The Impact of Attachment Style on Posttraumatic Stress Disorder Symptoms in Postdeployed Military Members

LTC Sandra M. Escolas, MS, USA
Rachel Arata-Maiers
1LT Erika J. Hildebrandt, MS, USA
Alan J. Maiers, PsyD
Shawn T. Mason, PhD
Maj Monty T. Baker, MSC, USAF

ABSTRACT

This study examined the effects of attachment style on self-reported posttraumatic stress disorder (PTSD) symptoms in a population of service members (N=561). Active duty, postdeployment service members completed anonymous questionnaires including 2 measures of adult attachment and the PTSD checklist–military as a measure of PTSD symptoms. Results confirmed the central hypothesis that attachment style was related to reported PTSD symptoms. Secure attachment style was associated with less reported PTSD symptoms and therefore may be involved in mechanisms associated with protection from developing PTSD after experiencing wartime trauma. Results were consistent when tested across continuous and dichotomous assessments that captured diagnostic criteria. This study demonstrates a significant relationship between attachment style and PTSD symptoms within a military population, potentially providing the basis for future research in this area.

Throughout history there have been psychological effects on Soldiers and their Families during combat deployment.[1] Posttraumatic stress disorder (PTSD) is an anxiety disorder that may occur following an emotionally terrifying, life-threatening event or events that create psychological trauma. Events associated with onset of PTSD include, but are not limited to:

> military combat, violent personal assault (ie, sexual assault, robbery, mugging), being kidnapped or taken hostage, terrorist attack, torture, incarceration as a prisoner of war or in a concentration camp, natural or manmade disasters, and automobile accidents.[2]

It is estimated that 5% to 24% incidence of PTSD for the over 2 million American troops deployed to Iraq and Afghanistan occurred from September 2001 until October 2009.[3] Primary characteristics of PTSD are debilitating fear and helplessness.[4] As such, severe PTSD symptoms can be detrimental to the overall life and functioning of the individual, with consequences at the biological, psychological, and social levels. The social implications of PTSD directly relate to attachment theory and the disruption of ways we relate with others in our social support system.[5] Attachment theory provides a framework for understanding and addressing the central problems of PTSD that affect psychosocial functioning: emotion or affect regulation, interpersonal skills, and social support behaviors.[6,7]

ATTACHMENT THEORY AND ATTACHMENT PATTERNS/STYLES

Adult attachment is an extension of the early attachment relationship between the infant and caregiver.[8] This relationship sets the foundation for all future attachment relationships and the "internal working model" of self and of others. The theory concentrates on secure attachments between infants and their caregivers as related to the development of social and emotional stability. Moreover, the ideal of secure attachment "assumes that successful navigation through the universal stages of attachment normatively provides children with a secure emotional attachment base, a base from which children competently lead the rest of their relational lives."[9]

Child attachment theory was developed in the 1970s by Mary Ainsworth,[10] who established 3 different attachment styles in children: type B or secure, type A or avoidant, and type C or ambivalent/resistant. A fourth category identified by Main and Solomon[11] was labeled as disoriented or disorganized attachment, or type A/C.[8] The field was further developed by Bowlby[8] who asserted the first attachment relationship between the infant and caregiver (usually the mother) sets the stage for all future attachment relationships. In their studies of romantic love, Hazan and Shaver[13] developed a 3-category theory of adult attachment based on Ainsworth's original 3 infant-parent styles. Their styles were labeled secure, avoidant, and ambivalent. As with the child literature, a fourth

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adult attachment category was added by Bartholomew.[13] Bartholomew's styles are secure, preoccupied, fearful, and dismissing. Conceptually, the secure and preoccupied styles are similar to Hazan and Shaver's[12] secure and ambivalent styles, whereas fearful and dismissing describes 2 different types of avoidant individuals. More recently, the adult attachment literature has expanded to look at adult attachment more succinctly as a composite of relationship anxiety and relationship avoidance.

