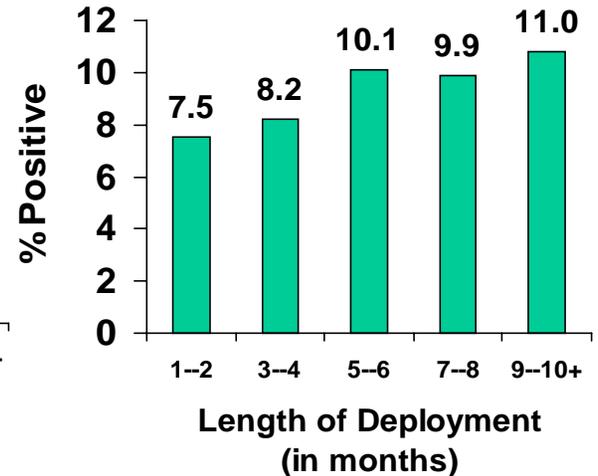
PTSD



Depression



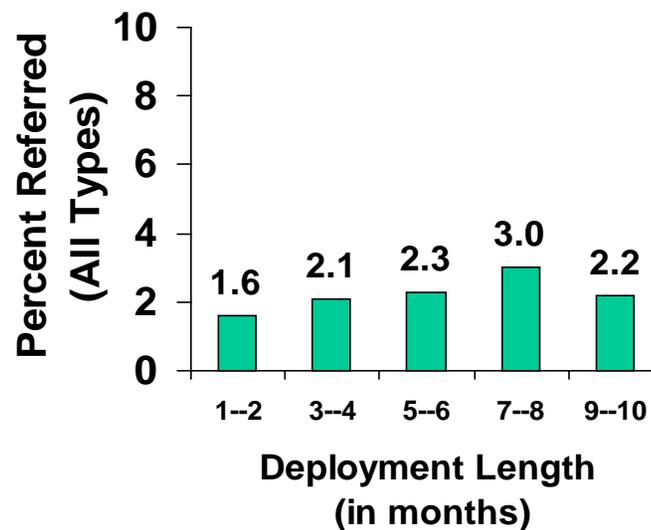
Alcohol Abuse





Deployment Length: Referrals

- Percent of total force referred for home station follow-up as a function of length of deployment.
- There is a peak for referral rates around 7 to 8 months of deployment. During OJE there was an increase in referrals at 5 to 6 months (with a peak of 4.4%).
- Unlike the primary screen rates, referral rates can be affected by a particular psychological battery screening team, based on differences in experience and training.





Population Incidence: Referrals

- Comparison of military referral with population rates.
- No reference data sets exist which permit a direct comparison between these redeployment military rates and other populations. *Indirect* comparisons, however, can be made between military referral rates and population diagnostic rates.
- The military referral rates for PTSD, depression, and alcohol abuse are below or within general population rates.

NOTE: The referral rates include two numbers: the first number is based on the percent of the entire population surveyed, the second number is based on the percent of the respondents receiving a secondary screen (i.e. those exceeding criteria on any one scale). The population diagnostic rates are based on the U.S. population.

	Military Referral Rate N = 35,677		Population Diagnostic Rate
	Total population	Secondary screening population	
PTSD (questions pertain only to deployment)	0.3%	1.6%	1 - 14% (general population) 3 - 58% (for at risk individuals)
Depression	1.0%	4.9%	1.7% - 3.1%
Alcohol Abuse	0.6%	3.2%	1.1% - 5.7%



Comparison of Forces: Primary Screen

- Percent of each service (Army, Navy, Air Force, Marines, and DoD civilians) whose scores exceed established criteria on the PTSD, depression, and alcohol scales.
- The Army personnel had the highest rates on all primary scales compared with the other services followed by the Marines, Navy, Civilians, and Air Force.

	PTSD	Depression¹	Alcohol	Total²
Total (N = 45,898)	4.8%	10.3%	9.8%	19.0%
Army (n = 43,717)	5.0%	10.6%	9.9%	19.4%
Navy (n = 618)	2.9%	7.9%	7.6%	14.8%
Air Force (n = 1,074)	0.7%	2.5%	3.9%	6.3%
Marine (n = 198)	3.0%	7.6%	8.3%	15.6%
Civilian (n = 291)	3.4%	5.1%	7.4%	12.4%

¹ Of those scoring below criteria on depression, 1.7% endorsed an item assessing suicidal ideation.

² NOTE: Numbers may not sum to 100% because of rounding.



Comparison of Forces: Secondary Screen

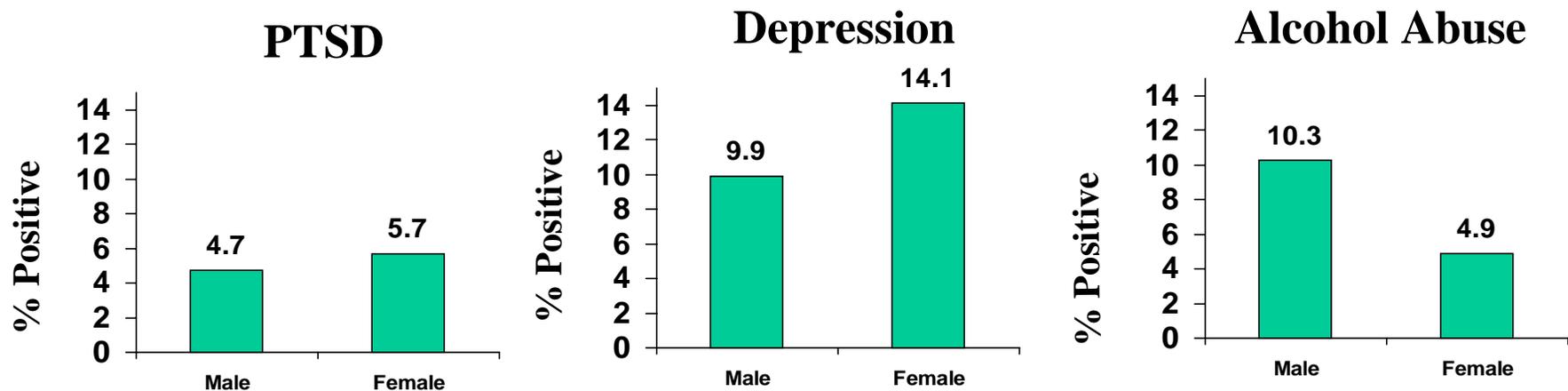
- Percent of each service (Army, Navy, Air Force, Marines, and DoD civilians) receiving a home station referral.
- The Army and Marines had the highest home station referral rates, followed by DoD civilians, the Navy, and the Air Force.
- Among those exceeding criteria on one of the primary scales, Civilians, Army, and Marines have the highest referral rates, whereas the Navy and Air Force had a relatively low rate of referral.

