Brain trauma induced by verbal abuse

Implications for child and elder abuse intervention

Published by Hornsby Ku-ring-gai Survivors Group Incorporated

---

Recommended citation

Ross Blade (2017), "Brain trauma induced by verbal abuse: Implications for child and elder abuse intervention." Sydney, NSW, Hornsby Ku-ring-gai Survivors Group Incorporated.

Brain trauma induced by verbal abuse

Implications for child and elder abuse intervention

Published by the Hornsby Ku-ring-gai Survivors Group Incorporated (registered charity)
Author: Ross Blade B.Teach (Distinction) (UTS) G.Cert TESOL (Griffith) Advocate
Reviewed by: Dr Bill Anderson, AM, MA (Hons) (Syd), PHD (London) registered psychologist
Foundation member and now life member of the Australian Psychological Society

ABSTRACT: It is through language that we define who we are and our place in the world. Left unchecked parental and sibling verbal abuse during the formative years, distorts a child's social development and inflicts harm comparable in severity to non-familial sexual abuse. Verbal abuse like sexual abuse alters brain development, and on entering adulthood not all the adverse changes to brain structure can be reversed nor compensated for, leaving victims prone to mental illness and under employment. Today increasing numbers of elderly women are also victims of verbal abuse, leading to increased use of anti-depressants and increased mortality risk. It is noted that the NSW Police recognise verbal abuse as a subset of domestic violence crime, and that the Royal Australian College of General Practitioners has published clear guidelines for identifying victims of such abuse. Despite these positive developments there is evidence that those charged with protecting the vulnerable, such as the NCAT Guardianship Division, continue to employ processes that ignore verbal violence thereby leaving victims exposed to ongoing risk. This study concludes that verbal abuse is an act of violence comparable in impact to non-familial sexual abuse, and that children and the elderly will remain at risk until the cultural norms surrounding this destructive behaviour are firmly set aside.

"Sticks and stones will break my bones but words will never harm me."

"Words can hit as hard as a fist" (Kendall-Tackett 2001) and so for many people, verbal and emotional abuse represent a devastating form of maltreatment. What is not well known to the public and the many charged with protecting the vulnerable, is that in domestic and family violence contexts, a parent's verbal blows can cause significant brain trauma in children 18 and under[1], [2] (Vissing, Straus et al. 1991, Teicher 2000, Johnson, Cohen et al. 2001, Teicher, Samson et al. 2006, Cromie 2007, Baker, LaCroix et al. 2009, Choi, Jeong et al. 2009, Reinert and Edwards 2009, Tomoda, Sheu et al. 2011). Elderly women subjected to verbal violence have an increased mortality risk, and unlike younger abused women take more tranquilisers, sedatives and antidepressants (Baker, LaCroix et al. 2009).

Our lack of attention to this invisible and devastating form of abuse means thousands of children and elders go unprotected and untreated, at great personal cost to themselves and society.

Acts of parental verbal violence towards children can be associated, in early adulthood, with symptoms of depression, anxiety, anger-hostility, dissociation and 'limbic irritability'. Limbic irritability sets the stage for problems later on in life, including mental health issues such as Posttraumatic Stress Disorder (PTSD)

---

[1]Historically the word 'violence' has been reserved for physical harm. However, with the advent of technologies such as MRI it has been possible to establish a link between verbal violence and physical/functional changes in critical regions of the brain. This includes, but is not limited to, regions associated with language. In response to the now measurable neurological damage associated with parental verbal violence this author takes the view that the term 'violence', which imbues the act with potential consequence such as 'physical harm', should now replace the earlier and more benign term 'abuse'.

