

Trauma, resilience and vulnerability to PTSD: A review and clinical case analysis

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This article begins with two case examples of a girl and an adolescent who were raped and developed chronic PTSD. These are used as a basis for understanding the role of a range of factors that are associated with resilience and vulnerability in the face of traumatic events. A literature review examines the proportion of individuals who develop PTSD following trauma and the factors associated with vulnerability and resilience. These include gender, developmental factors, social support and personality factors. Psychological factors associated with maintenance of chronic PTSD are also briefly reviewed. This material is used as a basis for reconsidering the case examples. Each case is formulated within a framework based on sources of vulnerability and qualities of resilience. Approaches to intervention are suggested that could address the range of factors making the individuals vulnerable to chronic psychological problems and support resiliency and recovery.

Keywords: post-traumatic stress disorder, resilience, social support, trauma, vulnerability

Introduction

When faced with traumatic events some individuals show significant vulnerability and psychological distress and develop chronic clinical psychological problems such as depression or post-traumatic stress disorder (PTSD). In others, by contrast, qualities of resilience and strength of character come to the fore. Some of the current literature on trauma rightly focuses on resilience and coping, leaving some commentators implying that there is limited need for psychological support or intervention. However, although often a minority, those who develop chronic PTSD require special attention in the form of clinical treatment (Edwards 2005b, this issue; Leibowitz-Levy 2005, this issue). This paper presents two clinical case examples of a child and an adolescent who experienced chronic PTSD following sexual assault. This is followed by a review of psychological factors that have been shown to be related either to vulnerability to PTSD or resilience in the face of trauma. The case examples are then examined in light of these factors in order to consider what it was that rendered each of these individuals vulnerable to developing chronic problems, and what would be required in order for them to recover.

Two case examples of chronic PTSD following rape

Trauma and resilience in a rape survivor

Bulelwa was assessed by the first author at the request of a judge who had found a man guilty of raping her three years earlier. In such cases, a psychologist's report on the suffering of the victim is taken into consideration before sentence is passed. The report is a public record, and the material

presented here is a summary of it. However, names have been changed and identifying information omitted.

In the early hours of the morning just before Christmas, Bulelwa, aged 13, accompanied her friend who was going to meet a relative at a rural railway station a few kilometres from where they lived. A man accosted her and raped her. Her friend fled. The rapist was a relative of her friend and her friend subsequently withdrew from her entirely. In the immediate aftermath, Bulelwa suffered from Acute Stress Disorder. She had dissociative symptoms (psychological numbing, depersonalisation and derealisation), exaggerated startle (she would start and become numb if somebody walked suddenly into a room), waking flashbacks in which she would feel vividly as if the rape were about to happen all over again and would become tearful, and nightmares about the rape. She also lost her appetite. At times, she was afraid that she would lose control and run about screaming and shouting. The dissociative symptoms lasted for several days. The exaggerated startle and nightmares (which occurred several times a week) continued for several months. Her mother would awake in the night and hear her shouting out the name of a young man who lived close to where the rape occurred. She had called his name during the rape in the hope that he might come to her assistance. When awakened, Bulelwa would report dreams that typically took the form of a re-running of the rape and the events that preceded it.

Before the rape, Bulelwa had had an unsettled home life. When she was eight, her father stabbed her mother who had to be hospitalised. He stabbed her again on two more

occasions and later abandoned her and married another woman who did not support his seeing Bulelwa and her two siblings. Although he would visit from time to time these were occasions of sadness since Bulelwa secretly hoped that he would return to her mother and restore the family, a hope that was inevitably disappointed. Despite her distress about this, she had brief periods of depressed mood but she did not become clinically depressed. Her schoolwork was not significantly affected and she would usually come near the top of her class. Just before the rape, she successfully completed Grade Four. Socially too, Bulelwa was fairly well adjusted. In addition to the close friend she was accompanying on the night of the rape, she had other friends whom she would meet at school or in town and would sometimes bring home. However her mother, concerned that Bulelwa would get into bad company, at times discouraged her from bringing many friends home.

After the rape, the post-traumatic symptoms continued and after several months, her mother took her to a traditional healer who gave her some medicine. After this the nightmares were less frequent, but she continued to have them as well as waking flashbacks. She also reported flashbacks of her mother being stabbed and images of a group of people who threatened to take her back to the place where she was raped. A few months later she went to the local clinic and appeared to have been having panic attacks, because either she or the clinic staff expressed concern that she might have a heart attack as she could see her heart beating through her clothes and felt pain below the breast. Although her mother was concerned and supportive, her peers were not. Her best friend had abandoned her and other peers frequently taunted her about no longer being a virgin. Sometimes, seeing a group far away, she believed they were pointing at her and speaking about her disdainfully as someone who had been raped and was no longer 'intact'. These taunts evoked her post-traumatic symptoms. She also reported dryness in the throat and coughing and believed she might have tuberculosis. Despite her continued struggle with these symptoms, she successfully completed the next two years of school. The next year she withdrew from school because she could no longer bear the taunts from her peers, but, she still had contact with her peers outside school, and the taunts continued.