	Referred (% of total sample; n=46,444)	Referred (% of those interviewed; n=1,024)
Total (N = 45,902)	2.4% (n = 1,095)	11.8%
Army (n = 43,719)	2.4% (n = 1,067)	11.9%
Navy (n = 618)	1.1% (n = 7)	6.6%
Air Force (n = 1,074)	0.5% (n = 5)	7.6%
Marine (n = 198)	2.5% (n = 5)	10.0%
Civilian (n = 293)	1.7% (n = 5)	14.3%



Gender Comparisons: Primary Screen

- Percent of males and females of the force in the Bosnia theater whose scores on the PTSD, depression, and alcohol scales exceed established criteria.
- Rates on the PTSD scale were higher for females than males, although the difference was not large.
- More strikingly, the rate for the depression scale was higher for females than males, while the rate for the alcohol abuse scale was higher for males than females.

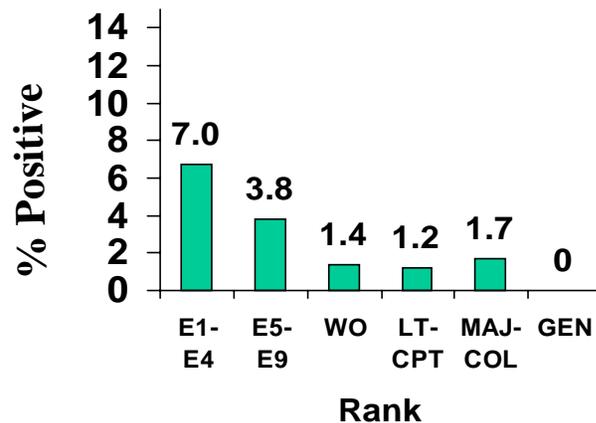




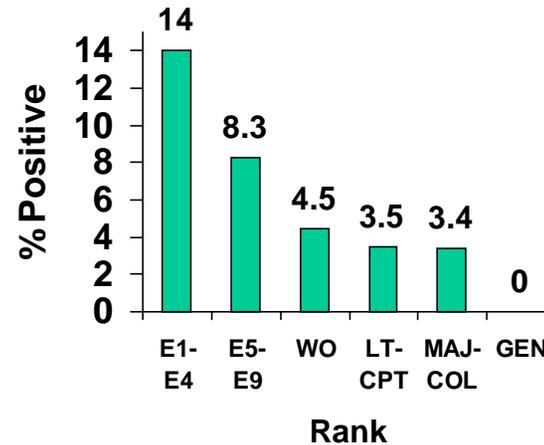
Rank Comparisons: Primary Screen

- Percent of the force in the Bosnia theater whose scores on the PTSD, depression, and alcohol scales exceed establish criteria as a function of rank.
- In general, the rates of the junior enlisted and NCOs were higher than the rates of officers on all three scales (PTSD, depression, and alcohol abuse).

