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Title

The Robert E. Mitchell Center for Prisoner of War Studies: the Product of One Flight Surgeon's Promise to Honor a Grateful Nation's Warriors.

Abstract

This historical note outlines the development of the Robert E. Mitchell Center (REMC) for Prisoner of War (POW) Studies and summarizes the pivotal role CAPT Mitchell, MC, USN played in its establishment. His singular vision and sheer audacity enabled the center to provide an unbroken 41 years of dedicated service to those who suffered as a POW. CAPT Mitchell's dedication is the reason that today the REMC for POW studies stands as the only program which continued its care of U.S. repatriated prisoners of war (RPWs) well beyond the expiration of the original 1973-1978 charter. Without CAPT Mitchell's unwavering dedication the many lessons learned would not be possible. Today the REMC is recognized for its subject matter expertise.

Introduction

There are people who make a difference, and people that make the difference. CAPT Robert E. Mitchell's 44 years of service to Aerospace Medicine is especially evident in his unwavering dedication to the Vietnam, U.S. repatriated prisoners of war (RPWs). Today the Robert E. Mitchell Center (REMC) for Prisoner of War (POW) studies stands as the only Department of Defense (DOD) sanctioned facility supported to conduct annual medical evaluations for our RPWs. This article is a tribute to the 41 years of lessons learned from caring for these individuals; and, to CAPT Mitchell's undying dedication and pivotal role in the establishment of the REMC for POW studies.

The center today

The REMC is a special program of the Navy Medicine Operational Training Command (NMOTC) in Pensacola, Florida. The REMC provides follow up evaluations of RPWs from Vietnam, Desert Storm, and Operation Iraqi Freedom to study the long-term, mental and physical effects of captivity, and to address the findings' applicability to current military operations. A unique institution, it singularly holds the longitudinal database of the long-term effects of captivity and torture experiences currently in existence for American former POWs. Furthermore, there is also a one-to-one match of a Comparison Group to the Navy RPWs (n=138) in the cohort who have also been followed for nearly 40 years.

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14. ABSTRACT
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Birth of the center

Prior to initiating the program involving Vietnam repatriated prisoners of war, there was no American, long-term, holistic study of an entire cohort of repatriates whose data could provide evidence to forecast the long-term impact of disease or psychological problems in such a group. Although examinations were conducted on former POWs from past wars, these were one-time examinations with no follow-up.[1] Furthermore, systematic historical and/or scientific record keeping was lacking. The reasons for the lack of these repatriation reports following World War II are unknown.[1] Speculations include the examination reports following these earlier wars may not have been done; or the records may have been destroyed; or they may have been filed away and the locations forgotten.[1] It has also been noted that the large number of prisoners being repatriated prior to the Vietnam War, the wide geographical distribution of the prisoners following WWII, and the confusion which existed at the end of them may have all contributed to the lack of available records.[1] As a result, there was little information available regarding the subtle, long-term holistic effects on various systems of the body.

When Operation Homecoming was in its planning stages (circa 1971-1972), in expectation of the repatriation of the Vietnam POWs, it was recognized, for the reasons described above, there was a lack of extensive longitudinal data from direct clinical examinations of repatriates in a scientific setting to predict the outcomes of these returning repatriates. This realization prompted the DOD to follow the Vietnam RPWs and plan for the Center for Prisoner of War Studies (CPOW) at Point Loma, California in 1971.[1] The DOD funded a five-year charter for all the services to evaluate the effect of captivity among the repatriated POWs. To plan the program, a group of Army, Navy, and Air Force specialists met in San Diego during the summer of 1972, and designed questionnaires and examination procedures which would be uniform for the three services when the men were released from captivity. Furthermore, the pivotal role of the aerospace medicine community in the return of the Vietnam POWs included many other significant contributions. Of great concern during Operation Homecoming was the availability of physicians for flying with the air evacuation missions from Hanoi to Saigon to the Philippines and then from the Philippines to the U.S.[2,3] This concern was addressed by the physician Residents in Aerospace Medicine (RAMS) which underwent temporary duty to Clark Air Base exclusively for air evacuation duty.[2,3] Since the majority of U.S. POWs were aviators and aircrew, the immediate rapport of the flight surgeon was critical.[3]