In the middle of the year Bulelwa left home to stay with a female cousin who lived in a city hundreds of kilometres away. She was no longer continuously troubled by nightmares or waking flashbacks. However she was lonely and missed her mother. Although not clinically depressed, she regularly experienced brief periods of depressed mood and home-sickness. She was completely isolated socially. Her cousin was out at work all day and she spent her days alone in the house doing household chores, watching TV and listening to the radio. She was mistrustful of forming friendships again, since her close friend had abandoned her. When her cousin's friends visited, Bulelwa went to bed and did not meet them. She would go out at times with her cousin but never on her own. Nevertheless she planned to go to school the following year, while living with her cousin. She looked forward to this and felt relieved that the other students would not know her at all and would not be familiar

with her history. She was planning to make friends at school but to go home by taxi and to avoid socialising outside school. Despite her shame and isolation, she was determined to rebuild her life.

Guilt and separation: a case of brother-sister incest

In the case of Nomsefo the tragic impact of trauma was also still evident a few years later, but there was little evidence that she had the resources to rebuild her life. Her half-brother who was ten years older, began to sexually molest her when she was five. This happened when he was left in charge of her while their mother, a nurse, was attending to a business she ran in her spare time. Nomsefo told her mother about it, but the mother dismissed her, saying she must not talk about such things. Nomsefo and her half-brother had different fathers, neither of whom was known to them. When she was seven, the molestation progressed to sexual penetration on three occasions. Her seven-year-old cousin who lived with the family witnessed these acts, but was never herself molested. After the third of these rapes, Nomsefo's friends noticed blood on her underwear and told her to tell her mother. Her mother took her to a doctor to whom she disclosed the molestation and rapes. She was given a referral letter to Child Welfare who would ensure that the matter was properly investigated. However, when her mother learned that the culprit was her son she drew back from reporting it and when confronted later said she was not ready emotionally to deal with making the matter public. In the meantime she still left Nomsefo alone with her half-brother. It was only a month later when a social worker intervened that the matter was reported to the police and a charge was laid. Nomsefo was sent to a foster home in a town an hour's journey away.

The investigation and court proceedings continued for three years. Shortly before the trial she was assessed by the second author at the request of the court and the assessment is a public record. Subsequently, she had some play therapy sessions and her mother gave written consent for additional material from these sessions to be included in this case summary. Fortunately, Nomsefo did not have to give evidence. During this time, her half-brother continued to live at home and their mother accompanied him to the court proceedings. She would visit Nomsefo at the foster home more or less weekly. Her visits were less frequent during her son's trial, although she did phone instead. During these contacts Nomsefo learned about progress with the court proceedings and her mother repeatedly asked her to forgive her half-brother for what had happened. However Nomsefo remained profoundly afraid of him. Eventually her half-brother was sentenced to several years in jail, but six months later, Nomsefo still had not been returned to her mother.

At assessment and subsequently, Nomsefo had PTSD and was clinically depressed. Her teachers reported that she was very sensitive, kept herself isolated from other children and was frequently irritable or tearful. On some occasions, she was disruptive in class. She experienced such separation anxiety that she had slept in the same room as her foster mother the entire time she had been there. She was only able to sleep in a separate room

several weeks after her half-brother had been jailed. Her sleep was regularly disturbed by restlessness, talking to herself and nightmares. In therapy sessions she was guarded, tense, mistrustful and disclosed feelings with difficulty. She also felt immense shame about several aspects of the abuse. She had known it was wrong from the beginning and felt ashamed that she did not tell her mother at once. When her cousin had asked her about it she had denied it. She felt ashamed that her friends at home had seen the blood on her underwear. Now, when she heard other children laughing or giggling, she would feel self-conscious and believe they were laughing at her. She was also very angry and expressed this in play sessions in the way she handled clay and other expressive materials

However she was able to express how let down and betrayed she felt by her mother, who allowed the abuse to go on so long and failed to act on the information even when she was told directly about it. The mother allowed her to be sent away and did not seem to have pushed for her to be returned home after the trial, and she supported her half-brother through the trial proceedings. She felt betrayed by her half-brother, whom previously she had looked up to, and with whom she had been close, as they played together as brother and sister. She felt let down by the legal system because, although her half-brother had finally been jailed, the process had taken a long time, during which she had been separated from her mother and home. Furthermore, one of the staff working for her half-brother's defence had tried to discourage her from testifying by telling her that if he went to jail it would be her fault. She still felt guilty that her disclosure led to her mother having to choose between her half-brother and herself, which in turn caused the break-up of the family and her half-brother being sent to jail. She also sees the second author as part of the legal system. Nomsefo told her what had happened and she reported this to the court. Although at one level she understands that the evidence had to be given, and that she was spared having to give evidence herself, her shame about the details being disclosed publicly and her guilt that this was responsible for her brother's being sent to jail, have led to difficulties in trusting her (the therapist).

Conflicting views on the appropriate psychological response to trauma

The intense distress and disorientation often experienced by individuals exposed to trauma such as rape, or occasioned by disasters, violent criminal activity and accidents, pose a challenge to emergency services workers, trauma consultants, and counsellors, as well as to the families and friends of victims involved in offering support in the aftermath. Many people believe that the best way to cope is to put the trauma behind them and this means actively putting thoughts and memories out of one's mind. 'Repress yourself' was Slater's (2003) advice in the *New York Times* a few months after the 9/11 catastrophe in New York and Washington. This is in the spirit of a captain in a US fire service who remarked, 'We used to have steel men and wooden wagons; now we have steel wagons and wooden men' (Gist and Woodall 1999, p. 211). This, of course, implies that it was regrettable that

the newer breed of fireman was weaker and more vulnerable than previous generations. This seems to be a universal attitude. Mamphela Ramphela (1995, p. 33), who became vice chancellor of the University of Cape Town in 1996, recalls her father saying, '*moshimane ke draad, ga a lle ge a e kwa bohloko*' ('a boy is like a piece of wire and should not cry'). Psychotherapists have been associated with a contrasting view. Traumatized individuals need to think about and integrate the event. By providing a forum in which to tell their story, to hear other victims tell their stories, and to discuss and reflect on their experiences, counsellors can provide the opportunity for them to gain perspective on what has happened and to rebuild their lives. Otherwise, it is argued, they may be unable to process the frightening images and frozen emotions that are the legacy of the traumatic event and are vulnerable to the development of long term psychological problems such as PTSD and depression.