Attachment style is based on how you feel about yourself and about others. In Bartholomew's styles, secure describes low relationship anxiety and low avoidance, preoccupied indicates high anxiety and low avoidance, fearful depicts high anxiety and high avoidance, and dismissing characterizes low anxiety and high avoidance. Additionally, insecure adults may have anxious-resistant attachment, which means they worry that their partner may not love them completely, and they are emotionally reactive when their attachment needs go unmet. Conversely, avoidant partners appear not to care too much about close relationships; they are not dependent on others and others cannot be dependent on them.[12] The attachment research literature shows that individuals with secure attachment "score higher on personality variables indicative of self-confidence, psychological well-being, and functioning in the social world."[15] Securely attached individuals are also described as "adaptive, capable, trusting and understanding," as well as "able to appraise stressful situations, cope more positively with them, and adjust more flexibly to these experiences."[14]

POSTTRAUMATIC STRESS DISORDER AND SOCIAL BONDS

Interpersonal factors play a large role in the diagnosis, development, maintenance, and recovery from PTSD. From a diagnostic perspective, symptoms of social impairment include various degrees of withdrawal from relationships and social roles. In terms of development, PTSD diagnoses often result from interpersonal trauma, such as rape and abuse, as compared with natural disasters, or even the trauma of combat itself. As such, it appears that PTSD involves a dissembling of the internal structures of trust and attachment that allow us to connect with important others and to function normally in social settings as a result of this breach in social bonds via trauma. Regardless of the kind of traumatic experience, people with PTSD suffer extreme social difficulty due to the impairment to the ability to distinguish between dangerous and normal stimuli.[16] Trauma studies show that the biophysical, psychological, and social functioning of individuals with PTSD is comprised at neurophysiological levels in such a way that limbic systems for self regulating or self-calming are disrupted; rational thinking and action are debilitated; and interpersonal relationships as well as social bonds are often broken. It is important to note that social support processes are at play within these sequelae of PTSD and the severity of symptoms.[17] People with PTSD have difficulty drawing on social support when they need it most.[18] And in turn, resources of social support tend to diminish as people with PTSD are unable to reach out for help.[19] Several studies show that social support is an important factor in adjustment and functioning for Veterans with PTSD.[20,21] While severity and prognosis are varied, the impact on military performance, family, and quality of life has precipitated significant clinical and research interest.

Closely related to social support, particularly through the lens of attachment theory, is the experience of intimate partner relationships. Importantly, intimate partner relationships are also known to be an important factor in overall functioning for Veterans and Soldiers, if not for all families.[22] This area of research provides a particularly informative application of attachment theory in light of attachment styles with adult romantic partners, which is considered by current attachment theory to be an extension of the individual attachment style established with the primary caregiver.[23] Recent research shows that this theory is supported in its application to dyadic, or couple's processes in PTSD outcomes.[24-27] This growing body of research shows that PTSD is associated with insecure attachment styles.[27,28] Additionally, recent studies have shown that marital functioning and couple adjustment is an important aspect for Veterans and Soldiers with PTSD.[24,29] Two recent studies show that marital satisfaction plays an important role in lower symptom severity of Veterans with PTSD.[30,31] This theoretical perspective is beginning to provide insight into the interpersonal factors at work in PTSD outcomes, making this an opportune time to further explore relationships between mechanisms of attachment and PTSD in recent Veterans.[24-26] Posttraumatic stress disorder has recently been increasingly associated with attachment theory due to the interpersonal nature of the disorder.[32]

THE CURRENT STUDY

Data from a cross-sectional study were analyzed to further explore the relationship between attachment styles and PTSD. Of note, this study examined the relationship between PTSD symptoms and 2 different but theoretically and empirically related assessments of human attachment. Regarding the first assessment, our first hypothesis was that PTSD symptoms would be differentially related to each of the categorical attachment measure styles. We expected the higher PTSD scores to be associated with the fearful group and the lower PTSD scores to be associated with the secure group.

It is also hypothesized that relationship anxiety and relationship avoidance would predict reported PTSD scores with low relationship anxiety and low relationship avoidance being related to lower PTSD scores with the opposite being related to higher PTSD scores.

METHODS

Procedure

Data were collected as part of a quantitative, cross-sectional study looking at attachment, temperament, and resilience as protective mechanisms for posttraumatic stress. Data were collected on anonymous questionnaires distributed on Fort Sam Houston and Lackland Air Force Base in San Antonio, Texas, from summer 2010 to summer 2011. In order to participate in this study, the participants must have been deployed for at least 30 days or more, aged 18 years or older, and on active duty. The study was reviewed and received an exempt determination from the Brooke Army Medical Center's Institutional Review Board. For this study, the independent variable was adult attachment (both the categorical attachment measure (RQ) and the continuous measure of adult attachment (see description in Attachment section below), and the dependent variable was PTSD symptoms.