The CPOW in San Diego conducted the marriage and family research on repatriates' families. The medical evaluations for each service were conducted at separate facilities. The medical evaluations for Air Force repatriates were conducted at Brooks Air Force Base in San Antonio while the Army repatriates were evaluated at Brooke Army Medical Center at Fort Sam Houston, San Antonio. At the time of repatriation, the Naval Aerospace Medical Institute (NAMI) had over thirty-five years of experience with a similar group, "The Thousand Aviators" study. This program gave the Navy its first look at personal attributes of successful student aviators .[1] Since the majority of men were aviation personnel, the most logical place to conduct both the medical evaluations and research component for the Navy and Marine Corps repatriates was at NAMI in Pensacola, Florida.

In 1978, the CPOW Charter ended and all services were required to archive and discontinue their studies. "Doc Mitchell," well respected by the RPWs, known for his classic house calls to area RPWs and telephone consultations to those geographically distant, refused to discontinue care to the Navy and Marine Corps RPWs. CAPT Mitchell became the cornerstone of the program. Having been integral to the "Thousand Aviator Study," involved in the planning of the CPOW, and involved in the repatriated POW evaluations until 1990, CAPT Mitchell's vision and singular effort is the reason that today the REMC for POW studies stands as the only program which continued its care of RPWs well beyond the expiration of the original five-year charter.

As a result of CAPT Mitchell's dedication to the long-term physical and psychological effects related to the POW experience, the REMC expertise was recognized throughout the DOD. When Operation Desert Storm occurred (1990-1991), and service members were captured and later repatriated, these RPWs were invited to the REMC and added to the group. Later in the mid-1990's, the Air Force and Army authorized their former Vietnam repatriated POWs to rejoin the group. In 2003, Operation Iraqi Freedom repatriated POWs were added to the group as well as hostages and detainees from Bosnia and Somalia, and program funding was added.

In 1998, Building 3933, which stands adjacent to NAMI, and located at the Naval Air Station in Pensacola, Florida, was dedicated as the Robert E. Mitchell Center for Prisoner of War Studies. In this building the REMC continues its care of repatriates from all conflicts and is a special program of the Navy Medicine Operational Training Center (NMOTC).

The population in the studies

Repatriates from all services and recent U.S. conflicts (Vietnam, Gulf War, Somalia, Bosnia, and Iraq) are in this program, see Table 1. Participants travel from all over the United States and different parts of the world to receive annual medical evaluations. To date, the Vietnam-era participants are the largest and longest held repatriated prisoners of war group in this retrospective study. As such, the majority of published, peer-reviewed and publically disseminated research generated at the center and/or which the center has supported has focused on analysis of the data from the Vietnam RPWs. This approach allowed for researchers to ensure uniformity in measurement technique, war specific stressors, and to preserve anonymity of individuals studied in this cohort.

RPWs in subsequent conflicts were few in number (e.g., 23 Desert Storm, 10 Iraqi Freedom) and are usually not included in research to protect their identity; and furthermore, there are too few to generate enough statistical power to determine statistical significant differences for any research question. Regardless of the size of the cohort, the smaller cohort of RPWs have brought with them continued lessons learned regarding the impact of the POW experience on the psychological and physical health of the individual.

With regard to the Vietnam RPWs, 662 military service personnel survived captivity in Vietnam and were repatriated. Of these, 566 men were repatriated in the spring of 1973, as part of Operation Homecoming (OH), and 94 were repatriated early (1962 -1972) after escaping or accepting early release; 88% of these repatriates were officers. Since 1973, these repatriates have been eligible for annual voluntary medical and psychological follow-up within programs

provided by the Department of Defense and most have participated. As of July 2014, there have been 154 deaths in the RPW cohort, and 31 deaths in the 138 Navy Comparison Group cohort.