These views reflect two contrasting perspectives on the impact of traumatic events, the one pathogenic, or pathogenic, the other salutogenic (Dunning, 1999). The first focuses on the way these events can overwhelm individuals who cope in ways that set them up for the development of psychological problems in the future. The second is based on the tenet that 'adversity can, and in fact most commonly will, provide challenges from which character and resilience are built' (Gist and Woodall 1999). Many individuals show considerable fortitude in the face of extremely traumatic experiences, and those who can find constructive meaning in what happened are typically able to cope well without showing evidence of long-term negative effects (Herbert and Sageman 2004).

Both pathogenic and salutogenic perspectives are reflected in experiences in South Africa. On the one hand there is an extensive literature showing that large numbers of individuals experience PTSD symptoms as a response to a range of traumatic events (Edwards 2005c, this issue). On the other, although clinicians describe work with political detainees from the apartheid era who had developed PTSD in response to isolation, abuse and torture (Dowdall 1992; Solomons 1989), there were many who did not develop PTSD and found ways to adjust well afterwards. One particularly well known story of courage and resilience is that of 'Alison', a Port Elizabeth woman who, in December 1994, was abducted and raped by two men who slit her throat, stabbed her several times (one stab wound exposed her intestine) and left her for dead (Adkins 2004; Scholtz 2004). She crawled to a road and was helped to medical care by a motorist. Her physical recovery was drawn out and complicated, but she found unexpected strength and resourcefulness within herself. Both in person as 'one of the most sought after motivational speakers in the country' (Scholtz, 2004, p. 1), and through her book, *I have life*, she has since been an inspiration to many others. She married three years later, and although afraid she would never be able to have a child, became pregnant and gave birth. A picture in the *Weekend Post* ten years after the assault shows her smiling with her 13-month-old son and husband. 'There are times,' she said, 'that the horror of it returns to me briefly, but less and less as time goes by.'

Fortunately, recent research is helping us see what is right about the idea that individuals need to talk about traumatic events within an emotionally supportive climate and what was oversimplified and misleading. We have much more information about individual differences in response to trauma, and in adjustment to its impact. We know more about what sorts of people recover from trauma without specialised help and what sorts are at risk for developing the chronic stress-related symptoms we see in PTSD. There are important truths within both the pathogenic and salutogenic perspectives on response to trauma that need to be held in balance, and Slater's cry to 'repress yourself', like so much generalised advice, will at times be a recipe for harm.

Trauma and risk factors for the development of PTSD

Although both depression and PTSD are common sequelae of exposure to trauma and violence (Marais, De Villiers, Moller and Stein 1999) as in the case of Nomsefo, and many factors associated with vulnerability and resilience apply equally to both clinical problems, this article largely examines factors relevant to PTSD in particular. Even at the time of a traumatic event and in the immediate aftermath, a significant number of those affected do not show a clinical level of stress reaction, and only a small percentage go on to develop PTSD later. Nevertheless, while many individuals show great resilience, there are numerous cases where trauma does give rise to PTSD and where it becomes chronic. This section of the article examines the proportion of people who develop chronic problems following trauma and investigates factors that are associated with risk for PTSD.

How often is trauma followed by PTSD?

Although, depending on the trauma, there is marked variation in the proportion of exposed individuals who develop PTSD symptoms, often at least a minority are affected. All 14 survivors of a military ambush, but only 20% of men and 36% of women who survived a mass murder, were symptomatic in the month following. Incidence among survivors of MVAs ranged from 19% to 42% and of assaults from as low as 30% to as high as 94% (Harvey and Bryant 2002). In the DSM-IV-TR, (American Psychiatric Association 2000) the criteria for acute stress disorder (ASD) are particularly stringent in that they include dissociative symptoms in addition to standard PTSD symptoms (see Edwards, 2005a, this issue). Nevertheless, Harvey and Bryant (1999) found that a sizeable minority of accident survivors met full ASD criteria in the acute phase: MVA – 13%, assault – 16%, burns – 10%, and industrial accidents – 12%. In the days and weeks following the trauma, there can be considerable spontaneous recovery. In a study of victims of rape and non-sexual assaults, Foa and Rothbaum (1998) found that among rape victims, 94% had PTSD two weeks afterwards, 65% at one month, 53% at two months and 47% at three months afterwards. For non-sexual assaults, 70% of women and 50% of men had PTSD 19 days after the assault; at four months only 21% of the women and none of the men met the criteria. Harvey and Bryant (2002, p. 890) conclude that 'at least half of trauma survivors who are initially symptomatic remit within the following months,'

although this does not mean that there are no longer term psychological effects.