[2]Psychological violence and emotional violence are intertwined with verbal violence. While they are both associated with unique and established behaviours of their own, they have in common a linguistic or verbal dimension:

> *"Psychological abuse, frequently defined as, "verbal and non-verbal acts which symbolically hurt the other, or the use of threats to hurt the other …"" (Straus 1979, Vissing, Straus et al. 1991, Teicher, Samson et al. 2006).*

Furthermore, recent research points to verbal violence contributing to injury comparable with familial physical abuse and non-familial sexual abuse. Also, the combination of parental verbal violence with witnessing domestic violence generally has, on some measures, a greater negative effect than exposure to familial sexual abuse (Teicher, Samson et al. 2006, Teicher, Samson et al. 2014). Together these acts of abuse have been criminalised in the UK under the title of 'coercive abuse'. Finally, it must be emphasised that it is through 'language' that we define our place in our family and later in the broader community (Wells 1994, Creese, Martin et al. 2008). As such a loss of linguistic IQ can have profound consequences.

(Teicher 2000, Teicher, Samson et al. 2006). The impact of verbal violence on the health of a child's rapidly developing brain can be comparable in effect size to witnessing domestic violence or non-familial sexual abuse (Teicher, Samson et al. 2006). Verbal abuse on its own was comparable to nonfamilial sexual abuse and to witnessing domestic violence; only in combination with witnessing domestic violence did it equal or exceed familial sexual abuse on some measures (Teicher, Samson et al. 2006).

Magnetic Resonance Imaging (MRI) technology was recently used to measure changes in key regions of the brain in young adults (18–25) who had experienced parental verbal violence as children (Tomoda, Sheu et al. 2011). Previously, there had been a number of studies using MRI that graphically demonstrated changes to the brain in victims of physical and sexual violence with PTSD.

The earlier studies found that the hippocampus (memory and other functions) shrank[3] around 12% (Bremner, Randall et al. 1997) which functionally challenged the prefrontal cortex, interfered with speech and allowed 'negative emotional responses', managed by the amygdala (alarm system), to go unregulated (Etkin, Egner et al. 2006).

If that was not enough, affected people also struggled to differentiate aspects of 'past and present' life experience so that, at an emotional level, the original traumatic childhood experiences tended to be relived in the present. The impacted brain regions and pathways allowed seemingly unrelated everyday events to trigger intrusive thoughts, hyperarousal, flashbacks, nightmares, sleep disturbances, loss of concentration and startled responses (Ehlers and Clark 2000, Bremner 2006, Rocha-Rego, Pereira et al. 2012, Viatcheslav Wlassoff 2015).

Many entered adulthood with a biological basis for fear, and despite pretence to the contrary, could be swamped by unmanageable 'fight or flight' reactions (Teicher 2000). To cope, these victims try to avoid situations that can trigger such responses, which often includes family, thereby compounding social isolation.

With regard to changes to the brain, specific to parental verbal violence, Dr Tomoda and his team found that it is associated with altered development of brain regions critical for language, specifically increased grey-matter volume in the left superior temporal gyrus, an auditory and language-processing region (Tomoda, Sheu et al. 2011). Language and speech defines us as humans. It is key to learning and establishing our place in society (Wells 1994, Creese, Martin et al. 2008). The left temporal lobe structures appear to be particularly susceptible to parental verbal violence. In young adults exposed to parental verbal abuse and no other maltreatment, diffusion imaging found reduced integrity of the arcuate fasciculus, the language pathway in the left superior temporal gyrus, with white-matter integrity in that tract correlating with verbal IQ and verbal comprehension (Choi, Jeong et al. 2009). Disrupted development of these left-hemisphere language pathways carries implications for a child's capacity to learn, comprehend and verbally express, and so for study and job prospects (Bremner 2006, Etkin, Egner et al. 2006). These changes are specific to the form and the timing of the abuse. Reviewing the imaging literature, Teicher and colleagues conclude that different types of maltreatment leave different neurodevelopmental signatures, each targeting the sensory and regulatory systems that carry the particular experience, during windows when those systems are most vulnerable (Teicher, Samson et al. 2016). Verbal abuse and sexual abuse are both serious; the brain changes they leave are not the same.

