JOINING FORCES Joining Families

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Shaken Baby Syndrome – History, Literature, Current Controversies

James E. McCarroll, Ph.D.

Wheeler's major points are (1) that professionals need to be aware of the current debates on the subject of shaken babies, and (2) that diagnosis and management of the syndrome requires a multidisciplinary approach.

Interventions that will be effective in preventing the Shaken Baby Syndrome (SBS) are complex and require the participation of a variety of individuals and organizations. SBS is not a new phenomenon. Philip L. Wheeler, of the Deputy Commissioner's Command, New Scotland Yard, United Kingdom, has written a summary of the literature that provides an overview of the complexity of SBS and describes current controversies for those who are in positions to intervene. Wheeler's interest in SBS began as a police officer involved in cases of shaken baby murders. He has since sought the development of an investigative model and studied SBS both as a medical syndrome and as a criminal offense. We will summarize his information here.

The article presents the medical, social, and legal perspectives on the history, prevalence, and current views as to what constitutes SBS. The paper includes 90 references, which makes it a valuable source for both historical and current literature on SBS and related matters. The major points are: (1) that professionals need to be aware of the current debates on the subject of shaken babies, and (2) that diagnosis and management of the syndrome requires a multidisciplinary approach.

History of SBS

The first year in which literature on SBS was published was 1860. It was a report on the brains of children who suffered abuse by their parents. Caffey (1946), in what is considered the landmark article in the U.S. on child abuse, associated fractures of long bones with the abuse of children. The 1950s saw the first news coverage in America of babies who were killed by shaking by caretakers (Newsweek, 1956). In one story, a nurse killed three children by shaking them to "bring the bubble up." The 1970s saw the development of extensive medical knowledge in what is now known as SBS. This work set in place the ability of doctors to identify shaking as a cause of subdural hematoma (blood on the brain) when abuse was suspected. A British doctor, Guthkelch (1971), discussed 27 shaken baby cases, but stated that they were only a tiny proportion of the thousands of cases that occur

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In This Issue

This issue marks a renewed mission, name and newsletter presentation. Welcome to *Joining Forces, Joining Families: Real World Research for Family Advocacy Programs*. This electronic format will enable you to forward articles of interest to your colleagues and to download information to share with families. We seek to identify and facilitate quality research and provide information and resources that can prevent, mitigate and foster recovery from traumatic incidents or their consequences affecting military families and communities.

This issue highlights Shaken Baby Syndrome—its history, literature, current controversies and a proactive prevention program. In addition, it features an interview with two military physicians on the impact of the Iraq deployment on children, an article on statistics, and a thought-provoking piece on post-traumatic growth. We hope you will enjoy this new format and we invite your ideas and contributions for future issues. — *James E. McCarroll, Ph.D., Editor-in-Chief*

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While Wheeler makes no attempt to provide diagnostic guidelines, he does point out recent conclusions from the medical literature on aspects of the diagnosis of SBS that are useful in investigations.

every day. He also noted that the most common motive for what he called repeated whiplash shaking of infants was to correct minor misbehavior.

The response of the criminal justice system is also reviewed. Cobley et al. (2003) highlighted the legal issues in the approach to SBS cases. One of the issues is whether SBS is to be tried as murder or manslaughter and should offenders receive a life sentence or lesser penalties upon conviction.

King (2003) published information on SBS cases coming through 11 Canadian hospitals between 1988–1998. The median age of victims was 4.6 months with a range of 7 days to 58 months and males accounted for 70% of perpetrators. Retinal hemorrhages were found in 76% of cases.

Conclusions for Investigations

Recent conclusions from the medical literature on aspects of the diagnosis of SBS are useful for investigations.

1) The examination for retinal hemorrhage should be a routine practice in the diagnosis of SBS. However, Caffey (1974) reports that it is not uncommon for newborns to have retinal hemorrhages, which generally clear up within a few days or weeks after birth. After four weeks of age, retinal hemorrhages are unlikely to be related to birth trauma.
2) Rib fractures are common in babies who have been abused. It has been shown that major force is needed to cause rib fractures. Thus, if fractures are found, there is a high likelihood of abuse.