The examination protocol

When the tri-services medical specialists met in San Diego during the summer of 1972, they designed what was eventually called "The Initial Medical Evaluation Form" (IMEF). This was a 29-section-477-page document which was used to document the initial examinations done as the first step of the repatriation at the Clark Air Force Base in the Philippines in 1973.

These forms encompassed pre-casualty information, the captivity medical history, elements of the physical examination, specialty consultations, and the results of the technical studies. In the period between the planning sessions and the repatriation of the men, all medical records on all Navy and Marine Corps personnel who were presumed to be prisoners of war were retrieved from the Navy Bureau of Medicine and Surgery so they would be available to the physicians filling out the IMEF on them. The IMEF included instructions for conducting a number of medical and psychological examinations and method of documentation. These examinations and debriefings were conducted over several weeks by a team of physicians and mental health specialists. Most of the repatriates have voluntarily been routinely medically and psychiatrically evaluated since 1973 to date. The latter evaluations were conducted by a psychiatrist or clinical psychologist using the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*) criterion available for diagnosis at time of evaluation (i.e. DSM-II, -III,-IV).

The interviews, tests, and consultations administered to the repatriates are in Table 2. When the Center for Prisoner of War studies was established in San Diego in 1972, one of the specific goals of its charter was the determination of the unique factors which characterize the health and adjustment of families of prisoners of war and the families of those killed in action or missing in action. That phase of the repatriate follow-up program was continued by the Center during the early years of the studies by means of an annual extensive standardized questionnaire and structured assessment of psycho-social factors affecting the families of the repatriates and the controls. At the time of the annual psychiatry/psychology interview, a determination was made as to the man's family situation. If it appeared there was a specific problem, he was either offered counseling by the psychologist or referred to a family services specialist at Naval Hospital.

Some of the medical examination has remained the same over the years; for example, electrocardiograms, pulmonary function studies, and audiograms, see Table 2. However, many aspects of the original testing have since been discontinued either due to decreased funding, medical tests no longer in existence, or medical tests found unnecessary.

Psychological testing

Extensive psychological testing was conducted at repatriation in 1973. During annual follow-up, however, standard examination included an update on clinical history and an updated interview along with examination of any recurrent or new symptoms. Psychiatry follow-ups, however, were concluded in 1990. In 1993, the Vietnam repatriates were given extensive psychological

testing in order to update their medical record. This testing consisted of intelligence testing, personality testing (i.e. Multi-phasic personality testing), and neuropsychological testing.

Starting in 2010, the Office of Naval Research and the Bureau of Medicine and Surgery Clinical Naval Investigation Program provided grant funding to sponsor the center in examining optimism and resilience among the repatriates. During this time, researchers examined risk and protective factors for predicting resilience. Resilience was defined as an individual who had never received any psychiatric diagnosis over the 37-year follow-up period. Despite exploring the hundreds of demographic, psychological and physical variables available in the RPW database, the statistical model which yielded the strongest association with resilience was an explanatory personality style, optimism-pessimism. Researchers examined the set of Minnesota Multiphasic Personality Inventory (MMPI) scales collected a couple of years after the repatriates had been returned (circa 1975) to generate a measure of optimism-pessimism. Because no item-level data was available from the MMPI, only the summary results, researchers employed a regression equation developed by Malinchoc, Offord, and Colligan[5] to derive this variable.[4] These optimism scores were used to predict long-term resilience.