Participants

Among the 561 respondents, 403 were male, 157 female, and one no response; 8% aged 25 years and younger, 23% in the 26 to 30 year age range, 48.5% aged 31 to 40 years, 21% 41 years of age and over; 69% married or living with a partner; 62% Army and 37% Air Force; 54% SGT, SSG, or SFC; 23% LTs to CPTs*; 22% with master's degree or higher, 30% with bachelor's degree, and 44% had some college. The ethnicity of the sample was 12.3% Hispanic and 86.6% non-Hispanic; the racial profile was 65.6% white, 19.6% African American; 5.9% Asian/Pacific Islander, and 8% other. All participants had deployed at least once. Each participant reported personal total career deployment time. resulting in an average of 1.9 years (1 year, 10.8 months), ranging from one month to 14 years.

MEASURES

Attachment

Adult attachment was measured 2 ways: one with the Bartholomew and Horowitz Relationship Questionnaire,[33] a 4-item categorical adult attachment variable; the other with the Fraley et al[34] Experiences in Close Relationships [scales]-Revised, (ECR-R) which creates continuous anxiety and avoidance attachment variables. The conceptual relationship between the categorical measure of adult attachment and the continuous measure is that secure adults are low in relationship anxiety and avoidance; fearful adults are high in relationship avoidance and relationship anxiety; the preoccupied adults are low in relationship avoidance and high in relationship anxiety; whereas dismissing are higher in relationship avoidance and lower in anxiety. Shaver and Fraley[35] further developed the relationship between these 2 self-report measures of adult attachment.

Experiences in Close Relationships-Revised[34] is a measure of adult attachment. This is a 36-item self-report instrument designed to measure attachment-related anxiety and avoidance. Participants are asked to think about their close relationships, without focusing on a specific partner, and rate the extent to which each item accurately describes their feelings in close relationships, using a 7-point scale ranging from "not at all" (1) to "very much" (7). Eighteen items tap attachment anxiety and 18 items tap attachment avoidance. Internal consistency reliability tends to be 0.90 or higher for the 2 ECR-R scales.

The Relationship Questionnaire[33] is a self-report adult attachment measure. The measure includes a series of 4 statements that represent secure, preoccupied, fearful, and dismissing adult attachment styles. Participants are instructed to place a checkmark next to the letter corresponding to the style that best describes themselves. Next they are asked to rate each of the presented relationship styles to indicate how well or poorly each description corresponds to their general relationship style as measured by a Likert-type scale, from "disagree strongly" to "agree strongly." Test-retest reliabilities of the RQ subscales ranged from 0.49 to 0.71 as were reported by Scharfe and Bartholomew.[36] Schmitt and colleagues[9] validated the attachment questionnaire in 62 cultures suggesting that people worldwide fall into one of the 4 attachment patterns, and there are cultural differences that suggest societal norms influence one's resulting attachment pattern.

Posttraumatic Stress Disorder Symptoms

The PTSD checklist–military,[37] commonly known as the PCL-M, is a 17-item self-report inventory that assesses the severity of each DSM-IV†-defined PTSD symptom. Each item corresponds to the DSM-IV diagnostic criteria for PTSD and is scored on a 1 (not at all) to 5 (extremely) scale. Previous research on the PCL-M indicated mean scores of 64.2 (SD=9.1) for PTSD subjects and 29.4 (SD=11.5) for non-PTSD subjects.[37] The

*SGT indicates sergeant; SSG indicates staff sergeant; SFC indicates sergeant first class; LT indicates 1st or 2nd lieutenant, CPT indicates captain.

†*Diagnostic and Statistical Manual of Mental Disorders*, 4th Edition[38]

PCL is widely used in the Department of Defense and the Department of Veterans Affairs and has excellent reliability and validity.[37]

DATA ANALYSIS

The data analysis was conducted using SPSS version 18 (SPSS, Inc., Chicago, IL). An analysis of variance (ANOVA) was used to test the first hypothesis, which examined the relationship between the RQ and the PTSD scores. For further analysis, the PTSD score was dichotomized creating a categorical variable of low and high PTSD. A logistic regression was used to test the second hypothesis, which examines the relationship between the ECR-R and the PTSD scores.