Vulnerable individuals can be identified on the basis of specific symptoms found to predict subsequent PTSD. Dissociative symptoms were included in the diagnostic criteria for ASD based on evidence that these predicted PTSD. We now know that up to 80% of individuals with ASD go on to develop PTSD. In MVA survivors, subsequent PTSD was strongly associated with emotional numbing, depersonalisation, a sense of reliving the experience and motor restlessness in the acute phase, and, to a lesser extent, with reduced awareness, derealisation, recurrent images and thoughts, nightmares, avoidance of trauma-related thoughts or places, and exaggerated startle. These symptoms also had even stronger *negative* predictive power, as did fear, helplessness, hypervigilance, sleep difficulties and concentration problems. This means that individuals who do not manifest an intense reaction of fright or horror are rather unlikely to develop PTSD (Harvey and Bryant 2002). However, Murray, Ehlers and Mayou (2002) found that dissociation during an MVA predicted only 9% of PTSD six months later, whereas continuing dissociation one month after the MVA predicted around 30% of PTSD at six months. They concluded that 'although initial dissociation may put people at risk for PTSD, many are able to compensate by post-event processing' (p. 366).

Rapid resting heart rate and low blood cortisol post trauma also predict subsequent PTSD. These physiological measures reflect the level of activity in the sympathetic nervous system (SNS) and the hypothalamic-pituitary-adrenal system. Since cortisol lowers SNS arousal, when levels are low, SNS arousal is likely to remain high (Bryant 2003; Harvey and Bryant 2002). However, Griffin, Resick, and Mechanic (1997) described a subgroup of highly dissociated female rape victims with marked PTSD symptoms who reported feeling distressed when talking about the rape, but whose heart rate and skin conductance measures indicated low physiological arousal. They suggested there may be a subgroup of 'highly dissociative individuals who may respond with a greater physiological numbness' (p. 1 086).

Despite this progress in the identification of vulnerable individuals in the acute phase, Bryant (2003, p. 793) warns 'there is not a linear relationship between acute reactions and PTSD.' Schnyder and Moergeli (2003) found that a significant minority of serious accident victims in Switzerland showed an atypical course. Fuglsang, Moergeli and Schnyder (2004) found that among Danish victims of MVAs only 50% of those who had ASD had PTSD eight months later and 50% of those with PTSD had not had ASD. Bryant (2003) concludes that at least one third (and in some studies as many as 60%) of those who develop PTSD later have not had ASD in the acute phase. This means that a one-off screening in the immediate aftermath of trauma may not be 'the best way to identify those who will later go on to develop PTSD' (Schnyder and Moergeli 2003, p. 112).

The picture is complicated by the fact that several cognitive and emotional variables increase vulnerability to PTSD. These include fragmented and incomplete cognitive

processing of the event at the time of trauma, negative interpretation of intrusive memories, mental defeat, alienation from others, anger, rumination, and thought suppression (Bryant 2003; Ehlers and Clark 2003). In a study of 86 children hospitalised after MVAs, Ehlers, Mayou, and Bryant (2003), found that gender and the severity of the stressor explained only 14% of the variance of PTSD symptoms six months later, while this rose to 50% with the addition of these cognitive variables. Shame and guilt also prevent individuals from coming to terms with and integrating trauma (Lee, Scragg and Turner 2001). The role of these factors in maintaining PTSD is examined in more detail by Edwards (2005b, this issue).

Stressors, traumatic events and PTSD risk

The naming of PTSD as a distinct anxiety disorder was intended to give the message that it was a condition that anyone would develop in the face of overwhelmingly horrific events and it should not be interpreted as a sign of unusual psychological vulnerability. This is at least partly true. South African survey studies reviewed by Edwards (2005c, this issue) provided evidence for the relationship between PTSD symptoms and exposure to traumatic events. There is evidence from studies of American soldiers that prolonged emotional distress, and therefore risk of development of PTSD is associated with more severely traumatising events (Friedman and Marsella 1996). In a study of victims of criminal acts in an American city, Wirtz and Harrell (1987) found that those who had not been assaulted showed the same kinds of patterns of emotional distress as those who had, but the degree of distress was lower. On the basis of a review of studies in several countries, Staab, Fullerton and Ursano (1999) conclude that the most traumatising events are genocide and warfare, followed, in order, by sexual assault, physical assault, terror directed at one or a small group of people, accidents, technological disasters and natural disasters. Within these categories, the occurrence of significant injury or financial loss is associated with greater PTSD symptomatology. Those threatened with deadly weapons or with death are more symptomatic than other assault victims.

Greater frequency of exposure to traumatising events increases risk of PTSD (Friedman and Marsella 1996). In US Vietnam veterans, the greater the combat exposure, the greater was the risk of PTSD (Boscarino 1995). However, response to earlier trauma can have an inoculation effect. In studies of Norwegian firefighters and rescue workers and Israeli soldiers in Lebanon, those who coped well with a trauma the first time, were more resilient the next time, while 'soldiers who had a combat stress reaction in earlier wars were the most susceptible to combat stress in Lebanon' (Staab *et al.* 1999, p. 112). Risk of PTSD is also increased by existing life stressors at the time of the trauma. Although they did not specifically assess for PTSD, Ruch, Chandler, and Harter (1980) studied rape victims in Hawaii and found that a higher level of life stressors in the year before the rape was associated with greater psychological impact in terms of emotional distress displayed at interview, reported negative emotional states, and impairment of normal cognitive functions. Similarly, in a study of