Controversies

The following major controversies surround the understanding of SBS.

First: The lucid interval debate. There is disagreement in the medical literature as to whether a fatally shaken infant has an interval of consciousness without symptoms after the injury and before death. Wheeler's review found no evidence of a lucid interval.

Second: The degree of trauma debate. Doctors and investigators have been told by parents bringing a child to the hospital that the child fell from a short height and sustained the damage. The conclusion in the literature is that falling out of bed is a relatively benign experience. One review found that in over 800 cases of children falling 3–4 feet on to a hard surface, none suffered unconsciousness. Another conclusion cited in the reviewed literature was that a serious incident was the result of a complex accident and that many instances of head trauma are missed by physicians. One paper suggested that head trauma should be considered when a child showed symptoms of irritability and vomiting and that a pediatric radiologist should be consulted in all cases of suspected child abuse.

Third: The mechanism of injury in SBS. In one study of 53 cases of abusive head trauma (Geddes et al., 2001a,b) 70% of victims were less than 12 months old, 71% had retinal hemorrhages, 36.5% had skull fractures, and 19% had rib or clavicle fractures. These papers are reported to be controversial and difficult for all but trained medical personnel to follow. However, such work is believed to stimulate argument and contributes to the debate.

There are also debates about what SBS should be called. SBS is also called abusive head trauma. The term SBS is thought by some to be too emotional whereas abusive head trauma tends to reveal the true nature of the condition.

While the controversies persist, the U.S. and Canada have made efforts to ensure that the mainstream view is presented to the public and to the medical profession. For example, the American Academy of Pediatrics produced their first position statement on SBS in 1993 and it was renewed in 2001 (American Academy of Pediatrics, 1993, 2001).

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Joining Families

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Among these opportunities are to learn how knowledgeable are parents, prospective parents, and other caretakers (e.g., day care providers) about the damage to babies and children from shaking, how to stop disciplinary practices that might involve shaking, as well as the knowledge of medical and nursing practitioners, and law enforcement and legal personnel on how to identify suspected cases of shaken babies.

The Army has had an interest in preventing shaken baby syndrome for many years. It is addressed through a variety of prevention programs including the one described by Dr. Cooper in this issue. Army Family Advocacy Program personnel may note the opportunities for research on SBS at the local level. Among these opportunities are to learn how knowledgeable are parents, prospective parents, and other caretakers (e.g., day care providers) about the damage to babies and children from shaking, how to stop disciplinary practices that might involve shaking, and the knowledge of medical and nursing practitioners, law enforcement and legal personnel on how to identify suspected cases of shaken babies.

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Protecting the Gift Project

Dr. Sharon Cooper, Developmental Pediatrician, Womack Army Medical Center, Fort Bragg, NC

There is a significant impact upon a family when an infant sustains a closed head injury from a shaking incident. This violent form of child abuse can lead to a tragic, permanent, and preventable outcome.

When an infant sustains a closed head injury from a shaking incident, it has a significant impact upon a family. This violent form of child abuse can lead to a tragic, permanent, and preventable outcome. Babies who are injured in this manner have a far worse neurological outcome than those accidentally injured. Recognition of this type of abusive head injury is often difficult for clinicians and non-offending family members because there is typically an absence of external physical signs of abuse. This fact can lead to a delay in medical care, further complicating the problems for the injured victim. Consequently, it is important to provide proactive educational opportunities for parents of newborns so that they can recognize: (1) crying as a key stimulus to shaking, (2) procedures to avoid abusive head injuries and, (3) the importance of disseminating preventive information to their family members, caregivers, and friends.