Dr Tomoda also points to potential for adverse impact on a victim's response to emotionally laden content or to highly personal communications. It seems when victims relive their traumatic experiences, the frontal

[3]Some researchers speculate that normal hippocampal size protects 'trauma exposed individuals' from developing PTSD while those with smaller than average volume, prior to the trauma, are at greater risk of developing the condition (Weniger, Lange et al. 2008). However, in a 2003 study where sufferers were treated with Paroxetine, a 4.6% increase in hippocampal volume (Vermetten, Vythilingam et al. 2003) was achieved: a reverse of the effect of stress on hippocampal atrophy. So while a smaller than average hippocampal volume may well increase the chances of developing PTSD, the fact that Paroxetine is subsequently shown to increase hippocampal volume suggests that a loss of hippocampal volume can in fact occur in response to stress. By 2000 Dr Teicher had concluded, " … trauma causes brain damage, not the other way around" (Teicher 2000).

lobe falters, so that they have trouble both thinking and speaking. This has implications for police when interviewing vulnerable survivors. Also for the way our authorities conduct proceedings in 'highly emotional' legal environments such as the NSW Civil and Administrative Tribunal (NCAT) Guardianship Division and courtrooms.

Verbal, physical and sexual abuse victims are more susceptible to social isolation, as frustrated friends and family tell them to 'get over it' (Teicher 2000, Kendall-Tackett 2001). Today most people understand that brain damage is not easy to get over—if ever! The message the public needs to hear is that abuse of children—including parental verbal violence—stunts brain development and must be prevented.

The critical importance of a 'safe and healthy home environment' was recently further emphasised in genetic research by a leading Australian university. Dr Bousman, from the University of Melbourne, said, "Our results suggest some people have a genetic make-up that makes them more susceptible to negative environments, but if put in a supportive environment these same people are likely to thrive." (Binder, Bradley et al. 2008, Bousman 2015). Of note, in a healthy environment this group was found to be the 'happiest' of all. Dr Bousman points out that, "You can't change your genotype or go back and change your childhood, but you can take steps to modify your current environment" (Bousman 2015).

Elderly women subjected to verbal violence have an increased mortality risk, and unlike younger abused women take more tranquilisers, sedatives and antidepressants.

At this point it is important to clarify what 'verbal abuse' is, e.g. yelling, lying, name-calling, insulting, swearing, withholding important information, unreasonably ordering around and telling a person she or he is worthless or nothing but trouble (O'Leary and Maiuro 2004, Teicher, Samson et al. 2006, Baker, LaCroix et al. 2009).

Any family member can be verbally abusive, not just parents. Sibling abuse can be both severe and inflict injuries similar to parental abuse (Kendall-Tackett 2001). Kendall observed that abuse by a brother or sister was often brutal and sadistic. Consistent with Kendall's observation is the following recount of a nightmare as recorded in an email to a parent by an adult survivor of sibling abuse (Blade 2017):

> *What was so difficult was the overwhelming, mind numbing and soul wrenching sense of humiliation that came so alive with every word he [sibling] spoke and every look he gave.*

It beggars belief that these behaviours are not only tolerated but the norm in numerous homes (Vissing, Straus et al. 1991). Put simply, it was not the tip of the iceberg that sank the Titanic. In the domestic violence context that would be the traditional signs of abuse, such as physical injury. The Titanic however sank because it failed to evade the massive body of ice unseen below the surface. In this context it is devastating verbal violence.

Navigating this hazard is proving difficult for Australian authorities because some still lack appropriate domestic violence screening procedures or simply avoid asking if there is a history of domestic violence.

This is of concern because verbal violence is associated with psychiatric harm comparable in severity to that of non-familial sexual abuse, and with its own measurable changes in brain structure, yet it receives next to no attention (Teicher, Samson et al. 2006, Tomoda, Sheu et al. 2011). Even the current edition of the NSW Police 'Code of Practice for the NSW Police Force Response to Domestic and Family Violence', omits any overt reference to verbal violence:

> *"Domestic and family violence is a crime that takes many forms including emotional and psychological abuse, intimidation, harassment, stalking, physical and sexual assault, and can include animal abuse targeting pets, and damaging personal or joint property." (NSW Police 2013)*

This is probably because historically, some scientists subsumed verbal violence under psychological and or emotional violence (Baker, LaCroix et al. 2009). However, in light of the mounting body of evidence that verbal violence 'alone' can alter brain structure and functionality, this practice appears seriously outdated.