American military veterans, King, King, Fairbank, Keane, and Adams (1998) found that life stressors after the trauma increased vulnerability to the re-emergence or maintenance of PTSD symptoms in the future

Gender and developmental factors

Gender is strongly associated with vulnerability to the development of PTSD, and studies regularly find a higher incidence of PTSD in females than in males (Schnyder and Moergeli 2003; Staab, *et al.*, 1999; Stein, Walker, Hazen, and Forde 1997). In a Canadian community survey, Stein, Walker, and Forde (2000) found that although more males (82%) than females (74%) reported exposure to traumatic events, more females (8%) than males (<2%) reported current full or partial PTSD. Only a small part of this difference could be accounted for by greater exposure to sexual trauma. Several analyses examined characteristics of respondents who reported exposure to trauma: sexual trauma (reported by 7% of males, and 32% of females) was associated with PTSD in 7% of females but in none of the males; in the 49% of males and 35% of females who had been exposed to nonsexual assault, PTSD was more frequent in females (5%) than males (1%); in the case of non-assaultive trauma (89% of males and 83% of females) rates of PTSD were less than 2% and there was no significant effect of gender. Therefore, women were more susceptible than men to developing PTSD in response to assaultive violence. The respective contributions to this gender difference of constitutional vulnerability and socio-cultural learning have yet to be established

Developmentally, with old age, individuals become less resourceful and able to protect themselves and also become more vulnerable. Neurological diseases characteristic of older age, such as strokes or dementia have been reported to bring about onset of PTSD in survivors of severe trauma not previously troubled by PTSD symptoms (Grossman, Levin, Katzen and Lechner 2004). Infants and small children may be protected from the full implications of disasters and traumas because they have limited understanding of what is happening (Masten and Coatsworth 1998) and their responses depend on how their parents react (Staab, *et al.* 1999). In studies of the traumatic effects of South African state repression under apartheid, maternal anxiety was associated with poorer coping in children (Dawes, Tredoux and Feinstein 1989; Swartz and Levett 1989) and in a more recent study of a cohort of six-year-old black children in Soweto, Barbarin, Richter and de Wet (2001) found that maternal coping contributed to children's resilience. Older children and adolescents are more vulnerable to the development of PTSD than adults, because they have developed the capacity to understand the threats they confront but do not have the resources available to adults to cope with them.

It has long been argued that significant losses or traumas, or failures of early parenting, render individuals more vulnerable to emotional distress in adulthood. Resilience in the face of adversity is associated with having a close relationship to a caring and reliable parent figure, with parenting that is authoritative and combines warmth with structure and firmness, and with connections to

supportive extended family networks (Masten and Coatsworth 1998). With respect to PTSD, although some studies found no effect of negative childhood factors (Staab *et al.* 1999), others provide evidence that those with a history of previous trauma, and in particular those exposed to sexual or physical abuse and other forms of trauma as children, are more vulnerable. Koopman, Gore-Felton, Classen, Kim, and Spiegel (2001) examined a sample of highly vulnerable women who had been sexually abused in childhood and who were seeking treatment for PTSD. They found that in most cases relatively minor events like losing a job, an argument with a partner, or a critical remark from a family member could evoke PTSD symptoms.

Liotti, Pasquini, and the Italian Group for the Study of Dissociation (2000) found that significant loss experienced by the mother during the child's first two years was a risk factor for borderline personality disorder. The same was true for childhood traumas. The unstable and unpredictable emotional states associated with this disorder make individuals vulnerable to the development of stress syndromes such as PTSD. In a large epidemiological study in North Carolina, Davidson, Hughes, Blazer and George (1991) found a very low prevalence of PTSD (less than 2%). Compared to the rest of the sample, PTSD respondents were nine times more likely to have been sexually assaulted before age 16 and close to three times more likely to have experienced parental poverty, psychiatric illness in the family, child abuse, and separation or divorce of parents before age 10. In a study of US Vietnam veterans, Bremner, Southwick, Johnson, Yehuda, and Charney (1993) found that, when combat exposure was controlled for, the group with PTSD had experienced higher levels of physical abuse as children, as well as more traumatic events, than non-PTSD controls. One of the cases of post-traumatic reaction among American soldiers in Iraq treated by Cigrang, Peterson and Schobitz (2005) seemed to have been rendered vulnerable to this reaction by a history of previous traumatic events in his life.

Nishith, Mechanic, and Resick (2000) used a path analysis to identify the relationship between PTSD symptoms and previous trauma and abuse in a study of 99 rape victims, mostly Afro-American. Childhood sexual abuse increased the likelihood of subsequent sexual and physical victimisation in adulthood which in turn was associated with more PTSD symptoms. They hypothesised that the effect of childhood sexual abuse was mediated through 'dysfunctional interpersonal schemas affecting perception of trust and safety' which rendered the individual vulnerable to becoming involved in further abusive situations. Regehr, Marziali and Jansen (1999) also implicated interpersonal schemas in vulnerability to trauma. They interviewed two groups of women who had been sexually assaulted, one that showed relatively low levels of distress and another that showed high levels. The low distress group were characterised by 'self-schemas that reflected positive early life experiences' and 'positive attachments with early caregivers' (p. 181) which were the basis for strength and resourcefulness in coping with crises.