The *Protecting the Gift Project* (PGP) is a collaborative initiative between the Fort Bragg Family Advocacy Program and Womack Army Medical Center. It is a proactive educational program to inform parents of factors related to the prevention of abusive head injuries and harm associated with child abuse and neglect. The PGP initiative began in April 2004 with the use of mandatory classes for all mothers and fathers of babies delivered at Womack Army Medical Center. The parents, regardless of

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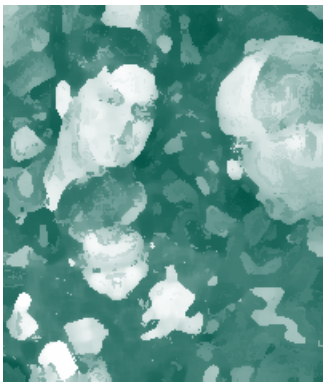

PGP… is a proactive educational program to inform parents of factors related to the prevention of abusive head injuries and harm associated with child abuse and neglect.

marital status, number of children or dependency status are invited to attend a 30-minute facilitated group discussion on Shaken Baby Syndrome, crying during infancy and the toddler years, and the selection of childcare providers. As needed, the information is provided in English and Spanish. Parent education includes a group discussion, an informative video on Shaken Baby Syndrome, concrete recommendations on behaviors that might be helpful when confronted with a crying baby, and how to access local childcare resources.

The Shaken Baby Syndrome discussion includes examples of the types of shaking that cause closed head injury. Parents are advised that the frequency and intensity of a baby's crying is not motivated by a desire to irritate the caregiver. Recommendations are made for safety precautions if an infant develops specific problems with protracted crying and the parent is unable to be the primary caregiver because of work-related demands. Information regarding the selection of childcare providers is given in a 1-hour class which is also provided in several counties around Fort Bragg. Efforts to coordinate and integrate services, which are available in areas of closer proximity to the homes of soldiers stationed at Fort Bragg, are important components of the PGP.

At the completion of educational classes, parents are invited to sign a commitment statement that they understand the risks of shaking babies, the issue of crying as a cause of shaking, and the need to carefully select a childcare provider. A certificate is provided to the parents regarding their commitment to the program and a gift bag is given to families that includes colorful written reminders of the information discussed in classes as well as a CD-ROM to promote a calmer environment for parents and babies.

Over a twelve month period, participants in the PGP receive telephone calls between scheduled well-baby visits to remind them of the key points of the project and to ask if there are needs that can be addressed by resources at the medical treatment facility or Army Family Advocacy Program. The telephone contacts follow specific age appropriate scripts, are conducted by hospital personnel, and are documented in the infant and mother's medical record.

The PGP ensures fathers who were deployed at the time of their child's birth have an opportunity to learn about the tenets of the program. A special class, primarily covering the same material provided for non-deployed parents, is provided weekly during reintegration briefings at the medical treatment facility. The goal of the redeployment briefing is to foster appropriate parental expectations and suggest alternative behaviors to corporal punishment for infants and toddlers. Participants are encouraged to share the information with their friends and families so that individuals in the child's "family circle" are encouraged to provide a nurturing and protective environment.

PGP will be implemented at local county hospitals in the eight counties that are the home for Fort Bragg soldiers and their families so that a seamless system of information and referral can be delivered to all military families. If families can avoid the terrible results of an abusive head injury, the PGP will reap wonderful dividends. The cost of care for an infant or toddler who suffers from a severe head injury surpasses the financial cost of the PGP in terms of family and unit morale and criminal justice ramifications.

Participants are encouraged to share the information with their friends and families so that individuals in the child's "family circle" are encouraged to provide a nurturing and protective environment.

Deployment Impact: Resiliency and Post-Traumatic Growth

John Newby, DSW and Nancy Vineburgh, MA

An understanding of how deployment stressors affect personal and social adjustment of soldiers and families is important for research and for informed prevention and treatment practices.

An understanding of how deployment stressors affect the personal and social adjustment of soldiers and families is important for informed deployment-related prevention and treatment interventions. The intent of this article is to present the notion that some positive benefits may be derived from an extremely stressful event such as a deployment and that individuals often demonstrate resiliency and hardiness in their reaction to such events. It is generally believed that deployments have solely an adverse impact on soldiers and families with associated stressors arising before, during, and afterwards. Such stressors often pertain to concerns about security and safety, family disruptions and isolation, extended and recurring absences, terrorism, injuries, and death. Experiencing these stressors can be traumatic for some soldiers and their family members. Accordingly, current support programs and services delivered pre-, during, and post-deployment are usually designed to help soldiers and families prepare for and deal with the perceived negative consequences of such stressors.