The above study generated many more inquiries regarding the role of optimism and the concept of resilience among the Vietnam RPWs. Consequently, the Office of Naval Research and the Bureau of Medicine and Surgery Clinical Naval Investigation Program sponsored a second study to further explore the concept of resilience. This second study was unique in its incorporation of prospective variables. Although researchers utilized the longitudinal data set to examine the Vietnam-era RPWs which, at the time, had been followed for nearly 40 years, the study also collected non-routine, but scientifically reviewed and approved, additional physical and psychological data from 128 Vietnam RPW's who presented for annual medical follow-up between March 2011 and February 2012, a prospective study.[4] The study therefore consisted of assessment of four different time points: 1973, 1975, and 2010 and data from the RPWs that presented at the center between the March 2011 and February 2012 timeframe. A total of nine physical and nine psychological variables were examined in an effort to expand the definition of resilience. Positive health was measured using a physical and a psychological composite score for each individual, based on the total 18 variables.[6] Linear regressions were employed to determine which variables contributed most to health ratings. Physical and psychological health correlated with optimism obtained from the MMPI data collected nearly four decades ago, see Table 3.[7]

The data documentation

Much of the medical and psychological history is stored in a secure database repository which, with their permission, can be used for research purposes. Although the REMC does receive DOD support to conduct the annual medical evaluations, it does not, however, routinely receive DOD support for conducting scientific research.

The findings

To date the REMC data on repatriate health has supported high-quality research benefiting the following four groups: the current cohort of repatriated POWs, future groups of POWs, other

military personnel, particularly those who suffer the trauma of war, and the larger population, especially those who suffer from severe trauma. The high quality research conducted at the Center has produced a better understanding of the following eight categories (see Table 4 for a list of citations).

1. Mental health/psychology
    a. General
    b. Anxiety and depression
    c. PTSD
    d. Alcoholism
    e. MMPI
    f. Morbidity
    g. Stress
    h. Coping strategies
2. Methods of survival
    a. General
    b. Code of conduct
3. Physical health
    a. Today, former POWs are entitled to a presumption of service-connection for eight diseases, regardless of the length of captivity, if manifested to a degree of 10 percent or more after discharge or release from active military, naval, or air service. These diseases are:
        i. Psychosis
        ii. Dysthymic disorder or depressive neurosis
        iii. Post-traumatic osteoarthritis
        iv. Any of the anxiety states
        v. Cold injury
        vi. Stroke and complications
        vii. Heart disease and complications
        viii. Osteoporosis
    b. If a former POW was interned for 30 days or more, the following additional diseases are presumed to be service-connected:
        i. Avitaminosis
        ii. Chronic dystentery
        iii. Helminthiasis
        iv. Malnutrition
        v. Any other nutritional deficienty
        vi. Peptic ulcer disease
        vii. Beriberi
        viii. Cirrhosis of the liver
        ix. Irritable bowel syndrome
        x. Pellagra and any other nutritional deficiency
        xi. Peripheral neuropathy, except where directly related to infection causes
        xii. Osteoporosis
4. Policy, politics, and motives
    a. General

    b. Geneva convention
5. POW/MIA
    a. Chain of command
    b. Accounting of POWs
6. Torture
    a. Medical effects
    b. Recovery
    c. Treatment
    d. Methods
    e. Political
    f. Medical and psychological effects
7. Diet and nutrition
8. Family health
        a. Physical
        b. Psychological
9. Aging
        a. Optimal aging

Dispositional optimism identified in the resilient RPWs

Several explorations of the data yielded the strongest association with resilience was the personality trait, optimism.[4] In fact, optimism was a stronger predictor of resilience than experience type assessed through prolonged captivity, severe torture, and malnourishment across an extended period of time. So, it is the type of person rather than the type of experience which determines how one handles a traumatic/catastrophic experience. And thus, while there is considerable concern about the incidence of war-related post-traumatic stress disorder (PTSD) in military personnel with substantial research now asking how to diagnose and treat PTSD; at the REMC, researchers have turned the question on its head by asking, who does NOT suffer ill effects of awful experiences? With over 40 years of longitudinal research collected from repatriated prisoners of war, it is the only center in possession of this unique data that is expertly qualified to answer such questions.