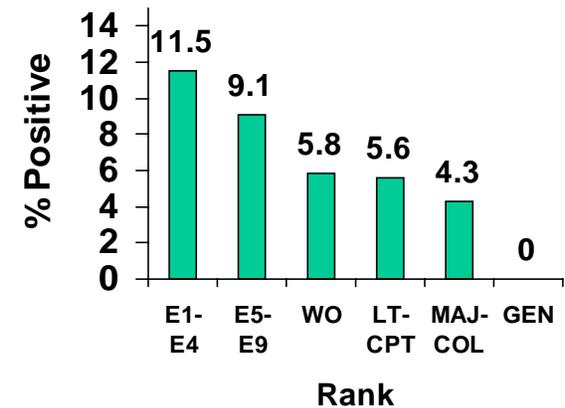
PTSD



Depression

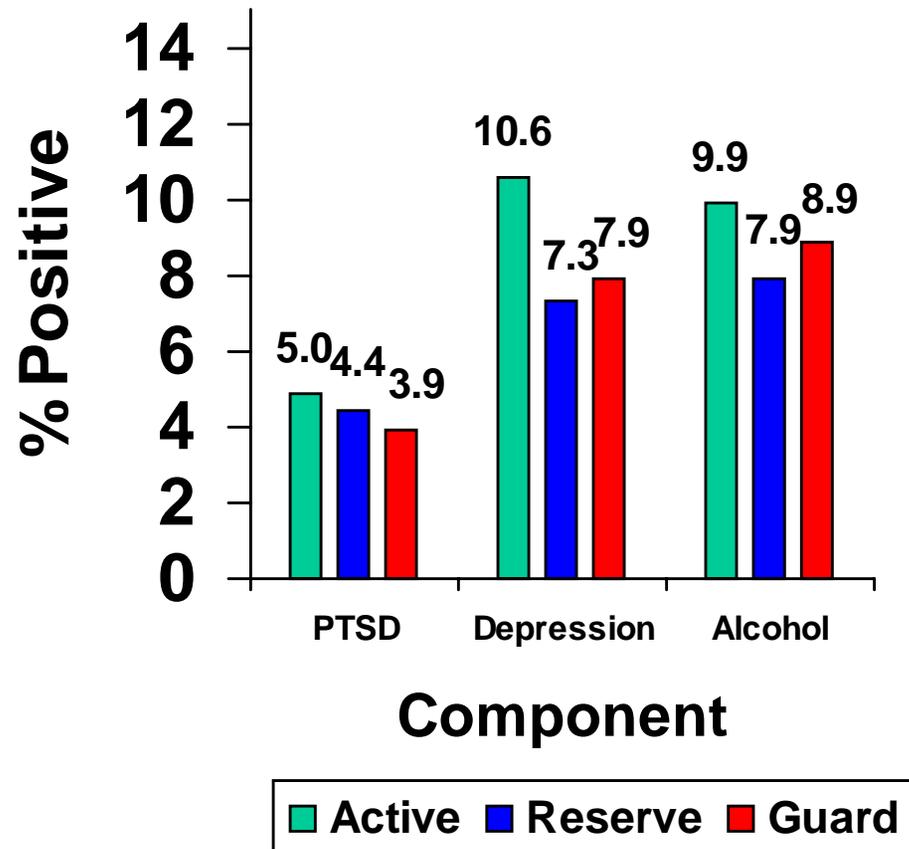


Alcohol Abuse





Component Comparisons: Primary Screen



- Percent of the force in the Bosnia theater whose scores on the PTSD, depression, and alcohol scales exceed establish criteria as a function of component.
- In general, the rates of the active duty personnel were higher than the rates of reservists and national guard personnel on all three scales (PTSD, depression, and alcohol abuse).
- In terms of home station referral rates, the active duty and reservist personnel had higher rates (2.4% and 2.2% respectively) than the National Guard (0.9%).



Scale Reliability

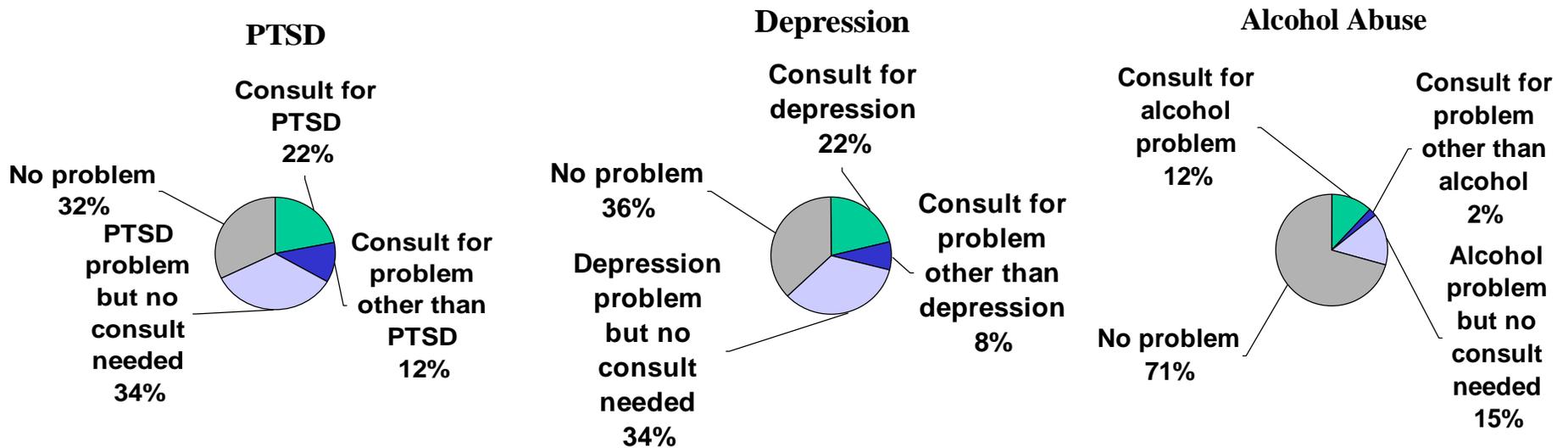
- The PTSD scale is highly reliable.
- The Zung and the CAGE, both published scales, had lower rates of reliability.

<u>SCALE</u>	<u>Chronbach's Alpha</u>
Zung	.53
PTSD	.92
CAGE	.49



Effectiveness of Symptom Scales: Interviews

- Disposition rates¹ for military personnel scoring in the positive range on the three screening measures (PTSD, depression, and alcohol abuse)
- The PTSD and depression scales were effective in identifying redeploying personnel with problems 68% and 64% of the time, respectively; the alcohol abuse scale was effective only 29% of the time.