To emphasise just how serious this omission is, it was established as far back as 2009 that elderly women subjected to verbal violence have an increased mortality risk, and unlike younger abused women take more tranquilisers, sedatives and antidepressants (Baker, LaCroix et al. 2009).

Abused women do not generally present with obvious physical injury (Campbell 2002). In response, the Royal Australian College of General Practitioners 2014 edition of 'Abuse and violence: Working with our patients in general practice' Section 10.1 Elder abuse provides GPs with a scientifically based assessment tool and approaches to asking questions that recognise complexities such as shame and self-blame (Practitioners 2014).

By way of stark contrast, the NCAT Guardianship Division (NGD) is known to base assessment of elder abuse on as few criteria as visible fear and or injury, made during interviews as brief as ten minutes (Blade 2017). More subtle but potent factors such as shame, guilt, self-blame, resignation and wishful thinking do not appear to be adequately accounted for (Garcia-Moreno 2001, Morgan, Chadwick et al. 2009). Where members of protestant religious communities are involved, shame can be a powerful force (Bussert 1986, Dickson 2015, Baird 2017). Here,

> *"Silence within the religious community [protestant] has served to keep the lid on the simmering pain that not only immobilises victims but encourages the behaviour of the perpetrators" (Pagelow and Johnson 1988).*

This is of particular concern given that the NGD is known to have, at least on one occasion (Blade 2017), used a Legal Aid lawyer to represent a victim from the same congregation that the lawyer and victim worship. Given the concerns raised by Bussert, Dickson and Baird there would appear to be potential ethical questions associated with the NGD agreeing to such an appointment. However, in this instance both the appointed lawyer and the NDG appear to have avoided this conundrum by simply not asking if there was a history of abuse.

Christine Fougere, Principal Member of the NGD, stated that its guiding policy includes:

> *'facilitating the "just, quick and cheap" resolution' (Fougere 2016).*

One consequence of this policy-in-action however is that NGD investigators and members are known to avoid asking whether carers have a history of psychiatric illness or psychological problems (Blade 2017), a significant risk factor for abuse identified by The Royal Australian College of General Practitioners in the 2014 edition of the 'White Book' (Practitioners 2014).

The NCAT Guardianship Division bears considerable responsibility because its hearings can become the intersection of both elder and child abuse.

The NGD bears considerable responsibility because its hearings can become the intersection of both elder and child abuse. It is reasonable to anticipate that some applicants seeking a ruling on behalf of an elderly parent, are themselves victims of the same perpetrator.

During childhood these adult child abuse survivors typically adopt strategies enabling them to cope (Kendall-Tackett 2001, Practitioners 2014). It is important therefore that NGD members and investigators ask about historical abuse, as the strategies that enabled survivors to cope as children carry over into adulthood where they can be perceived (erroneously) as being manipulative or attention seeking. Without this awareness the chances of an elder remaining at risk of verbal abuse increases.

There exists a substantial and troubling disparity between the methods of assessment for elder abuse risk used by GPs and NGD investigators.

Interactions with family victims need to be based on a series of questions designed to elicit the information required to form a professional judgement, as opposed to the perfunctory dismissal of elements of the case because they may cause complications that impede a "quick and cheap" outcome.

It is noted that the NGD has broad powers to achieve its objectives. These include the power to exclude historical abuse and mental illness among family members, including that of the alleged perpetrator/s. Were these practices applied today to cases involving abused children, such conduct would likely be viewed by the public as unconscionable and the resulting political fallout unsustainable.

Professor Andrew Day:

> *"Although there is increasing concern about both the prevalence of, and harms associated with the abuse of older adults, progress in the development of interventions to prevent its occurrence has been slow." (Day 2016)*

In a 2007 interview published by Harvard University, titled 'Verbal beatings hurt as much as sexual abuse,' Dr Teicher warns:

> *"Our findings raise the possibility that exposure to verbal aggression may affect the development of certain vulnerable brain regions in susceptible individuals." … Possible consequences could include 'insecure attachments to others, negative feelings about oneself in relation to others, poor social functioning, and lowered self-esteem and coping strategies. Worse, says, Teicher, "such possibilities are not mutually exclusive." (Cromie 2007)*

For those victims who have gone on to develop PTSD there is good news. In addition to the option of modifying your environment, there is treatment to repair some of the damage. A combination of cognitive behaviour therapy with medication e.g. Paroxetine, can help repair changes to the brain associated with PTSD (Vermetten, Vythilingam et al. 2003, Bremner 2006). In addition, there are now other powerful approaches which indicate less medication in the total protocol.