These conclusions were supported and extended by Cloitre, Cohen and Scarvalone (2002) who examined the

interpersonal schemas of women who had been victims of child sexual abuse and subsequently revictimised (RV), an abused group who had not been revictimised (CV) and a group who were never sexually abused (NV). The schemas of the RV group reflected mistrust and expectations that others would be hostile, distant, unfriendly and lacking in interest in them. They were significantly different on these dimensions from the schemas of the NV group. Thus both these groups tended to generalise schemas based on childhood experiences to their adult relationships. The schemas of the CV group were in between those of the RV and NV groups and significantly different from both in respect of being mistrustful and expecting people to not be interested in them. The RV group had similar schemas to the CV group in respect of expectations of others as hostile, distant and unfriendly. The groups differed in their experiences of the interpersonal responses of their parents. RVs expected parents to be low in affiliation and high in control ('toxic control'), CVs expected them to be low in affiliation and low in control ('hostile neglect') and NVs expected them to be high in affiliation and low in control. This suggested that sexual abuse combined with a family environment characterised by hostile control render individuals vulnerable to revictimisation.

These studies suggest that secure attachment within a context of safety during early development provides a foundation for resilience in later life. It is not surprising therefore that an unstable or problematic family life in childhood is also associated with vulnerability to the development of PTSD. Other factors that can be consequences of instability in the developmental environment are also associated with PTSD risk. These include previous psychiatric disorder, disruptive behaviour disorder in childhood or adolescence, use of illegal substances, and a history of conflict with authorities (Friedman and Marsella 1996; McFarlane 1988).

Social factors: support versus sick role

Emotional support can come not only from the family but also from the peer group or from adults outside the family who show interest and provide mentorship, or from institutions and organisations such as schools, clubs or religious institutions. All these can contribute towards resilience in the face of hardship (Masten and Coatsworth 1998) and can specifically protect against the development of clinical problems in the aftermath of trauma (Gist and Woodall 1999; Litz, Gray, Bryant and Adler 2002). The value of social support depends on the extent to which it fits what the individual currently needs. This may be in the form of practical help that addresses immediate problems. However, emotional support, the experience of feeling understood and cared for by another, is particularly important 'perhaps because it carries important messages of both self-worth and ability to master the stress at hand' (Hobfoll, Dunahoo, and Monnier 1995, p. 41). In a Danish study of individuals who sustained injuries (mostly relatively mild) in MVAs, low satisfaction with social support was associated with a diagnosis of ASD in the aftermath of the trauma and with a diagnosis of PTSD eight months later (Fuglsang, Moergeli and Schnyder 2004). In their study of

South African police, Jones and Kagee (2005) also found that poor social support was a predictor of PTSD symptoms. Social contacts are particularly important where individuals 'use them to share the account of the trauma' (Litz *et al.*, 2002, p. 114). This is the basis on which trauma debriefing is often provided to trauma victims (see Van Wyk and Edwards 2005, this issue, for a discussion of the controversy about this).

However, other social responses can have the opposite effect. Family members or employers can on occasion be so solicitous about the well-being of traumatised individuals that they inadvertently reinforce emotional distress. As a result trauma survivors can achieve considerable secondary gain, in the form of attention, care and nurturance and relief from responsibilities. Because PTSD is a disabling condition with a psychiatric label it can be used as grounds for financial compensation or boarding on medical grounds. For this reason, the management of trauma and PTSD risk has become particularly important in organisations such as the military and the police, where PTSD can result in employees being less effective at work, taking sick leave, and successfully claiming financial compensation for disability (see Van Wyk and Edwards 2005, this issue).

Personality factors underlying resilience

With respect to temperament and personality, resilience is associated with good intellectual functioning, a sociable easygoing personality, self-confidence and self-esteem (Masten and Coatsworth 1998). With respect to PTSD in particular, more extraverted individuals, those with greater internal locus of control and those lower on neuroticism are less vulnerable (Staab *et al.*, 1999). The negative impact of the trauma is strongly related to individual's subjective appraisal of threat and danger, rather than the actual degree of danger involved (Schnyder and Moergli 2003). In a South African study, Barbarin, Richter and de Wet (2001) used a maternal self-report measure of resilience in children which taps traits such as adaptability and frustration tolerance. They found that resilience served to moderate the negative effects of community violence on child behaviour and was associated with lower levels of oppositional behaviour, somatic complaints and higher levels of academic motivation.

Jones and Kagee (2005) found differential effects of coping methods in their study of PTSD in the South African Police. Problem-focused coping was associated with higher levels of PTSD while emotion-focused coping was associated with lower levels. They report that other studies have found inconsistent relationships between modes of coping and stress symptoms. However it is possible that problem-focused coping among police personnel is associated with avoidance of dealing with distressing feelings, which, in turn, increases vulnerability to PTSD (Edwards 2005b, this issue). There was a positive correlation between emotion-focused coping and social support which could indicate that those who employ emotion-focused coping are more aware of their feelings and more able to share them with others, and therefore better able to emotionally process traumatic events.