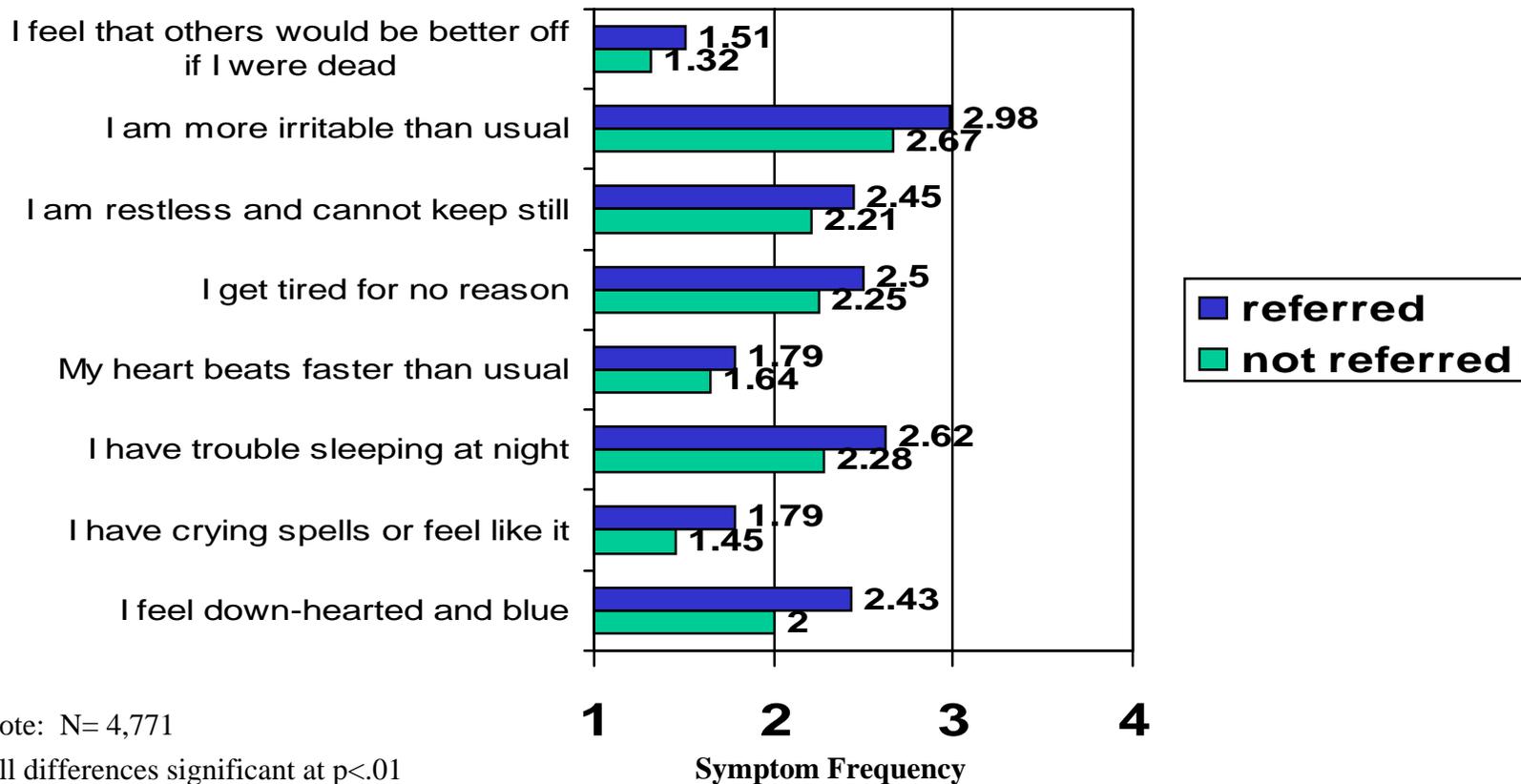


¹Case disposition breakdowns are based on 5,395 military personnel redeploying.



Analysis: Zung Depression Scale

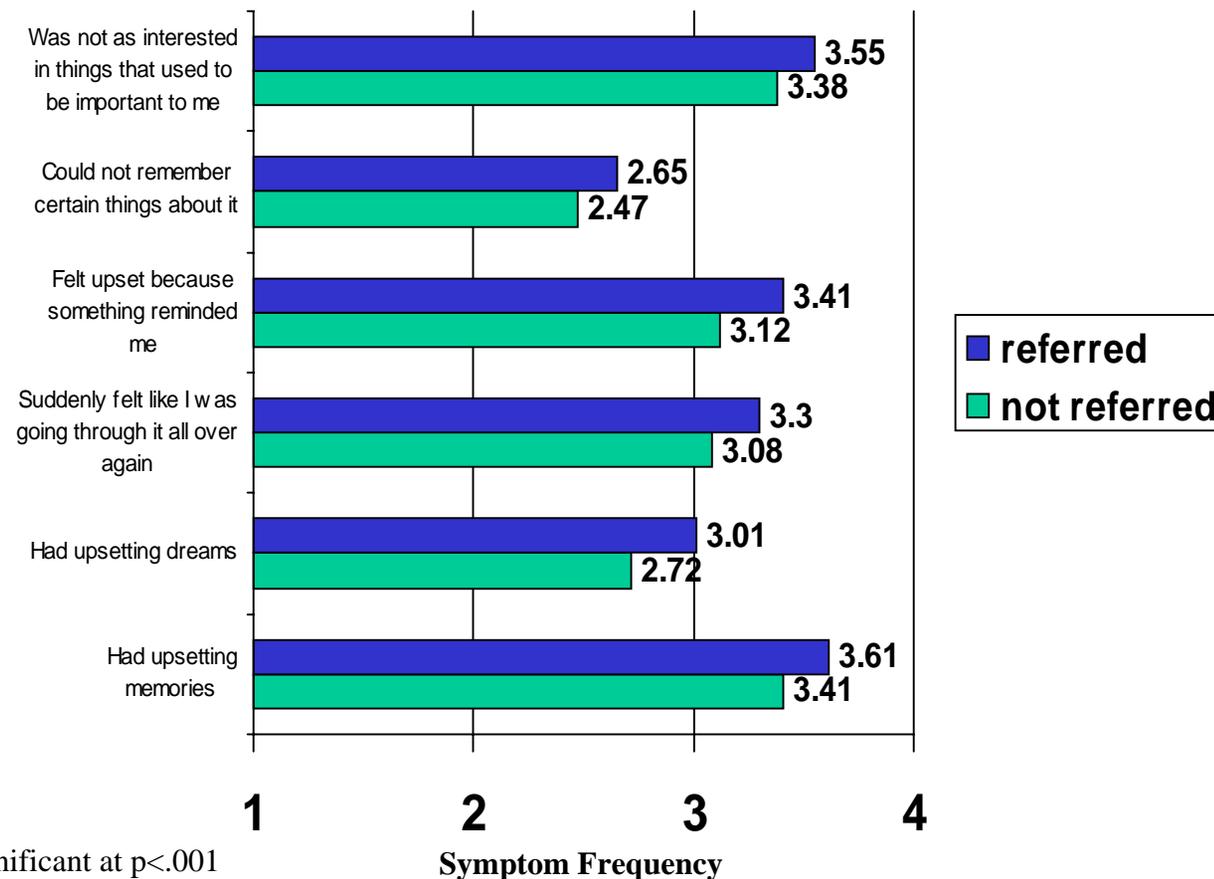
- All items on the scale contributed to soldiers exceeding criteria on the primary screen.
- For those who exceeded criteria on the Zung, 8 items distinguished between those who got any type of referral and those who did not receive a referral.