However, there can be additional challenges for victims of verbal violence. Dr Tomoda points out that psychotherapy most often requires that the victim verbally process the psychologist's input. This process necessitates that the victim communicate their experiences and emotional states. If speech processing and language comprehension abilities have changed as a result of verbal violence then new and creative approaches to better manage their neurobiological differences are called for.

Giving lip service only to curtailing parental verbal violence along with psychological / emotional abuse is not consistent with being committed to tackling the scourge of domestic violence currently plaguing our society. Once an adult, the victims are unlikely to be able to reverse all these changes in brain development and function. Managing in spite of those changes can take a superhuman effort which deserves recognition not shame, psychologists not lawyers and candidness not silence from within protestant congregations.

It remains an imperative to prevent the damage associated with verbal violence or at least to apply remedial assistance during childhood when it's most effective. Also, given our reliance on the criminal justice system to protect victims, a more sophisticated interdisciplinary approach is urgently required whereby traumatic outcomes are more fully defined in terms of their criminal, mental health and physical health implications (O'Leary and Maiuro 2004).

In the contexts of domestic, family and elder abuse the old adage "Sticks and stones will break my bones but words will never harm me," needs to be put firmly out of our minds.

Bibliography

Baird, J. (2017, 10 August 2017). "'Submit to your husbands': Women told to endure domestic violence in the name of God." Retrieved 16 August 2017, from http://www.abc.net.au/news/2017-07-18/domestic-violence-church-submit-to-husbands/8652028.

Baker, M. W., et al. (2009). "Mortality Risk Associated with Physical and Verbal Abuse in Women Aged 50 to 79." Journal of the American Geriatrics Society 57(10): 1799-1809.

Binder, E. B., et al. (2008). "Association of FKBP5 polymorphisms and childhood abuse with risk of posttraumatic stress disorder symptoms in adults." Jama 299(11): 1291-1305.

Blade, R. (2017). Case study on ADHD and associated comorbidities in the transmission of abuse across five generations within one family: 135.

Bousman, D. C. (2015). "Gene magnifies the psychological impact of life events, for better and for worse." The University of Melbourne 'The Melbourne Newsroom'.

Bremner, J. D. (2006). "Traumatic stress: effects on the brain." Dialogues in clinical neuroscience 8(4): 445.

Bremner, J. D., et al. (1997). "Magnetic resonance imaging-based measurement of hippocampal volume in posttraumatic stress disorder related to childhood physical and sexual abuse—a preliminary report." Biological psychiatry 41(1): 23-32.

Bussert, J. M. (1986). Battered women: From a theology of suffering to an ethic of empowerment, Division for Mission in North America, Lutheran Church in America.

Campbell, J. C. (2002). "Health consequences of intimate partner violence." The lancet 359(9314): 1331-1336.

Choi, J., et al. (2009). "Preliminary evidence for white matter tract abnormalities in young adults exposed to parental verbal abuse." Biological psychiatry 65(3): 227-234.

Creese, A., et al. (2008). Encyclopedia of language and education. Vol. 9, Ecology of language, Springer.

Cromie, W. J. (2007). "Verbal beatings hurt as much as sexual abuse." Harvard Gazette.

Day, A., Boni, N., Evert, H. and Knight, T. (2016). "An assessment of interventions that target risk factors for elder abuse." Health Soc Care Community: 10.

Dickson, D. J. (2015, 12 March 2015). "The church must confront domestic abuse." Retrieved 16 August 2017, 2017, from https://publicchristianity.org/library/the-church-must-confront-domestic-abuse.