Deployments may have positive as well as negative consequences for soldiers and families. A prevalent negative consequence is often the absence of soldiers from families and the missing of important events. Positive consequences for some soldiers include: making additional money, developing an improved marital/family relationship, personal growth, maturation and self-improvement, and learning not to take family and country granted.

The potential for individual and family growth as a positive consequence of the deployment experience may be considered in the delivery of deployment-related interventions. There is a growing body of literature that supports the need to examine the potential of positive benefits derived from extremely stressful and traumatic experiences (Tedeschi & Calhoun, 1996). Although exposure to disasters and other trauma is associated with debility that can persist for decades, resiliency is by for the most common reaction. For some people, trauma and loss may facilitate a move toward health (Card, 1983; Foa, et al., 2000; Ursano, 1981).

Accordingly, an extremely stressful experience, such as a deployment for some soldiers and families, can become the center around which the affected individual reorganizes a previously disorganized life, reorienting values and goals (Holloway & Ursano, 1984; Ursano, 1981; Ursano, 1987).

This "benefited response" has been reported in the combat trauma literature (Elder & Clipp, 1989). Sledge and his colleagues (Sledge et al., 1980) found that approximately one-third of U. S. Air Force Vietnam-era prisoners of war reported having benefited from their prisoner of war experience; they believed that they had developed an important reprioritization of their life goals, placing new emphasis on the importance of family and country. The prisoners reporting these benefits tended to be the ones who had suffered the most traumatic experiences.

The term "post traumatic growth" is used to identify changes in self-perceptions, changes in interpersonal relationships, and a changed philosophy of life that may ensue as a result of traumatic or extremely stressful life experiences (Tedeschi & Calhoun, 1996). Research is needed to focus on areas of positive and negative consequences of deployment and on interventions programs that may build upon positive outcomes as well as negative consequences.

The following website on resilience provides additional information: "Road to Resilience" http://helping.apa.org/resilience. *This site may be a useful resource for FAP personnel and Family Readiness Group leaders and participants.*

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Deployment: Experts Discuss Impact on Children

John Newby, DSW and Nancy Vineburgh, MA

Joining Forces/Joining Families interviewed two leading military physicians on the impact of deployment on children: Dr. Stephen J. Cozza, COL, USA, Chief, Department of Psychiatry, Walter Reed Army Medical Center; Associate Professor of Psychiatry, Uniformed Services University of the Health Sciences, and Dr. Jessica Mitchell MAJ USAF, Family physician; Associate Residency Director, Andrews Air Force Base.

Q) How do we prepare children for deployment?

A) *Dr. Cozza:* Parents must be honest and truthful with an eye toward the safety, security and continuity of the child's life. If the deployment will affect the child's lifestyle, such as having to move to live with a grandparent or changes in childcare, school or community activities, the child needs to hear of these things in advance.

Q) What other factors are important to reassure them?

A) *Dr. Cozza:* There are three important factors. First, parents should digest the information *before* they communicate it to children so they can deliver it in a calm and reassuring manner. Second, children worry about the *safety* of the deployed parent. It is important to let children know that the deployed parent is *trained* to do their job. Third, it is important to communicate in an age-appropriate way. [See box: *Communicating with Children about Deployment*]

Q) Are there ways that parents can reduce stress on their children?

A) *Dr. Cozza:* To reduce stress on children, it is important to maintain the structure of the house so that regular routines are as consistent as they were before the deployment. It is also important to reinforce new responsibilities that a child may take on in the absence of the deployed parent, such as mowing the lawn or taking on other tasks around the house.
You can view it as an opportunity for the child to grow from the experience. If parents are experiencing conflict during the deployment, it increases the stress children experience. Parental conflicts distress children and add to their worries. Children do best if their parents are managing things well and can be supportive to their children.