Analysis: PTSD Scale (1 of 2)

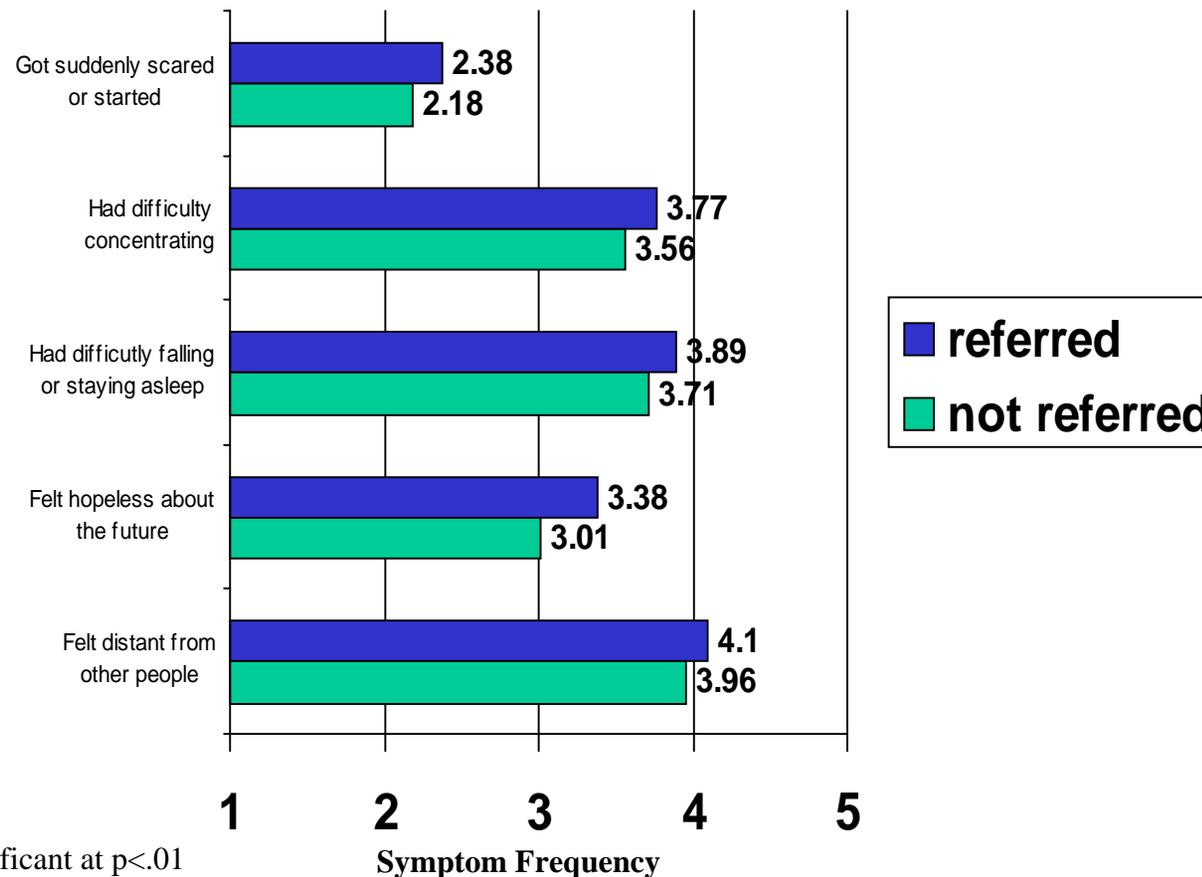
- All items on the scale contributed to soldiers exceeding criteria on the primary screen.
- For those who exceeded criteria on PTSD, 11 items distinguished between those who got any type of referral and those who did not receive a referral.





Analysis: PTSD Scale (2 of 2)