That optimists fare better than pessimists is certainly not news. What is news is that this is the case even in the most horrific of circumstances, whether you are an optimist or pessimist matters a great deal. Optimists are healthier, more productive, creative, and are generally happier.[7] Research with civilian samples shows optimists not only display superior adaptation to stressors, but optimism is also protective in that individuals are less likely to succumb to medical illnesses.[8] In our study, we show it is optimists who fare best when confronted with war's ugliest atrocities.

REMC research recommends pre-deployment optimism training

Most promising is optimism is learnable. Optimism is driven by patterns of thoughts, and such patterns can be just as easily learned as unlearned. This is the crux behind cognitive behavioral techniques used to assist individuals reshape their way of interpreting events.[8] Helping pessimists become optimists entails changing their way of thinking involving: personalization

(thoughts are changed from "it's all my fault" to less personable ones), permanence (thoughts are changed from "it's going to last forever" to it's temporary), and pervasiveness (thoughts are changed from 'it's going to ruin the rest of my life' to 'this event is specific to this area of my life'). Replacing the former thoughts allows an individual to better cope and use strategies effective for coping with emotional distress. [9]

An additional key finding is optimism dwarfed the predictive strength of solitary confinement, the only torture variable associated with resilience. There was not a significant optimism and solitary confinement interaction. Regardless of solitary confinement length (short, 2 weeks; medium, 13 weeks, or long, 81 weeks) our study found no interaction between solitary confinement and optimism. Rather, results indicate it is not the severity or duration of the torture which determined an individual's resilience, but the type of person, specifically, the optimistic one who fared best. The dosage effect which is the idea that type, duration, and intensity of exposure influence healthy adjustment is not supported in our research. [10]

REMC research recommends pre and post deployment PTSD screening

The studies at the REMC highlight factors which make some individuals more vulnerable to combat trauma and captivity. The military may be interested in taking special precautions for optimizing pre and post deployment screening procedures. Our findings highlight the importance of early PTSD screening as the passage of time does not always mend wounds; instead, if an individual goes without help, symptoms can worsen.

Conclusion

The science behind the benefits of optimism and the training of it are already being utilized by the US Army. The current study confirms the importance of optimism training for our military service members. It supports the significance of the Army's current Comprehensive Soldier Fitness Training, the resilience program, based on optimism for coping with emotional distress.[11,12]

We cannot control the trauma our active duty may encounter. We can, however, control how we prepare them. Aside from preparation to endure physical stress, we can prepare them mentally by providing them with the psychological tools needed to endure emotional distress. It is true, without such training, pessimistic active duty men and women may still lead normal lives, albeit confronted with greater chances of succumbing and not recovering from illness, potential for less productivity and lower well-being. During ordinary times they will manage, but during times of crisis, such individuals will pay an unnecessary price.[9] We owe it to our military service members to prepare them fully to face those hard times and flourish. To send them off to war without all the necessary coping skills is a disservice to the men and women who risk their lives during ordinary and extraordinary times.

The Vietnam RPWs were the longest held group of Americans to ever be taken prisoners. They are an extraordinary example of the power of the human being to survive and even thrive in the face of trauma. The lessons learned from these heroes can be used to better train and screen military service members of this generation. None of these lessons would have been possible

without CAPT Mitchell's unwavering dedication. His singular vision and sheer audacity enabled an unbroken 41 years of dedicated service to those who suffered as a POW.

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Table 1.[+] U.S. POWs/Hostages, World War 1 (1917-1918) through the Iraq War (2003-Present)

	Total	WWI 1917-1918	WWII 1941-1945	Korea 1950-1953	Vietnam 1961-1973	Desert Storm 1991[*]	Somali 1992-1994	Bosnia 1995-	Kosovo 1999-	Afghanistan 2001-	Iraqi Freedom 2003-
Captured & Interned	**142,233**	**4,120**	**130,201**	**7,140**	**725**	**22**	**1**	**0**	**3**	**1[**]**	**10[***]**
Returned to U.S. military control	**125,215**	**3,973**	**116,129**	**4,418**	**661**	**21**	**1**	**0**	**3**	**1[**]**	**8[***]**
Refused Repatriation	**21**	**0**	**0**	**21**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Died while POW	**16,987**	**147**	**14,072**	**2,701**	**64**	**1**	**0**	**0**	**0**	**0**	**2[***]**
Still officially held by enemy forces	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