To test the validity of using our current measures in this population, we examined the relationship between the RQ and the ECR-R to determine the conceptual relationship between these instruments. Using this sample, our results were consistent with the literature. Those who selected the secure attachment style also rated themselves as lower avoidance and lower anxiety compared to fearful, preoccupied, and dismissing; fearful rated themselves as higher anxiety and avoidance than secure, preoccupied, dismissing, etc. In a separately published article,[39] we present a more detailed discussion of the relationship between the RQ and ECR-R.

RESULTS

Descriptive Statistics

The RQ is made up of 4 possible attachment styles: secure, fearful, preoccupied, and dismissing. In our sample, 39.3% selected secure, 24% fearful, 7.2% preoccupied, and 29.5% dismissing as their attachment style. The ECR-R creates 2 measures of attachment, relationship anxiety and relationship avoidance. The mean scores on each subscale were 2.79 for anxiety and 2.79 for avoidance with standard deviations of 1.21 and 1.15 respectively. The PTSD Score on the PCL-M ranged from 17 to 76 with a mean of 30.23 (SD=14.40). Higher scores on the PCL-M indicate more reported PTSD symptoms. 13% of our sample scored 50 or over on the PCL-M whereas 33% of our sample scored 32 or higher.

Attachment Style and Posttraumatic Stress Disorder

An ANOVA was conducted using the self-selected attachment style (secure, fearful, preoccupied, or dismissing) as the independent variable and the PTSD score as the dependent variable. Least squared difference was used for the follow-on contrasts. This resulted in a significant ANOVA, $F_{3,501}=18.05$; $P<.001$, and in significant differences between all attachment styles except for the preoccupied and dismissing styles (Figure 1). The means (M) and standard deviations for the PTSD scores on the RQ measures resulted for secure (M=25.57, SD=10.86), fearful (M=37.14, SD=16.28), preoccupied (M=31.83, SD=14.53) and dismissing (M=30.24, SD=14.55).

In our second analysis, we examined diagnostic implications for PTSD. In order to dichotomize PTSD cases, we used a cutoff of 32 on the PCL score which is consistent with a screening threshold for this self-report measure. A score of greater than or equal to 32 is considered to have a higher sensitivity than the 50 or higher cutoff traditionally seen in research.[40] Although there is some debate, researchers recommend using a cutoff score between 30 and 34 when using the PCL.[41]

Chi-square analysis was conducted using the dichotomous PTSD variable of low versus high PTSD severity score. Low PTSD severity scores included scores from 17 to 31, whereas high PTSD severity score category included scores from 32 to 76. Twice as many individuals were classified by having a low PTSD severity score (66.7%) as compared with those classified as having a high PTSD severity score (33.3%). The Chi-square analysis resulted in significant differences ($\chi^2=40.343$, $P=.000$, N=502).

Figure 2 demonstrates that secure attachment produces lower frequencies in the high PTSD severity category and the fearful style produces the greatest frequencies, followed by preoccupied and then dismissing. Conversely, the secure style has the greatest representation in the low PTSD severity category.

We predicted that individuals reporting lower relationship anxiety and avoidance would predict lower levels of PTSD scores. A *t* test relationship anxiety and

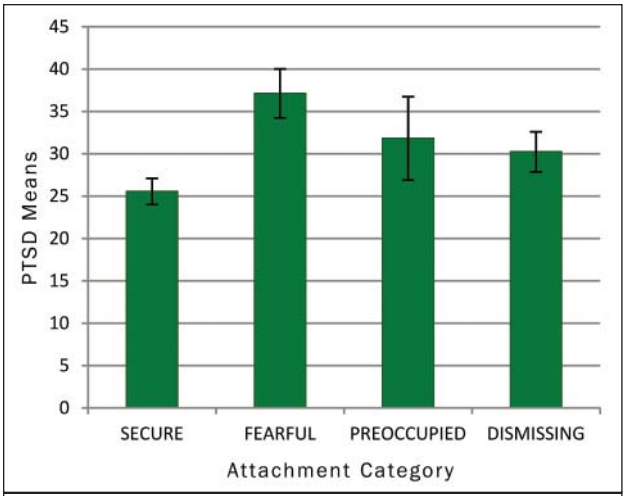

Figure 1. The mean posttraumatic stress disorder scores plotted by attachment style.