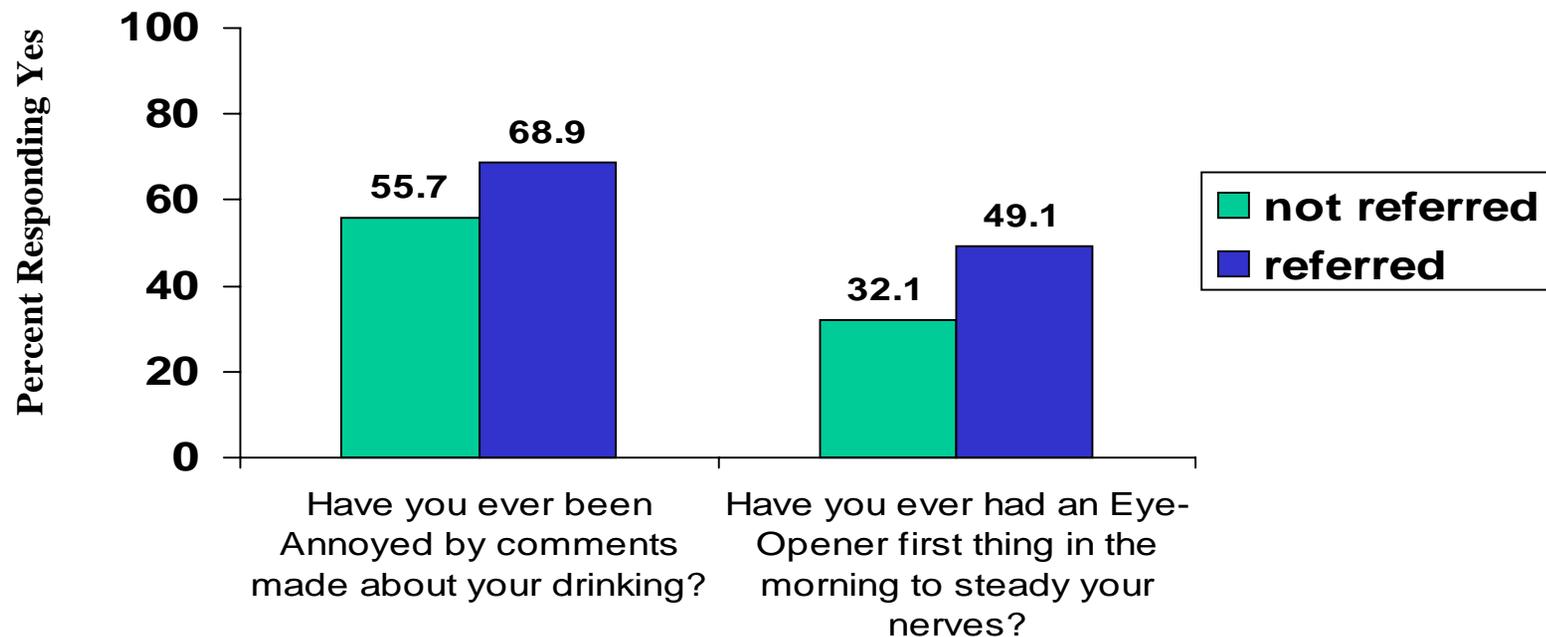
- All items on the scale contributed to soldiers exceeding criteria on the primary screen.
- For those who exceeded criteria on PTSD, 11 items distinguished between those who got any type of referral and those who did not receive a referral.





Analysis: CAGE Alcohol Scale

- All items on the scale contributed to soldiers exceeding criteria on the primary screen
- For those who exceeded criteria on the CAGE, no items distinguished between those who got any type of referral and those who did not receive a referral.
- However, 2 items distinguished between those who got a referral for alcohol and those who did not.