[+] Original table reported by, CA Henning. *POWs and MIAs: Status and Accounting Issues*, June 1, 2006; pg. CRS-2, Congressional Research Service, Library of Congress Code RL33452. This table is an updated version produced by the Robert E. Mitchell Center for POW Studies.

[*] POW data for Desert Storm verified with Col (ret) David W. Eberly USAF, senior ranking POW (personal communication, June 30, 2014) .

[**] Individual released May 31, 2014, and status as a POW currently undetermined while under investigation, as of June 30, 2014.

[***] Verified through Wikipedia search of 507th Maintenance Company & Iraqi Freedom POWs

Table 2. Medical evaluation tests used for the Vietnam repatriated prisoners of war

Tests		Evaluation Period		
		1974	1975-1990	Present
Laboratory determinations				
	Hematology	X	X	X
	Total eosinophile counts	X		X
	Urinanalysis	X	X	X
	SMAC (18 or 24)	X	X	X
	Glucose intolerance test	1974-1979 then only as indicated		N/A
	Stool studies			
	Ova and parasites	X		N/A
	Occult blood		X	N/A
	Total lipids (electrophoresis)		1977	X
	Total proteins (electrophoresis)	X		X
	Immunoglobulins	X		N/A
	Southeast Asia Screen (malaria, etc.)	X		N/A
X-Rays				
	Cardiac series	X		N/A
	PA, lateral chest		X	X
	Flat plate abdomen	X		N/A
	Hands	X		N/A
Electrocardigrams				
	Routine fasting	X	X	X
	Treadmill stress (Bruce protocol)	X	X	N/A
Vectorcardiograms		X	X	N/A
Ballistocardiograms		1974-1977		N/A

Pulmonary function studies		X	X	X
Audiograms		X	X	X
Vestibular and special visual studies		X		N/A
Tests		Evaluation Period		
Psychological Testing		1974	1975-1990	Present
Interviews	Personal and medical histories	X	X	X
	Psychiatry	X	X	
Specialist consultations		1974	1975-1990	Present
	Ear, nose, throat	(all)		
	Ophtalmology	(all)		
	Orthopedics	(as necessary)		
	Urology	(as necessary)		
	Radiolgy	(as necessary)		
	Radionueclide studies	(upper gastrointestinal, gall bladder, etc.)		
	Family services interview	(all 1974-1986)		

Table 3. Eighteen variables (9 physical, 9 psychological) to compose a health rating

Health Ratings	
Physical	**Psychological**
Allostatic Load [a]	Life Satisfaction
FEV1 [b]	Quality of Life
Dominant Hand-Grip Strength	Positive/Negative Affect Ratio
10-Meter Timed Walking Speed	Autonomy
CIRS [c]	Environmental Mastery
SF12 [d]	Personal Growth
Telomeres [e]	Positive Relationships
Sleep Efficiency [f]	Purpose in Life
Family Physical Disease Burden [g]	Self-Acceptance

a Total percent of metabolic items in pathological range (e.g., blood pressure, waist-hip ratio, cholesterol, cortisol, norepinephrine, DHEA)

b Pulmonary function testing (FEV1 – expiratory flow volume in one second)

c Cumulative Illness Rating – a physician rating

d Health & Well Being Self Rating (proprietary survey of 12 questions)

e Chromosome ends of repetitive nucleotide sequences which shorten with chronological age and life stressors can impact them

f Self rating

g Family, self-assessed, medical history survey (immediate, siblings, parents)

Table 4. Vietnam repatriated prisoners of war research citations

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