Ehlers, A. and D. M. Clark (2000). "A cognitive model of posttraumatic stress disorder." Behaviour research and therapy 38(4): 319-345.

Etkin, A., et al. (2006). "Resolving emotional conflict: a role for the rostral anterior cingulate cortex in modulating activity in the amygdala." Neuron 51(6): 871-882.

Fougere, C. (2016). THE ROLE OF NCAT'S GUARDIANSHIP DIVISION. UNSW Elder Law Seminar. UNSW CBD Campus level 6 1 O'Connell Street Sydney NSW NSW Civil and Administrative Tribunal, Guardianship Division: 31.

Garcia-Moreno, D. C. (2001). PUTTING WOMEN FIRST: Ethical and Safety Recommendations for Research on Domestic Violence Against Women. Geneva, Switzerland, World Health Organisation.

Johnson, J. G., et al. (2001). "Childhood verbal abuse and risk for personality disorders during adolescence and early adulthood." Comprehensive Psychiatry 42(1): 16-23.

Kendall-Tackett, K. A. (2001). The Hidden Feelings of Motherhood: Coping with Mothering Stress, Depression, and Burnout, New Harbinger.

Morgan, A., et al. (2009). Key issues in domestic violence, Australian Institute of Criminology.

O'Leary, K. D. and R. D. Maiuro (2004). Psychological abuse in violent domestic relations, Springer Publishing Company.

Pagelow, M. D. and P. Johnson (1988). "Abuse in the American family: The role of religion." Abuse and religion: When praying isn't enough: 1-12.

Police, N. (2013). "Code of Practice for the NSW Police Force Response to Domestic and Family Violence."

Practitioners, T. R. A. C. o. G. (2014). Abuse and violence: working with our patients in general practice. White book. East Melbourne, Vic., The Royal Australian College of General Practitioners, 2014.: Section 10.11 Elder abuse.

Reinert, D. and C. Edwards (2009). "Childhood Physical and Verbal Mistreatment, Psychological Symptoms, and Substance Use: Sex Differences and the Moderating Role of Attachment." Journal of Family Violence 24(8): 589-596.

Rocha-Rego, V., et al. (2012). "Decreased Premotor Cortex Volume in Victims of Urban Violence with Posttraumatic Stress Disorder." PLoS ONE 7(8): e42560.

Straus, M. A. (1979). "Measuring intrafamily conflict and violence: The conflict tactics (CT) scales." Journal of Marriage and the Family: 75-88.

Teicher, M. H. (2000). "Wounds that time won't heal: The neurobiology of child abuse."

Teicher, M. H., et al. (2006). "Sticks, stones, and hurtful words: relative effects of various forms of childhood maltreatment." American Journal of Psychiatry 163(6): 993-1000.

Teicher, M. H., et al. (2014). "Hurtful words: association of exposure to peer verbal abuse with elevated psychiatric symptom scores and corpus callosum abnormalities." American Journal of Psychiatry.

Teicher, M. H., et al. (2016). "The effects of childhood maltreatment on brain structure, function and connectivity." Nature Reviews Neuroscience 17(10): 652-666.

Tomoda, A., et al. (2011). "Exposure to parental verbal abuse is associated with increased gray matter volume in superior temporal gyrus." Neuroimage 54: S280-S286.

Vermetten, E., et al. (2003). "Long-term treatment with paroxetine increases verbal declarative memory and hippocampal volume in posttraumatic stress disorder." Biological psychiatry 54(7): 693-702.

Viatcheslav Wlassoff, P. (2015). "How Does Post-Traumatic Stress Disorder Change the Brain?"

Vissing, Y. M., et al. (1991). "Verbal aggression by parents and psychosocial problems of children." Child Abuse & Neglect 15(3): 223-238.

Wells, G. (1994). "The complementary contributions of Halliday and Vygotsky to a 'language-based theory of learning'." Linguistics and Education 6(1): 41-90.

Weniger, G., et al. (2008). "Amygdala and hippocampal volumes and cognition in adult survivors of childhood abuse with dissociative disorders." Acta Psychiatrica Scandinavica 118(4): 281-290.