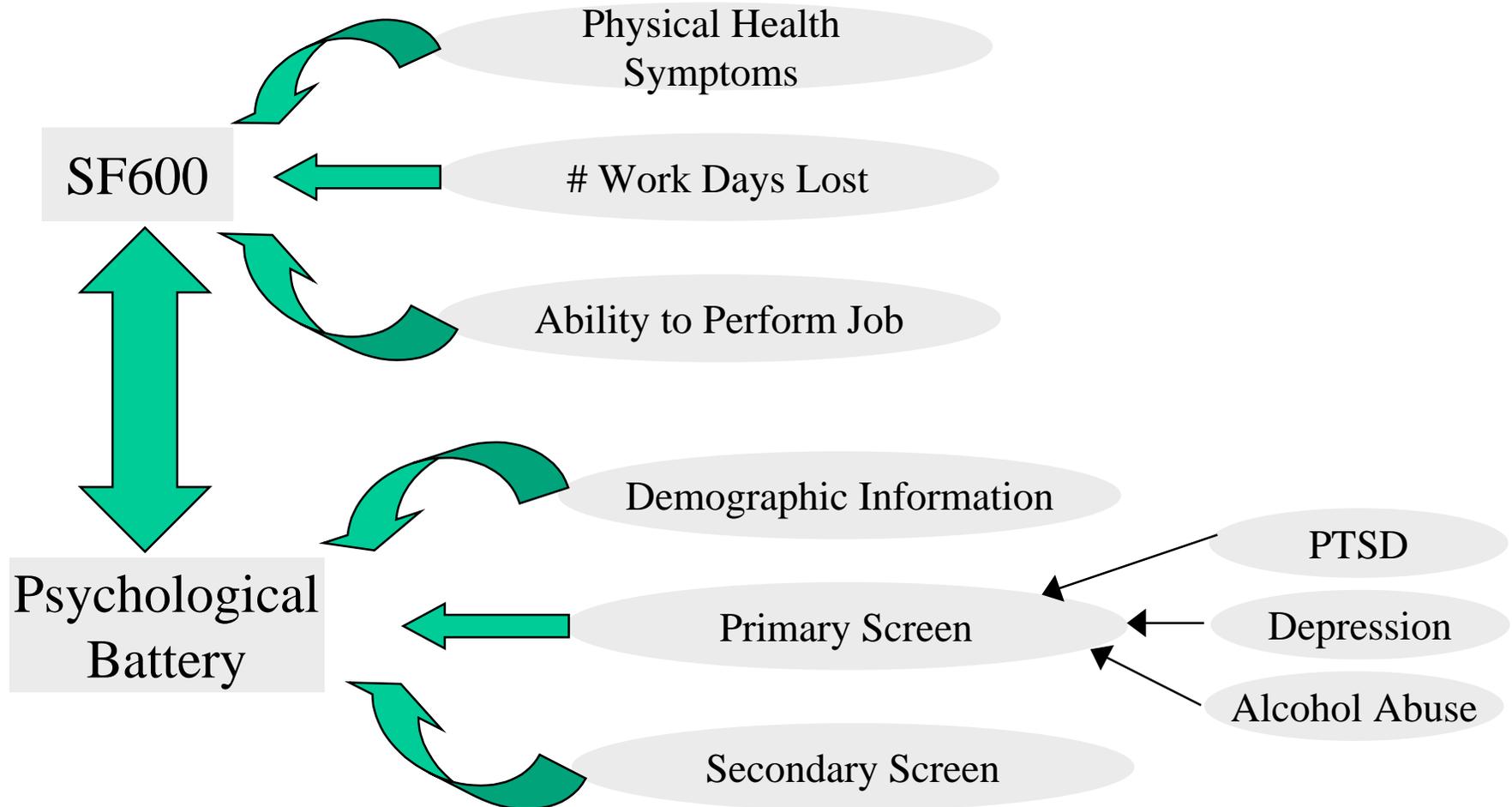


Note: N= 4464

All differences significant at $p < .001$



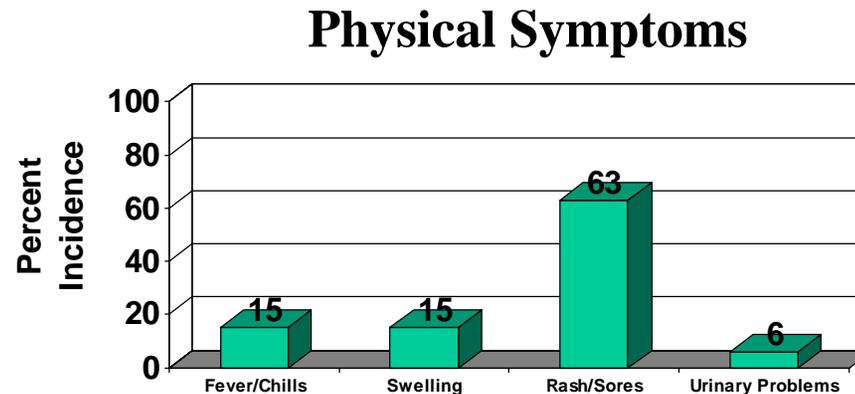
Linking Psychological and Physical Symptoms





Primary Physical Screen: Incident Rates

- The majority of self-reported complaints on the SF600 were related to rashes, skin infections, or sores. The least frequently mentioned were urinary problems.
- 39% of those reporting physical problems on the SF600 reported losing at least 3 days of work during the deployment; 8% reported that they have a condition that has not been evaluated which limits their ability to do their primary military job.



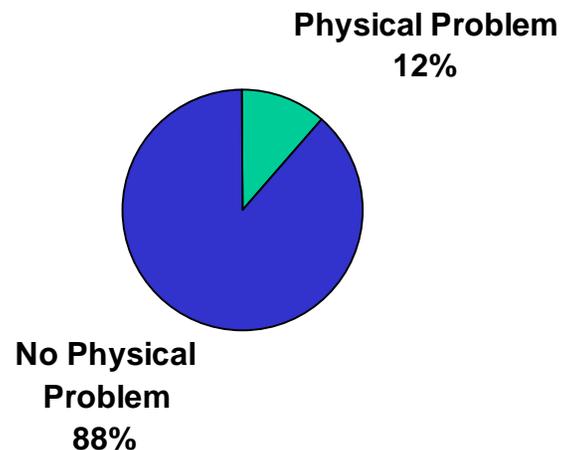
Based on on-site review of 3 days of screening in November 1997 during OJG, N=544.



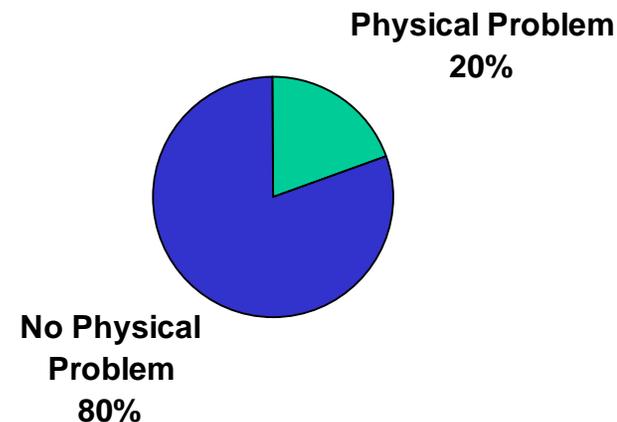
Relationship between Physical and Psychological Screens

- More personnel were identified with problems by the primary psychological screen (n = 85) than the primary physical screen (n = 51).
- Soldiers exceeding criteria on the primary psychology screen are at almost double the risk of reporting physical problems.

Negative on Psychology Screen



Positive on Psychology Screen



Based on on-site review of 3 days of screening in November 1997 during OJG, N=544.



Conclusion

- Overall, the redeploying Bosnia force is psychologically healthy.
- Psychological screening as part of a Joint Medical Surveillance Program is feasible.
- Based on these data, the psychological health of the deployed soldier did not decline until deployed for longer than 5 months.
- The influence of demographic variables on mental health rates needs to be considered when interpreting data from selective time periods.
- Overall, the psychological health of reservists and national guard soldiers is higher.
- Future analyses should include a comparison of unit types (i.e. Combat, Combat Support and Combat Service Support).
- New Directions
 - Refinement of Secondary Screening
 - Decentralization of Screening
 - Garrison Study
 - Lessons Learned



Point of Contact

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OPERATIONAL READINESS PSYCHOLOGICAL BATTERY



Privacy Act Information

ver: 17 DEC 1997
Readiness Survey

- 1) Authority: 10 U.S.C. Sections 133, 136 1071-87, 3012, 5031 & 8012, & 5 U.S.C.. 552A; Executive Order 9397
- 2) Principal Purpose: This form provides information required by the Privacy Act of 1974. Personal information will facilitate & document your health care. Social Security Number (SSN) is required to identify & retrieve health records.
- 3) Disclosure: For military personnel, requested information is required due to need to document all active duty medical incidents in view of future rights & benefits. If requested information is not provided, comprehensive health care may not be possible, but CARE WILL NOT BE DENIED. Your signature merely acknowledges that you have been advised of the foregoing.

Social Security Number

Date

Signature

ALL ANSWERS ARE STRICTLY CONFIDENTIAL!
- USE A #2 PENCIL.

SEND COMPLETED FORMS TO:
COMMANDER
ATTN: MEDICAL RESEARCH UNIT
CMR 442
APO AE 09042-1030

- SHOW YOUR ANSWER BY FILLING IN THE BUBBLE LIKE THIS:

Social Security Number :

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1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

COMPONENT:

ARMY
 NAVY
 AIR FORCE
 MARINES

STATUS:

ACTIVE
 RESERVES
 GUARD
 DoD Civilian
 Other?