Q) How do children signal their distress?

A) *Dr. Mitchell:* Stress affects children like it does adults. They may have head aches, stomach aches, and sleep disturbances. Other things that can happen are moodiness, irritability, low energy, and more dramatic reactions to relatively minor situations such as stubbing a toe. It is often difficult to distinguish between normal distress and more serious problems needing an evaluation or treatment. I ask parents, "How is your child acting?" If they can maintain their weight, still have fun, OK. Usually young children don't fake well; adolescents know about secondary gain from sickness.

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Communicating with Children about Deployment: Tips from Dr. Jessica Mitchell

Three to four year olds

No concept of time. A three year old thinks that three months is next week. Parents need to use markers, such as, "I'll be home right before your birthday or before a holiday."

Early elementary school

Better understanding of time. They understand that three months is a long time. Calendars are helpful. You can mark the calendar and say, "This is the day that I will be coming home."

Seven and eight year olds

Understand time and bigger concepts. Will be able to look at a calendar and mark it. You can say, "This is the day I'm supposed to come home." This age group understands concepts like good and bad. You can say you are going away to take care of the bad guys or bad things.

Nine, ten, eleven and twelve year olds

Abstract thinking has begun. They are aware of the news and can understand concepts like the "national good." You can put out a return date, and they will understand the time frame. If you say you'll be away for three months, they might respond, "You mean you'll miss the summer!"

This group knows you're not abandoning them, hence needs to hear and will benefit from reinforcement of how much you love and will miss them. Reinforce child's sense of autonomy by using pre-stamped envelopes, as well as private email accounts for communicating.

Older adolescents

Challenging age group. This is an emotional period of time. They're the kids that take the hardest hit. It is an age when children need to identify with their same sex parent and if that parent is deployed, it is especially difficult for the child.

Statistics: Building Bridges from Research to Practice

One of the purposes of this newsletter is to acquaint Family Advocacy Program (FAP) personnel with statistical concepts and their importance in understanding and developing research. Why should this be a priority? Increasing the use of evidence-based practice is a goal of the FAP.

James E. McCarroll, Ph.D.

One of the purposes of this newsletter is to acquaint Family Advocacy Program (FAP) personnel with statistical concepts and their importance in understanding and developing research and program development strategies. Why should this be a priority? Increasing the use of evidence-based practice is a goal of the FAP. Unfortunately, there is no official seal of approval on interventions for FAP that will guarantee that they have passed "statistical muster." Perhaps this is a good thing. Because of the variability in the Army's missions, mix of personnel, assignment location, and other factors, it is unlikely that a program could be applicable to people in all of these circumstances. It is often said that we do not believe in the "one size fits all" approach to FAP interventions, but it is likely that people are still looking for such an approach.

Because one size does not fit all, program managers and clinicians are encouraged to be innovative. Frequently, programs are borrowed and adapted. The decision to use a procedure such as a measurement instrument or a clinical intervention requires a critical appraisal of whether it is likely to be successful or even helpful. This is where some knowledge of measurement concepts and statistics will help you in making a decision.

How can *Joining Forces* help you to develop this skill? First, one needs to have some grasp of basic statistical concepts. It has been our objective in the statistics column to help the *Joining Forces* reader better understand the statistical concepts presented in scientific articles and presentations and to ask questions when approaching such material. For example, in previous issues of *Joining Forces* we have described the nature of statistical concepts such as the nature of population distributions and variability (Vol. 1, No. 1), two basic statistical tests, chi-square and t-tests (Vol. 1, No. 2 and Vol. 2, No. 3 and No. 4.), correlation (Vol. 2, No. 4), and statistical significance (Vol. 3, No. 4). Our statistics column has also described more sophisticated statistical issues such as bias and confounding (Vol. 3, No. 1 and No. 2), sampling in research design (Vol. 3, No. 3), effect size (Vol. 5, No. 3), hypothesis testing (Vol. 5, No. 4), regression models (Vol. 6, No. 1), and levels of evidence (Vol. 7, No. 2).