Strümpfer (2003) identified five personality characteristics that are associated with resilience: engagement, meaningfulness, subjective well-being, positive emotions and proactive coping. Religious belief or commitment to a spiritual system can enhance the capacity to find meaning in suffering and to engage with adversity in a committed way (Masten and Coatsworth 1998; Peterson and Roy 1985). Sense of coherence (SOC) and hardiness are composite resilience factors that combine several of the factors identified by Strümpfer. Both of these include a dimension of experiencing change as a meaningful challenge. SOC also includes dimensions of comprehensibility (events are experienced as structured, predictable and explicable), and manageability (believing one has the resources to cope). Hardiness includes a sense of control over one's fate (similar to internal locus of control) and a sense of commitment. SOC and hardiness have both been shown to moderate the negative effects of stressful life events in contributing to both physical illness and psychological distress. SOC was associated with low PTSD symptomatology in a study of Swiss victims of serious accidents (Schnyder and Moergli 2003). The manageability and comprehensibility dimensions of SOC were associated with lower PTSD symptoms in South African journalists (Marais and Stuart 2005). However, these relationships may be wholly or in part artifactual since exposure to trauma might have the effect of increasing PTSD symptoms and reducing one's sense of comprehensibility, predictability and manageability. Hardiness (and also social support) was found to be protective against PTSD in US Vietnam veterans, both male and female, 18% of whom had PTSD (King *et al.*, 1998). The moderating effect of social support was linked to hardiness. Hardy individuals are good at building social support networks and 'seeking out available others for realistic help in times of stress' (p. 429). Low social support appeared to contribute to the impact of post-war life stressors and King *et al.* argued that stressful life events may 'deplete social resources, which in turn could exacerbate PTSD symptomatology'.

Resilience in the face of trauma: a summary

To summarise, resilience in the face of trauma is associated with a range of varied factors. These include temperament and personality, age and gender, the degree of adversity to which individuals have been subjected, and how well they coped with that adversity in the past. This in turn is affected by the extent to which they had a stable and authoritative family environment and meaningful emotional support and mentorship within and outside the family. The degree of resilience is also affected by the balance between present coping resources and the number of demands being made from other sources in addition to the trauma itself. Demands may include stressful relationships at home or work, domestic or occupational responsibilities, and adversity in the form of illness or financial problems affecting oneself or those close to one. Current coping resources include such aspects as proactive coping skills, current social support and a religious or spiritual belief or community that provides access to transcendent meaning and a belief in a spiritual

source of inner strength which can enable difficulties to be endured and overcome.

Vulnerability and resilience: reflections on the case examples

From this review, we can see that several factors shared by Bulelwa and Nomsefo rendered them both vulnerable to chronic PTSD. Both were targets of sexual assaults, both were female, and both were at the vulnerable stage of late childhood and early adolescence. Both of them had withdrawn socially in the face of disabling feelings of shame, and neither had meaningful social and emotional support. Neither had a secure home base. Bulelwa's father had left the family after inflicting injuries on her mother on several occasions. While living at home she did not have sufficient support from those around her to deal with the teasing and bullying she was continuously subjected to. When she moved away, she had a single relationship to support her even though she was living far from home in a strange environment. Nomsefo never knew her father. Her mother had failed to act when Nomsefo had first tried to tell her about the sexual molestations, and failed to act on the rapes until she was put under pressure by a social worker. She had had a series of boyfriends, one of whom fathered a third child by her a few months after the rape and it was possible that there had been a delay in returning Nomsefo to her home because all these factors raised the question of whether it was a suitable home for her. Although she has bonded well with her foster mother, they do not talk about the sexual molestation and rapes and Nomsefo expects that the relationship is time limited because she wants to return to her mother.

In addition, there were several factors unique to each case that probably contributed to their vulnerability.

Bulelwa: resilience and isolation

As already observed, Bulelwa had very limited social support. Although her mother was supportive, as well as her older cousin, her best friend had abandoned her, her peer group had rejected and shamed her and she had not been able to confide to anyone about the details of what had happened. As a result she had no means of emotionally processing what had happened to her. Her social isolation was perpetuated by the intense feelings of shame exacerbated by teasing by her peers. In addition, there was previous exposure to violence: before the rape, she had been exposed to violence in the home on several occasions and experienced flashbacks to those events as well as to the rape itself. Taken together, these factors made her vulnerable to chronic PTSD and help us to understand why she continued to display PTSD symptoms three years after the rape.

Nevertheless, she impressed as a courageous young woman with clear qualities of resilience. She was still hopeful about rebuilding her life. Despite the horror and shame she had been exposed to, she had continued to study effectively for two further years at school. She had initiated the plan to leave school and in due course to move elsewhere and was actively planning how to move forward in the future. She was demonstrating features of hardiness:

there was at least some sense of control over her future and a commitment to carry on with her studies. She was also beginning to experience one of the dimensions of SOC, manageability, since she believed she had the resources to cope. However, she was not experiencing another SOC dimension, comprehensibility, since events did not seem structured, predictable and explicable, and it is probable that once she started to re-engage socially she would be vulnerable to setbacks as conflicts and disappointments would easily evoke painful memories and feeling states.

Bulelwa's situation shows how the absence of social support maintains vulnerability to post-traumatic stress disorder. Without the possibility of meaningfully confiding in anybody, it would be hard for her to build on the strength of character that had carried her through thus far. She was coping by means of extreme behavioural avoidance and without professional help, it seemed that it would be difficult for her to overcome her social isolation and build trust again. Even if she were to build new friendships, it seemed likely she would still be burdened by the secret of the rape and fear of the shaming she was exposed to among her peers at home. Although she could recall the details of the events of the night she was raped, these memories had still not been emotionally processed. During the interview she often experienced intense distress and at the end her head was throbbing and she had a headache. It was therefore likely that the memories of the rape would readily be reactivated if she began to be more socially active.