DATE OF BIRTH:

MONTH	DAY	YEAR
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<input type="radio"/> MAR	2 <input type="radio"/> 2 <input type="radio"/>	2 <input type="radio"/> 2 <input type="radio"/>
<input type="radio"/> APR	3 <input type="radio"/> 3 <input type="radio"/>	3 <input type="radio"/> 3 <input type="radio"/>
<input type="radio"/> MAY	4 <input type="radio"/> 4 <input type="radio"/>	4 <input type="radio"/> 4 <input type="radio"/>
<input type="radio"/> JUN	5 <input type="radio"/> 5 <input type="radio"/>	5 <input type="radio"/> 5 <input type="radio"/>
<input type="radio"/> JUL	6 <input type="radio"/> 6 <input type="radio"/>	6 <input type="radio"/> 6 <input type="radio"/>
<input type="radio"/> AUG	7 <input type="radio"/> 7 <input type="radio"/>	7 <input type="radio"/> 7 <input type="radio"/>
<input type="radio"/> SEP	8 <input type="radio"/> 8 <input type="radio"/>	8 <input type="radio"/> 8 <input type="radio"/>
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<input type="radio"/> NOV		
<input type="radio"/> DEC		

GENDER: Female Male

RACE:

African-Amer. Asian-Amer.
 Hispanic-Amer. Other
 White

MARITAL STATUS:

Single (never married)
 Married
 Divorced
 Separated
 Widowed

RANK:

E 1
 O 2
 W 3
 4
 5
 6
 7
 8
 9

EDUCATION:

Some High School
 High School
 GED
 Some College
 College Degree
 Graduate Degree

TODAY' S DATE:

MONTH	DAY	YEAR
<input type="radio"/> JAN	0 <input type="radio"/> 0 <input type="radio"/>	9 <input checked="" type="radio"/> 7 <input type="radio"/>
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<input type="radio"/> SEP	8 <input type="radio"/> 8 <input type="radio"/>	
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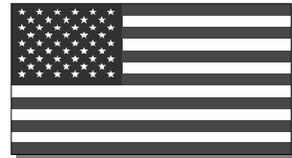
YOUR UNIT:

_____/_____
 Company/Battalion

PREVIOUS DEPLOYMENTS

Did you deploy for:	YES	NO
Bosnia Theater	<input type="radio"/>	<input type="radio"/>
Persian Gulf (Desert Shield/Storm)	<input type="radio"/>	<input type="radio"/>
Somalia (Restore Hope)	<input type="radio"/>	<input type="radio"/>
Haiti (Restore Democracy)	<input type="radio"/>	<input type="radio"/>
Other - specify _____	<input type="radio"/>	<input type="radio"/>

What is your
MOS/Job?



THE FOLLOWING QUESTIONS RELATE TO EXTREMELY STRESSFUL EXPERIENCES YOU MAY HAVE HAD IN THE PAST
 (e.g., life threatening experience of any kind, witnessing something horrible, physical assault)

HOW OFTEN (IF AT ALL) HAVE YOU EXPERIENCED THE FOLLOWING IN THE PAST MONTH:

1. Had upsetting memories of the stressful event(s)
2. Had upsetting dreams of the stressful event(s)
3. Suddenly felt like I was going through the stressful event(s) all over again
4. Felt upset because something reminded me of the stressful event(s)
5. Tried not to think or have feelings about the stressful event(s)
6. Tried to avoid activities or situations that reminded me of the stressful event(s)
7. Couldn't remember certain things about the stressful event(s)
8. Had a physical reaction (such as hands sweating, heart pounding, dizziness) when something reminded me of the stressful event(s)
9. Wasn't as interested in things that used to be important to me
10. Felt distant from other people
11. Didn't feel things as intensely as I used to
12. Felt hopeless about the future
13. Had difficulty falling or staying asleep
14. Felt annoyed or angry
15. Had difficulty concentrating
16. Felt more alert and keyed up than usual
17. Got suddenly scared or startled

	NOT AT ALL	RARELY	SOMETIMES	OFTEN	VERY OFTEN
1.	<input type="radio"/>				
2.	<input type="radio"/>				
3.	<input type="radio"/>				
4.	<input type="radio"/>				
5.	<input type="radio"/>				
6.	<input type="radio"/>				
7.	<input type="radio"/>				
8.	<input type="radio"/>				
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13.	<input type="radio"/>				
14.	<input type="radio"/>				
15.	<input type="radio"/>				
16.	<input type="radio"/>				
17.	<input type="radio"/>				

Below are statements people have used to describe themselves. Read each statement and fill the appropriate circle to show how you feel right now (at this moment):

1. I feel down-hearted and blue.
2. Morning is when I feel the best.
3. I have crying spells or feel like it.
4. I have trouble sleeping at night.
5. I eat as much as I used to.
6. I still enjoy sex
7. I noticed that I am losing weight.
8. I have trouble with constipation.
9. My heart beats faster than usual.
10. I get tired for no reason.
11. My mind is as clear as it used to be.
12. I find it easy to do the things I used to.
13. I am restless and can't keep still.
14. I feel hopeful about the future.
15. I am more irritable than usual.
16. I find it easy to make decisions.
17. I feel that I am useful and needed.
18. My life is pretty full.
19. I feel that others would be better off if I were dead.
20. I still enjoy the things I used to do.

	NONE OR A LITTLE OF THE TIME	SOME OF THE TIME	GOOD PART OF THE TIME	MOST OR ALL OF THE TIME
1.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please respond to the following questions

YES NO

1. Have you ever attempted to Cut back on alcohol? YES NO
2. Have you ever been Annoyed by comments made about your drinking? YES NO
3. Have you ever felt Guilty about drinking? YES NO
4. Have you ever had an Eye-opener first thing in the morning to steady your nerves? YES NO