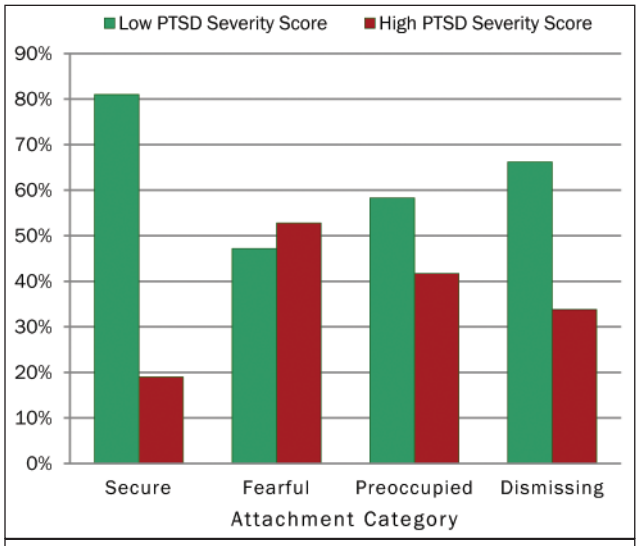

Figure 2. Attachment style plotted by dichotomous posttraumatic stress disorder score.

relationship avoidance based on whether they were in the low or high PTSD severity category. This resulted in a t_{539}=-7.63, P<.001 for relationship anxiety and a t_{538}=-8.79, P<.001 for relationship avoidance. The low PTSD severity score group had a mean of 2.53, SD of 1.10 on relationship anxiety and a mean of 2.50, SD of 1.03 for relationship avoidance, whereas the high PTSD severity group had a mean of 3.33, SD of 1.26 for relationship anxiety and a mean of 3.37, SD of 1.17 for relationship avoidance. Our results, shown in Figure 3, indicate that individuals who self report low levels of PTSD symptoms also report significantly lower levels of relationship anxiety and relationship avoidance than those who self report high levels of PTSD symptoms.

COMMENT

Adult Attachment and Service Members

Descriptive statistics showed that approximately 40% of our population of service members is self-classified as securely attached individuals. The rest are self-classified as one of the insecure attachment styles (ie, fearful, proccupied, dismissing). Research outcomes supported our hypotheses that securely attached individuals report far fewer incidences of PTSD outcomes on both categorical and continuous measures of attachment. More severe symptoms were associated with less functional attachment styles, and less severe with more functional styles. These findings were strengthened by the consistency across the two different types of attachment measurement, one a self-reported style and the second measure a detailed description of relationship functioning. Thus, these outcomes provide insight into both the intrapersonal and interpersonal aspects of the attachment system as it pertains to this population.

Our prevalence rates of PTSD when defined as scoring 50 or higher on the PCL-M (13%) were consistent with the prevalence rates in the literature (13%) for service members returning from the wars in Iraq and Afghanistan.[42] Additionally, our results were consistent with the known relationship between attachment style and PTSD outcomes in other high-risk populations. These findings have important implications to our military population at the individual and organizational levels. Understanding attachment patterns and styles among service members can possibly be both a protective factor and a diagnostic factor in mitigating the risk of PTSD and providing treatment to service members and their families. Additionally, attachment measures may help guide recruitment, placement, and organizational decisions for the military.

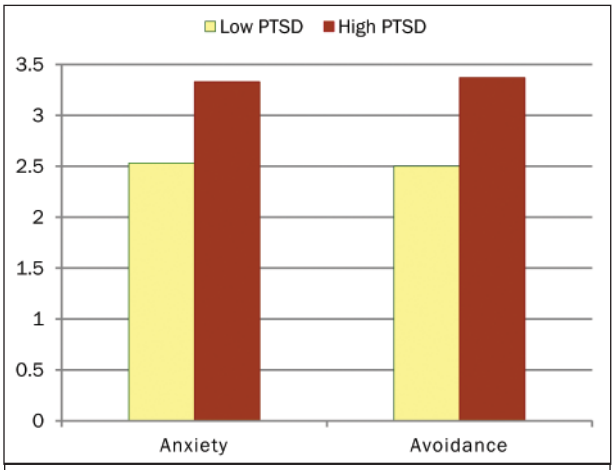

Figure 3. Relationship anxiety and avoidance plotted by dichotomous posttraumatic stress disorder score.