Nomsefo: shame, guilt, anger and isolation

Nomsefo still suffered from PTSD and depression three years after the sexual abuse and rape by her half-brother was stopped. Her story provides many clues as to why she had been unable to adjust to what had happened to her. First, she continued to have huge demands placed on her throughout the period by the chronic separation from her family, by her relocation to a new home and school, and by her knowledge of the protracted legal proceedings that led up to her half-brother's conviction. Second, the extent of her separation anxiety shows how vulnerable and unsupported she continued to feel. Between the ages of seven and ten she only saw her mother on a weekly basis. She continued to feel betrayed by the two people she had been closest to, her half-brother and mother, she continued to carry the guilt that she had been the cause of his being sent to jail, and she continued to feel alienated from peers by the shame she still felt. All these blocked her from experiencing meaningful emotional support. Her knowledge of the legal proceedings and her mother's repeated requests for her to forgive her half-brother only served to cue her feelings of fear and shame. Alone she had no way of overcoming these obstacles, and no one in her environment, family, teachers or peers understood what she was going through or how to help her with them. Finally, she had been repeatedly disempowered first by the sexual abuse and later by being fostered away from home. Nothing had been done to give her a sense of mastery or control over her life, or to enable her to feel she had the resources to prevent further victimisation.

Conclusion: addressing vulnerability, building resilience

What could be offered to Bulelwa and Nomsefo to enable them to overcome their PTSD, and to strengthen their resilience in the future? Methods of individual psychotherapy that could help both of them are described elsewhere in this issue by Leibowitz-Levy (2005) and Edwards (2005b) and we conclude by discussing the extent to which these might be helpful in these cases.

Bulelwa seemed a promising candidate for psychotherapy although sadly we do not know whether she was able to obtain appropriate help when she returned to live with her cousin. Although it distressed her, she was able to talk about the rape and she was motivated to rebuild her life. In addition to helping her to create a full narrative of the trauma, an intervention programme would need to empower her in reclaiming her life by addressing the shame she felt about being raped and engage her in behavioural experiments through which she could build meaningful support from peers and family. Conjoint sessions with her mother and cousin would be of value in educating them in how to support her more fully, since these family members were active in trying to help her but seemed to have limited understanding of, or skills in, the kind of social support she needed. She could also benefit from interventions aimed at empowering her to confront any future attempts to victimise her.

Nomsefo is currently being offered therapy. The approach described by Leibowitz-Levy (2005, this issue) would be appropriate for her, but it is unlikely she will respond as rapidly as Pumla, in Leibowitz-Levy's case example, who made substantial progress in four sessions. Unlike Pumla, whose grandfather was a trustworthy and responsible family member who recognised there was a problem and took steps to ensure it was addressed, Nomsefo does not have a trustworthy adult to support her. Although her mother is concerned, has visited her or called her regularly since she was fostered, and is bringing her for therapy, it will be difficult for her to establish meaningful trust in her again unless the betrayal and neglect of the past can be named and addressed. Nomsefo has to deal with the fact that her mother failed to act when she told her of the molestation, failed to report the rapes even when given a referral to an appropriate agency and continued to leave her with her half-brother even after she knew what had happened. She also has to deal with the fact that her mother supported her son through the trial, and made no attempt to make some other arrangement so that Nomsefo could stay at home. Further, in her concern that she forgive her half-brother, her mother is giving the message, whether she intends to or not, that she cannot acknowledge the trauma that Nomsefo has suffered. Her mother also inadvertently fosters Nomsefo's guilt about being the cause of trouble to the family because she complains about the travelling costs of visiting her or fetching her.

At present the therapist is the only person who can offer a relationship she can trust, but it will take time to establish enough of a sense of safety for her to be able to address and integrate the traumatic sexual abuse incidents. At the same time, while she feels so unsupported by her mother it

will be difficult for her to resolve the guilt she feels about causing so much trouble to the family by her disclosure. She still wants to return home, though. But this will mean leaving her foster mother with whom she has strongly bonded. In the background too is the fact that eventually the half-brother will be released and Nomsefo probably cannot at this stage begin to conceive of how she could forgive him and trust that he will not try to do the same thing again, or imagine that her mother would be any more reliable in protecting her. This means that building a trusting relationship with the therapist may enable her to begin to process the sexual abuse and rapes, it still leaves her in a relational vacuum outside the therapy.

Certain basic conditions must be met for individual psychotherapy to be of value in treating PTSD. Individuals need an understanding of PTSD and why they are experiencing its symptoms, and they need to have some understanding of how the process of therapy can help them. They also need a stable life situation which is relatively safe and in which they have meaningful social support. Where these conditions are not met, other interventions are indicated which usually need to be multifaceted and to address a wide range of community, family and individual needs (Tarrier and Humphreys 2003). In the case of 11-year-old Nosipho presented by McDermott (2005, this issue), these conditions were met. It was the presence of a reliable and trustworthy aunt who took her in after her mother died and her alcoholic father deserted her that enabled her to engage with and make progress in integrating the traumas she had suffered from her father's mistreatment of her and her mother. It meant that when she left the therapy she went home to a place that felt genuinely loving and safe. Nosipho also displayed remarkable spontaneous insight into how the therapy was helping her, which she expressed to the therapist on several occasions. It is uncertain at this time whether this applies to Nomsefo. Family therapy may well be needed to address her experiences of betrayal and the resulting mistrust she feels towards her mother and half-brother if she is to become resourceful enough to fully process the sexual abuse. Finally, she too would benefit from interventions aimed at empowering her to confront hostile or sexual advances and obtaining her mother's active and committed support in this.

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