In future issues of *JF*, we will continue presentations of statistical material. One of the approaches will be to use scientific articles as examples and point out the meaning and significance of the statistical material presented in the article. By so doing, we hope to use concepts already presented and show how they are used in practice. In the future, we will include more descriptions of tests and concepts as they occur in published articles.

We value inquires and suggestions from the FAP workers in the field. Please send us an e-mail or phone us and let us know what you would like to have presented or clarified. Our numbers are on the second page and there is always someone here at the USUHS Department of Psychiatry to respond to you in a timely fashion. Past issues of *JF* are available at: www.usuhs.mil/psy/newsletters/newsletter.html.

Costs of Hospitalization for Child Abuse and Neglect

The [authors] estimated that child abuse or neglect diagnoses represented 0.15% of all US hospitalization of children aged 18 years and under.

James E. McCarroll, Ph.D.

In a national probability sample, Rove, Chen, and Johnson (2004) explored the economic costs of inpatient hospitalization for children admitted with a diagnosis of child abuse or neglect compared to other (non-abused) hospitalized children (Healthcare Cost and Utilization Project, 1999 Inpatient Sample, 2001). (The article gives detailed information on how child abuse and neglect were coded using the International Classification of Disease.) They estimated that child abuse or neglect diagnoses represented 0.15% of all US hospitalization of children aged 18 years and under.

Physical abuse was the most prevalent type of abuse, 38.8%, followed by shaken infant syndrome (21.1%), child neglect (16.0%), sexual abuse (8.9%), unspecified (4.6%) and emotional or psychological abuse (0.5%). Abuse or neglect was the primary diagnosis 40.2% of the time.

Abused or neglected children were younger

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Deployment: Child Impact, *from page 6*

We do not do children any favors by not telling them the truth.

Q) How should parents handle school problems?

A) *Dr. Cozza:* Parents need to inform the school of the home situation, so that, if needed, the child can be linked up with counseling services. Sometimes parents do not want to call attention to their child by warning school officials to look out for them. It would still be important for the school to be alert to any unusual symptoms. If a child has had psychiatric issues before the deployment they are more likely to have problems as a result of the deployment. It is important to talk to the child about any acting out, and get them to discuss their feelings and issues.

Q) How does a parent handle the subject of death or severe injury?

A) *Dr. Mitchell:* That's a difficult situation but it is never good to lie to children. Usually they imagine something worse than the truth. It is better to say that the parent died—just better to make it clear. Some parents may say things like: "Mom is going to sleep, never to wake up." Explaining things that way can instill a fear of going to sleep and maybe not waking up. In cases of amputations, I say it the way it is. We do not do children any favors by not telling them the truth.

Q) Why is it that some families do well and others do not?

A) *Dr. Cozza:* A lot has to do with the maturity of the parents. If the family functioned well before the deployment they will probably do OK. If the parents were having a lot of problems before the deployment situation, the problems will probably continue. Most families do just fine.

Cost of Hospitalization, *from page 6*

Abused children were more likely to be admitted through the emergency room and were nearly nine times as likely to die during hospitalization.

(2.7 vs. 5.2 years) and 49.2% were younger than one year compared with 40.8% of the other children. Race (black and those who gave no racial classification) discriminated between the abused and non-abused groups even after controlling for income. Abused children were more likely to be admitted through the emergency room and were nearly nine times as likely to die during hospitalization. They also had twice the number of days in the hospital (8.2 vs. 4), twice the number of diagnoses (6.3 vs. 2.8), more procedures (1.3 vs. 0.8), and double the total charges ($19,266 vs. $9,513). The highest charges were for shaken infant syndrome ($30,311). (See articles in this issue of *JF* for more information on Shaken Baby Syndrome.) The authors pointed out that the costs reported here do not reflect the many additional charges that can occur to families before and after hospitalization, nor do they reflect pain and suffering. While this study is an important estimate, it is probably below the actual costs when you consider the numbers of abused and neglected children who need hospital care, but do not receive it.

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