Adult attachment style may protect service members from developing PTSD after experiencing combat and combat-related experiences. Attachment theory asserts that "any relationship in which proximity to the other affects security is an attachment relationship"[43] and therefore most all professional relationships in the military impact the individual attachment system. Moreover, an attachment relationship does not have to be a romantic relationship and may be any relationship such as peer to peer, subordinate to supervisor, leader to follower, or same or mixed gender relationships. By the time a person enters the military their propensity for certain attachment styles has been established and may play a role in how much trust is placed in new relationships (ie, peer to peer, leader to follower, etc). As early as basic training young trainees are assigned a battle-buddy* and encouraged to always have their battle buddy with

*Generally defined as the person to whom a Soldier can turn in time of need, stress, and emotional highs and lows who will not turn the Soldier away, no matter what. This person knows what the Soldier is experiencing because of experience with similar situations or conditions, either current, previous, or both.

them. When assigned to a military unit, especially in a stressful combat environment, relationships with others within the unit are vital to enabling a cohesive effort towards a collective goal. Many view the others within their unit as their "military family," and are encouraged to always have a battle buddy or a "wingman" and support each other, establishing positive relationships throughout their career in the military, and some even follow beyond retirement. Conversely, there are unstable relationships within units, sometimes causing detrimental effects, especially when individual members isolate themselves, inhibiting communication, and consequently harming unit cohesion and effectiveness, not only for themselves, but for their entire unit.[43]

Military personnel with secure attachments, especially with their respective military family, appear to experience less stress because they use social coping mechanisms. They are more apt to engage with their families and peers, and go to mental/behavioral health practitioners or the chaplain for assistance, all of which mitigates the risks to developing symptoms of PTSD. Flexibility allows these securely attached individuals to adapt well to their environment. Beyond preventing PTSD, secure attachment may also contribute to the reconstruction of comforting, health sustaining beliefs shattered by trauma, an example of what Tedschi and Calhoun[44] call posttraumatic growth. Current efforts by the military have focused on group debriefings, psychotherapy, and psychopharmocological interventions. However, additional efforts could be focused on making a more successful match between treatment approaches so that those who are not securely attached can receive supportive interventions that may prevent the symptoms of PTSD. Based on these various attachment styles, providers would be able to plan programs and provide interventions and treatments for service members in the predeployment, deployment, or postdeployment phases.

FUTURE DIRECTIONS

The relationship between attachment style and PTSD outcomes in service members clearly merits further inquiry. Future studies will need to explore the subcategories of the PTSD diagnosis with respect to attachment styles in order to show more specifically how the attachment system affects the disorder. More detailed information on these relationships can guide the development of programs and interventions, and inform the application of attachment related treatment to the clinical context. Additionally, longitudinal studies examining the relationship between these variables pre- and posttreatment and pre- and postdeployment will advance the determination of causal factors, the potential for change, and the efficacy of prevention measures. For example, is attachment style changed by trauma or is it more of a risk factor? If something can be done in the military to help promote secure attachment in the interest of strengthening our forces, what could that be and how can this be undertaken within a military setting?

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AUTHORS

LTC Escolas is Assistant Dean for Research and Human Protections Administrator, Academy of Health Sciences, US Army Medical Department Center and School, Fort Sam Houston, Texas.

Ms Arata-Maiers is a Mental Health Technician at Nix Specialty Health Care, San Antonio, Texas.

1LT Hildebrandt is a Social Work Intern, Department of Behavioral Health, San Antonio Military Medical Center, Fort Sam Houston, Texas.

Dr Maiers is a Clinical Psychologist, Warrior Resiliency Program, San Antonio Military Medical Center, Fort Sam Houston, Texas.

Dr Mason is Associate Director of Research Outcomes and Data Analytics, Wellness & Prevention, Inc, Ann Arbor, Michigan. He is also an Assistant Professor, Adjunct, Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Maj Baker is a Flight Commander, Behavioral Analysis Service, 559th Aerospace Medicine Squadron, Lackland Air Force Base, Texas.

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